

# MY DREAM SCHOLARSHIP

## Impact Assessment Report

Funding Year: FY 2022-23



SCHOLARSHIPS

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## **TERMS**

IA: Impact Assessment (IA)

NGO: Non-governmental organization (NGO)

M.Sc: Master of Science

BCA: Bachelor of Computer Applications

BBA: Bachelor of Business Administration

B.Com: Bachelor of Commerce

BE: Bachelor of Engineering

IDIs: In-Depth Interviews

FGDs: Focus Group Discussion

OC: Observation Checklist

Wrt: With respect to

*Credit and the source of all the images and pictures are from the project location, project documents, SPF website, and other online repositories. The quotations have been extracted from the interviews and enhanced for correct language and sentence structure before using in the report. The quotations mentioned in the report have been extracted from the interviews of the stakeholders and enhanced for correct language and sentence structure before using in the report.*

# EXECUTIVE SUMMARY

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The CSR activities of Cholamandalam Investment and Finance Company Limited (Chola) have a considerable focus on supporting programmes aimed at the empowerment of the disadvantaged sections of society through education. The CSR initiatives aimed at education remain a priority for the organisation eventually leading to improved well-being of marginalised communities.

This report summarizes the findings of “My Dream Scholarship” implemented by the Women’s Organisation for Rural Development (WORD) Foundation. Chola, through its CSR, supported WORD Foundation for an outlay of ₹ 1,22,56,920/- to support children from economically weaker sections in continuing their education. The program has been implemented since FY 2019-20. Students of three beneficiary cohorts were targeted through this program. The first cohort comprised students from the trucking community who seldom drop out due to the unaffordability of funds. The second cohort comprised students who were single parents brought up and the third comprised students who would have lost either or both of their parents in Covid-19.

The project activities included local field coordinators per district involving in identifying the beneficiaries by liaising with the local communities of Truck Drivers and truck Owner’s Associations, auto drivers associations and exservicemen community. This was followed by the identified students being asked to fill a detailed Scholarship Eligibility Questionnaire and distribution of scholarships to these students in a stipulated time. Motivation session were also conducted for the students in each district at the beginning of the year and one counselling session in the middle of the academic year to help the students perform well academically.



# EXECUTIVE SUMMARY

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Around 141 students, 9 parents, 2 WORD co-ordinator, 1 program team members were interacted with.

It was discovered that **85.8%** of respondents reported an annual family income of less than 1 lakh rupees. Among these individuals, **87%** of scholarship applicants were college students. Regarding awareness of scholarship opportunities, **51.7%** were informed through their college administration, while 23% learned about them from acquaintances. When addressing challenges encountered, a significant majority (**94.3%**) of students reported facing none throughout the application process. Approximately **80%** of students mentioned receiving their scholarships promptly within a month of applying, with an average scholarship amount of **₹38,785**. Regarding the impact of the scholarships, **98.5%** of students acknowledged its influence on their academic decisions, while **93%** expressed contentment with the scholarship, deeming it sufficient to finance their education without the need for additional funding.

The **research design** availed mixed methods, with a parallel convergent design. Some of the locations in the project received a field visit, during which qualitative interviews were conducted. In many cases, a telephonic( digital ) quantitative survey brought further insights with a broader base of beneficiaries. Phone calls were also conducted in some cases, both with key informants, programme managers and ultimately, with the beneficiaries.

# INTRODUCTION

## **ABOUT CHOLAMANDALAM INVESTMENTS AND FINANCE COMPANY LIMITED**

Cholamandalam Investment and Finance Company Limited (Chola), incorporated in 1978 as the financial services arm of the Murugappa Group. Chola commenced business as an equipment financing company and has emerged as a comprehensive financial services provider offering vehicle finance, home loans, loan against property, SME loans, secured business personal loans (SBPL), consumer & small enterprises loans (CSEL) and a variety of other financial services to customers. Chola operates from 1191 branches across India with assets under management above INR 112,782 Crores.

The mission of Chola is to enable customers enter a better life. Chola has a growing clientele of over 25 lakh happy customers across the nation. Ever since its inception and all through its growth, the company has kept a clear sight of its values. The basic tenet of these values is a strict adherence to ethics and a responsibility to all those who come within its corporate ambit – customers, shareholders, employees and society.

Cholamandalam Investment and Finance Company Limited (Chola) believes that it has a responsibility to fulfill towards the people and the environment in shaping a better future for the nation and enabling a Better Life. The CSR programs are carried out as a blended activity along with business and covers majority of Indian states. The Focus area of the CSR projects are:



**Health**



**Water and Sanitation**



**Education**



**Art and Culture**



**Sports**

### **CSR KEY FOCUS AREAS**



**Rural Development**



**Environmental Sustainability**



**Research and Development**



**Road Safety**

# INTRODUCTION:

## Why Impact Assessment?

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### 1

#### Relevance

- To assess the relevance of strategies – are current strategies contributing to the overall goal?
- To evaluate the effectiveness of organisational structures and if the proposed goals are being reached.

### 2

#### Value creation

- To understand the changes in the life of the stakeholders of each project.
- To evaluate the intended and unintended consequences, both positive and negative of the projects.

### 3

#### Communication

- To communicate the social impact created in a credible and scientific manner
- To stimulate other funding agencies and implementation partners to collaborate with the projects

### 4

#### Improvement

- To highlight the strengths, weaknesses, opportunities and threats of each project, comparing to sector benchmarks, if any
- Make recommendations for improvement at the project level.

# RESEARCH OBJECTIVES:

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To carry out the Impact Assessment (IA), these specific objectives were chosen for Chola mandalam's CSR project in a scientific manner that ensures the validity and reliability of the results.



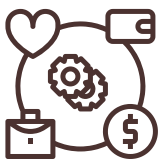
**Understanding the efficiency of the scholarship programme and its effectiveness in providing support to students.**



**Analysing the roles of various stakeholders, understanding the disbursement process and measuring the outcomes achieved by provision of scholarships.**



**To understand the scope of improvement of the project support structures and evaluate the primary stakeholders' additional/supporting needs from the program.**



**To consider the extent to which the strategies used are suited to reach the desired outcomes and the measure in which these outcomes are suited to educational needs.**



# BACKGROUND

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Access to education is often hailed as the great equalizer, providing individuals with the tools necessary to break free from poverty and achieve socio-economic mobility. However, for millions of children in the country who are born into impoverished circumstances, the pursuit of higher education remains a distant dream, obscured by the daunting specter of financial hardship. The truck driving community is one such vulnerable community, the children of which face such hardships. In addressing this pressing issue, scholarships emerge as indispensable instruments aimed at bridging the gap between aspiration and access, thereby facilitating the realization of educational aspirations among underprivileged youth.

## **Barriers to Higher Education for Poor Children**

The attainment of higher education among children of the truck driving community is often impeded by a myriad of structural and systemic barriers, chief among them being financial constraints. Families living below the poverty line often lack the resources necessary to afford the escalating costs associated with higher education, including tuition fees, textbooks, and living expenses. Moreover, the absence of a supportive educational infrastructure in these communities further exacerbates the challenges faced by aspiring students, with inadequate access to quality schools, academic resources, and guidance counseling services hindering their academic advancement.

## **The Transformative Power of Scholarships**

Scholarships represent a critical intervention in addressing the educational inequities perpetuated by socio-economic disparities, offering financial support to deserving students who would otherwise be unable to afford higher education. By alleviating the burden of tuition fees and related expenses, scholarships empower poor children to pursue their academic ambitions without the hindrance of financial constraints.

Moreover, scholarships serve as catalysts for social mobility, providing marginalized youth with the opportunity to transcend the limitations imposed by their socio-economic backgrounds and access pathways to upward mobility.

### **Impact on Educational Attainment and Achievement**

Empirical evidence underscores the transformative impact of scholarships on educational attainment and achievement among poor children. Numerous studies have demonstrated a positive correlation between scholarship receipts and higher rates of college enrollment, persistence, and degree completion among disadvantaged students. Scholarships not only enhance access to higher education but also serve as motivational incentives, instilling a sense of purpose and commitment among recipients to excel academically and realize their full potential.

## **ABOUT WORD**

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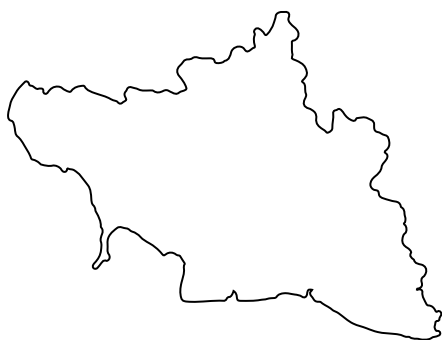
**Women's Organisation in Rural Development (WORD)** is a non-governmental organization (NGO) dedicated to enhancing the welfare of rural communities, with a particular focus on women and children at the grassroots level. Operating across various domains, WORD's holistic approach contributes to the comprehensive advancement of women, children, and society. Emphasizing community engagement, WORD's initiatives are participatory, ensuring the active involvement of individuals at all project phases.

# MY DREAM SCHOLARSHIP PROGRAM

**My Dream Scholarship Program** for the year 2022-23" utilized a **comprehensive poverty alleviation model** that focused on individual children of trucker communities, while bringing lasting change on a community-wide scale. The program's primary objective was to provide severely underprivileged children with the resources they needed for college education, technical education or higher studies, instead of having to enter into the labour force, and thereafter keeping them on track to help them become independent and productive citizens through educational and training opportunities.

The program also helped a group of students who had lost either or both their parents in Covid pandemic.

The following were the working locations for the project:



- Namakkal
- Dharmapuri
- Krishnagiri
- Salem
- Erode
- Karur
- Tiruppur
- Perambalur



Identification of potential children



Engaging with appropriate educational institutions



Agreement with the students and parents of the scholarship awarded children



Payment of scholarship

# RESEARCH DESIGN:

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For the present study, the approach chosen was **mixed methods**, to avail the advantages of both methods. A survey was used to generate quantitative primary data on the situation of the ITI students and alumni. This will allow a broader view and scalable conclusions. Nevertheless, the survey could become detached from reality or ineffective if it was not supported by a previous engagement with the students via in-depth interviews, to obtain insights into their drivers and challenges. Thus, the questionnaire used in the survey was elaborated and refined to reach subtleties of the social impact.

The qualitative approach has been also helpful for generating an **actor's perspective** (current batch, passed-out batch, family members of the research participants, trainers, and management of the institute).

The mixed-methods avails a **convergent parallel design** to draw overall conclusions. In this procedure, the study weighs the methods equally, analysing the two components independently, and interpreting the results together (Creswell & Pablo-Clark, 2011).

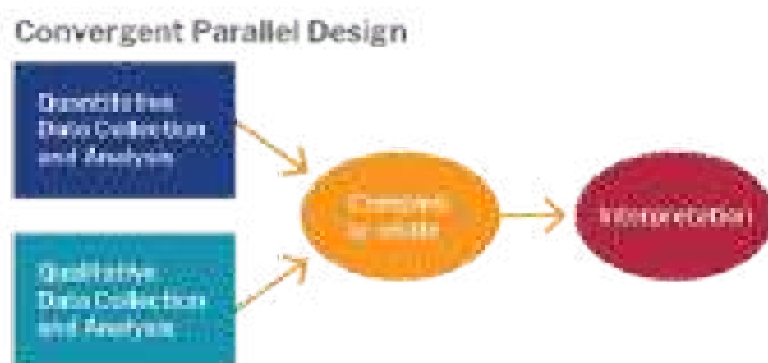


Figure 1: Convergent parallel design

The interaction happened with a diverse group of stakeholders to collect information on the key indicators to assess the impact of the project. The data received from both qualitative and quantitative approaches was **triangulated** to address to enhance the credibility of our findings (Carvalho & White, 1997)



# Assessment Framework

## 1. OECD DAC

At a project level, the OECD DAC was used as a framework to guide the evaluation. The OECD Network on Development Evaluation (EvalNet) has defined six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact, and sustainability – and two principles for their use. These criteria provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, program, project, or activity).



Source: [oecd.org/dac](http://oecd.org/dac)

Figure 2: OECD DAC framework

# DATA COLLECTION

Sr. No.	Interviewees	Tool used	Sample
1	Students	In-person & Telephonic IDI (In-Depth Interview)	141
2	Parents	In-person In-depth interview	9
3	WORD Field Coordinator	In-person In-depth interview	2
4	Program Team Members	Telephonic IDI	1

Table 1:Sampling matrix

## Data Analysis

Data was collected from various sources, including surveys, interviews, and existing literature, to capture diverse perspectives and insights. Following this, a rigorous data cleaning process was undertaken to rectify errors and inconsistencies, ensuring the integrity of the dataset. Following this, quantitative methods including univariate and bivariate analyses were utilized to measure the extent and importance of the social impacts identified. Concurrently, qualitative data underwent thematic analysis and content analysis to extract nuanced meanings and understandings from narratives and responses. The integration of these quantitative and qualitative findings provided a holistic perspective on the project's social impacts, capturing both the breadth and depth of its effects on stakeholders and communities. This blended approach facilitated a nuanced interpretation of the data, allowing for a more robust assessment of the project's social implications. Finally, the results are synthesized and communicated effectively to stakeholders through this report, using various forms of visualizations, informing decision-making processes and guiding future strategies for social development and sustainability.



# FINDINGS

# DEMOGRAPHY

The study's objective was to evaluate the influence of Cholamandalam's support through scholarships for the children within the truck driving community. To gauge this influence, the study conducted interviews and surveys with students, parents, and coordinators. A cohort of 125 students engaged in the study, offering insights into their educational progress following the assistance received.

Type of Participants	Students	Teachers/Principal	WORD Co-ordinator
No. of participants	125	2	1

Table 2: Participants' diivision

## GENDER DISTRIBUTION OF RESPONDENTS

The project's participant demographic primarily **comprised females, accounting for 66.9% of the recipients of scholarships**. Given that approximately two-thirds of respondents in this study were female, it heightened the risk of limited access to quality education due to systemic educational barriers faced by female students. Consequently, the program effectively addressed this intersection of gender and economic marginalization, facilitating access to scholarships for disadvantaged students and mitigating barriers to education.

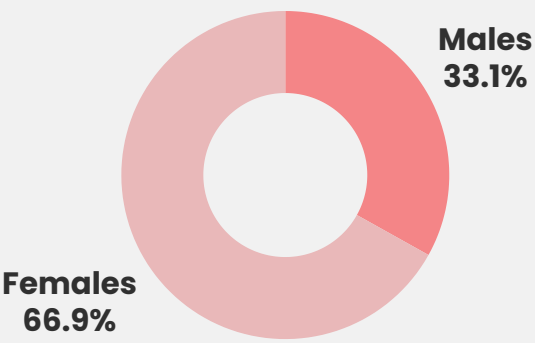


Figure 3: Gender distribution



# DEMOGRAPHY

## ANNUAL INCOME LEVELS

An overwhelming majority, **85.8% of respondents, reported an annual family income of less than 1 lakh rupees**, underscoring significant economic disparities within families, rendering quality education financially out of reach.

This disparity in family income levels highlights a systemic issue that limits access to quality education based on financial circumstances. By prioritizing scholarships, and support programs for students of families from this economic background, the program ensures that they have the opportunity to receive a quality education and pursue their goal without carrying the burden to ease the financial pressure.

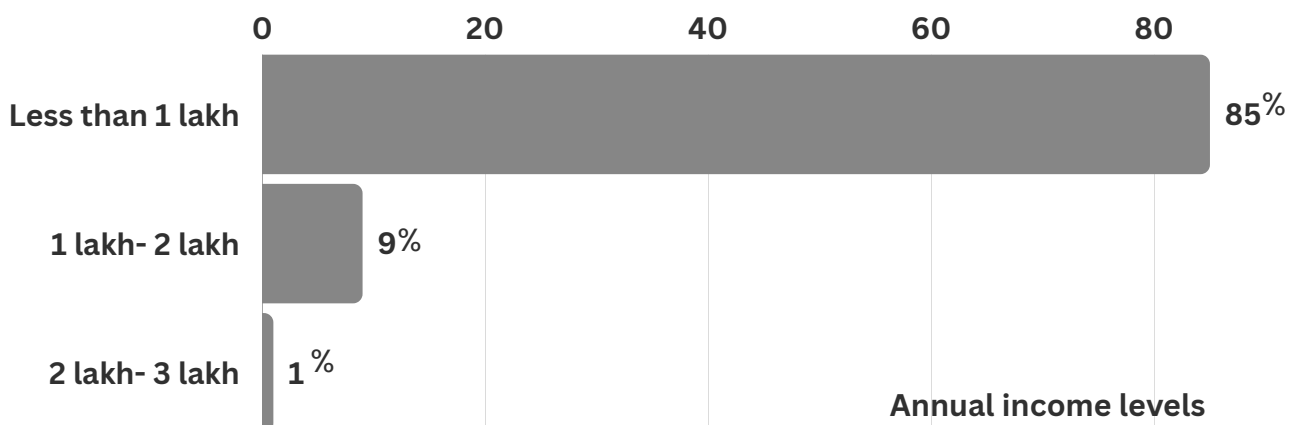


Figure 4: Income levels

“Father works 17 days a month. I have seen him struggle with money. We have faced issues with paying the rent and my college fees. Once, I was warned by my teacher about not being allowed to sit for examinations. The scholarship has allowed me to continue my education while not putting a burden on my father.”

-A B.Tech student

# DEMOGRAPHY

## EDUCATION

Approximately **87% of the scholarship applicants were college students**, pursuing various disciplines such as arts, science, and engineering. A smaller portion, **10%, comprised school students** seeking scholarship assistance. The program demonstrated success in reaching and supporting its intended beneficiaries, primarily focused on aiding community children in their pursuit of higher education. Notably, **3% of the scholarship recipients were employed in the IT sector**, juggling work responsibilities with their studies while supporting their families. The WORD initiative effectively extended its reach to assist these students in their educational endeavors.

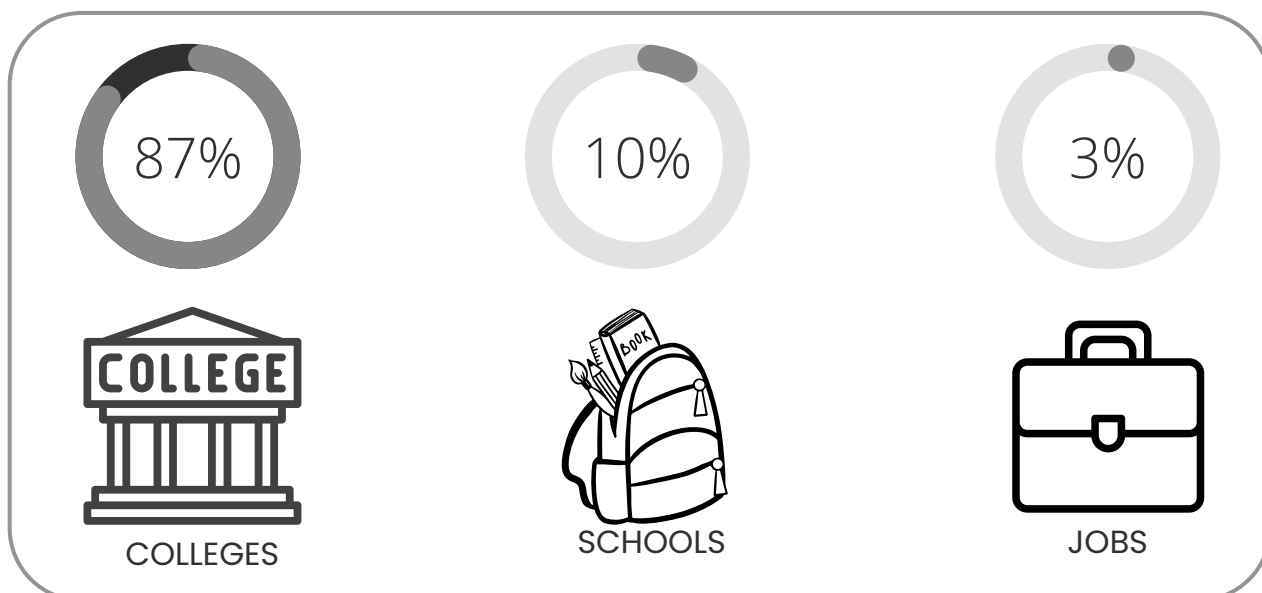


Figure5: Education levels of children

## PARENTS' OCCUPATION

The majority of the students' parents had blue-collar jobs. Of the total students, **86% of them had both parents alive, out of which a majority, 89% of the fathers were truck drivers**. This job required them to move around frequently, allowing them less time to pay attention to their children's education. The mothers of these families were primarily homemakers while a small percentage were tailors and home-tuition teachers.

# ACCESS TO SCHOLARSHIP

## AWARENESS ABOUT SCHOLARSHIP



A significant portion of students sought the scholarship to alleviate financial constraints within their families. Among these students, approximately **51.7% were apprised of the scholarship program through their college administration, while 23% learned about it from acquaintances. Notably, 25% of students were informed about the opportunity through the WORD Foundation.** The pivotal role of the implementation partner is evident in disseminating information to educational institutions, workplaces, and other relevant entities, acting as a conduit for students to access educational support.

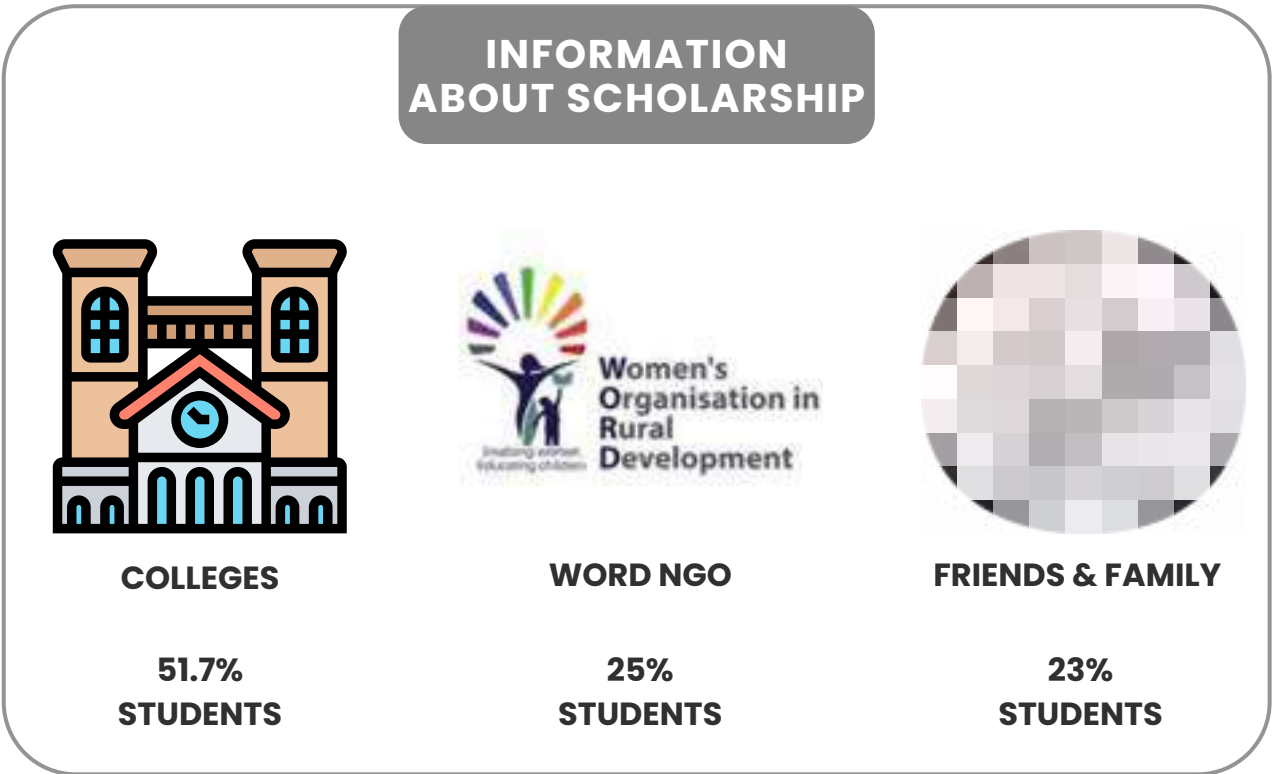
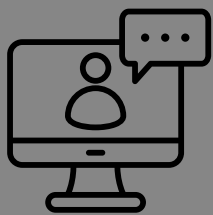


Figure6: Awareness about scholarships

# ACCESS TO SCHOLARSHIP

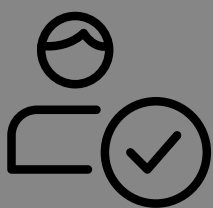
## PROCESS OF APPLICATION



The application process was made flexible by allowing students to interact with the WORD team both virtually and in-person. The WORD team extended these options to accommodate students encountering difficulties with physical attendance. **Approximately 92% of the students opted for the in-person application method**, while the remaining applicants chose the virtual route.



The process entailed verifying various documents including the AADHAR card, bank passbook, report cards to confirm eligible percentages, collecting passport-sized photos, income certificate, bonafide certificate, original fee receipt, current results, and, if required, the death certificate of the father. Additionally, IDs of parents, stationary fees, and other related documentation were also part of the requirements. A review process was carried out by WORD through physical verification of the documents.



The eligibility criteria to avail the scholarship for subsequent years includes:

- No arrears
- Previous year result
- Attendance percentage must be above 80



The average percentage of marks received by students for qualification of scholarship was 75%.



# ACCESS TO SCHOLARSHIP

## EASE IN APPLICATION

The interaction with students indicated that the scholarship application process was perceived as straightforward and convenient. **An overwhelming majority, 94.3% of students, reported encountering no challenges throughout the process.**

The rest **5.7% of the students** faced a similar concern on being asked about their challenge. They all faced difficulty in submitting their documents as some of their colleges did not issue these in time.

It was known by the interaction with the students that the WORD team played a significant role in supervising and dispensing the process smoothly. Most of the students had Field Coordinator (WORD team) and their School Teacher/Principal as the main points of contacts whom they submitted their applications to.

An easy process of application was an enabling factor in the number of students accessing the scholarships. The user-friendly application process played a significant role in increasing the number of students who were able to access the scholarships. By streamlining the application procedure and making it accessible to a wider audience, more individuals were able to apply and benefit from the available scholarships. This inclusive approach not only helped more students financially but also encouraged a diverse range of applicants to pursue their educational goals.

**94.3%**

faced no challenges in the application process

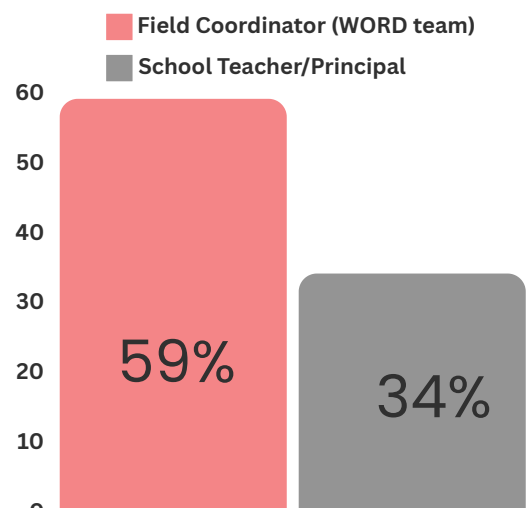


Figure 7: Percentage of students connecting with different POCs.

“

I received a lot of help from the WORD coordinators while applying for my scholarship. There were a few doubts I had while filling in the form that were cleared by their help.

—A B.Com. student

”

# ACCESS TO SCHOLARSHIP

## FLEXIBILITY IN APPLICATION TIMELINE

Approximately **62% of students applied for scholarships either at the commencement of their courses or prior to their initiation.** The **remaining 38% submitted their applications during the middle or towards the conclusion of their academic programs.** A similar trend was noted in the distribution of scholarships, with **64% of recipients receiving them after completing a semester of their studies.** The flexibility of the program to apply for the scholarship throughout the course duration, emerged as facilitating factors that enabled more students to benefit from the scholarship program.

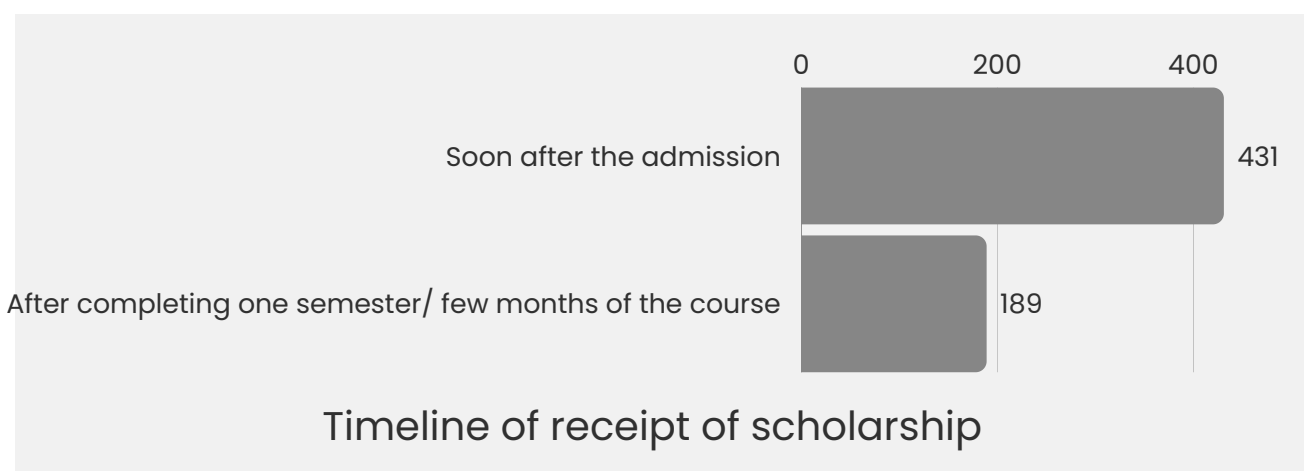
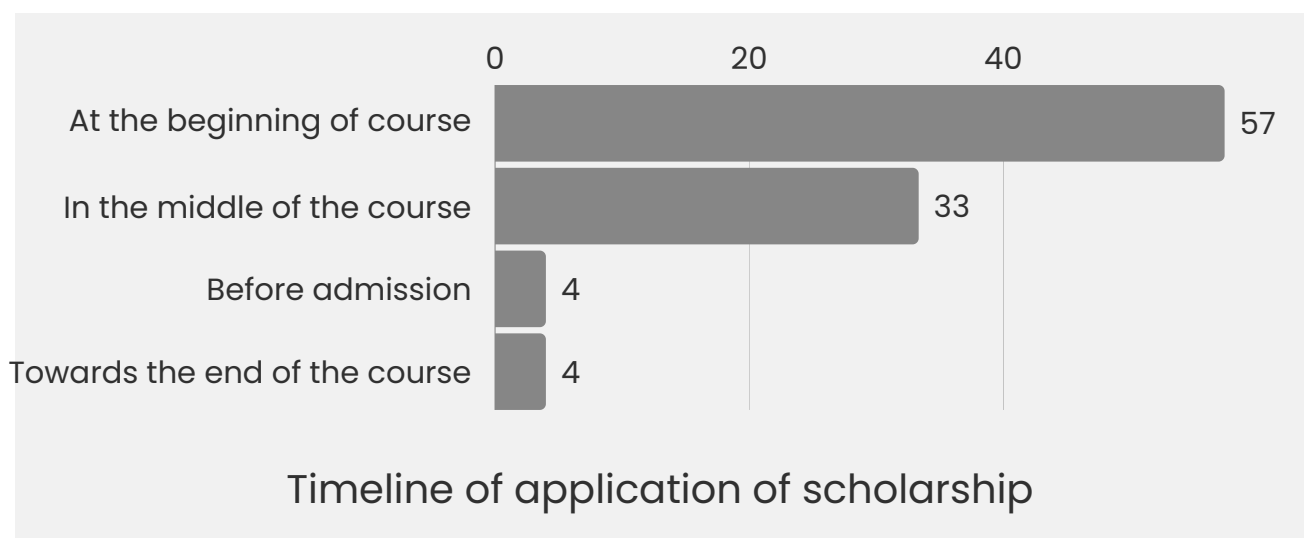


Figure 8: Application timeline

# ACCESS TO SCHOLARSHIP

## RECEIPT OF THE SCHOLARSHIP

The majority of students, comprising **80%**, indicated that they received their **scholarships promptly within one month of application**. Conversely, 20% reported a delay in receiving funds beyond the one-month mark. Some of them reported errors wrt. their account details to be the reason due to which they were asked to resubmit these details while the others flagged the same reason as earlier to be the reason; delay from the universities and colleges in receiving their documents.

For the majority, a timely disbursement enabled students to meet their tuition obligations promptly, ensuring they could participate in examinations without financial hindrances. The flexible application timelines empowered students to apply as needed and receive the scholarships in a timely manner.

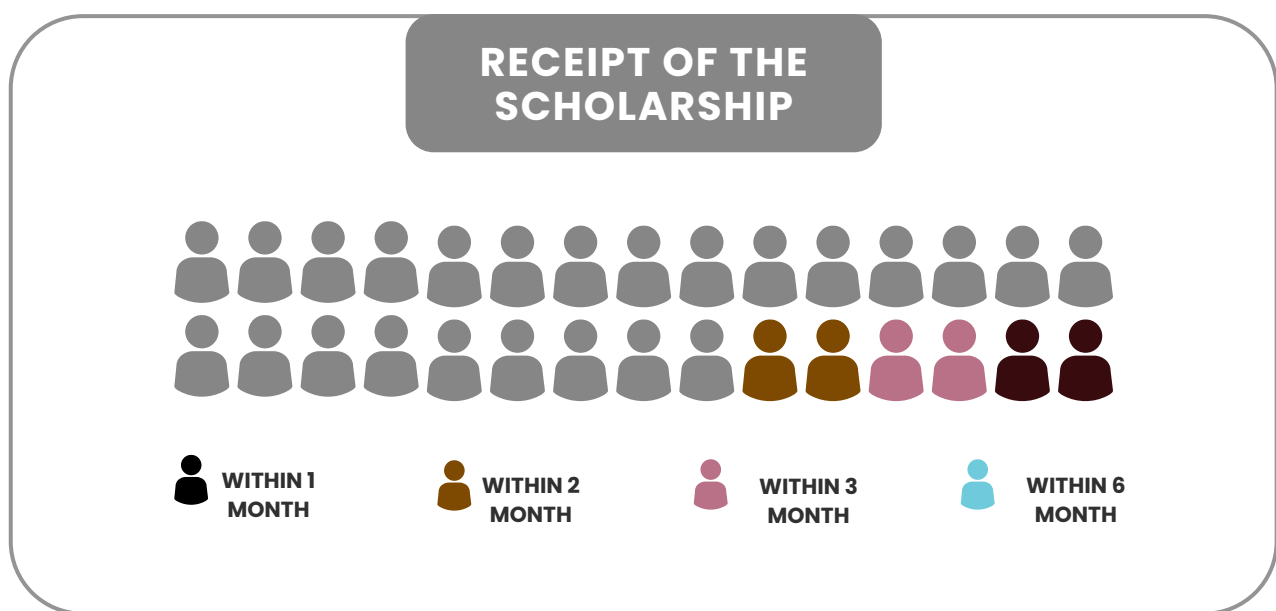


Figure 9: Timeline of receiving the scholarship.

“

I was expecting to receive my scholarship in 2-3 months while i received it in just 3 weeks. This helped me to pay tuition fees much before time.

-A BCA student

”

# ACCESS TO SCHOLARSHIP

## SCHOLARSHIP AMOUNTS RECEIVED

100% of the students received these scholarships in their bank account. **On an average, students received a scholarship amounting to ₹ 38,785, while the median scholarship value stood at ₹ 27,700 .** The distribution of these scholarships indicated that 46% of students received them annually, with the remaining 16% receiving them biannually or on a semester basis. Notably, the majority (83%) of students did not receive one-time scholarships.

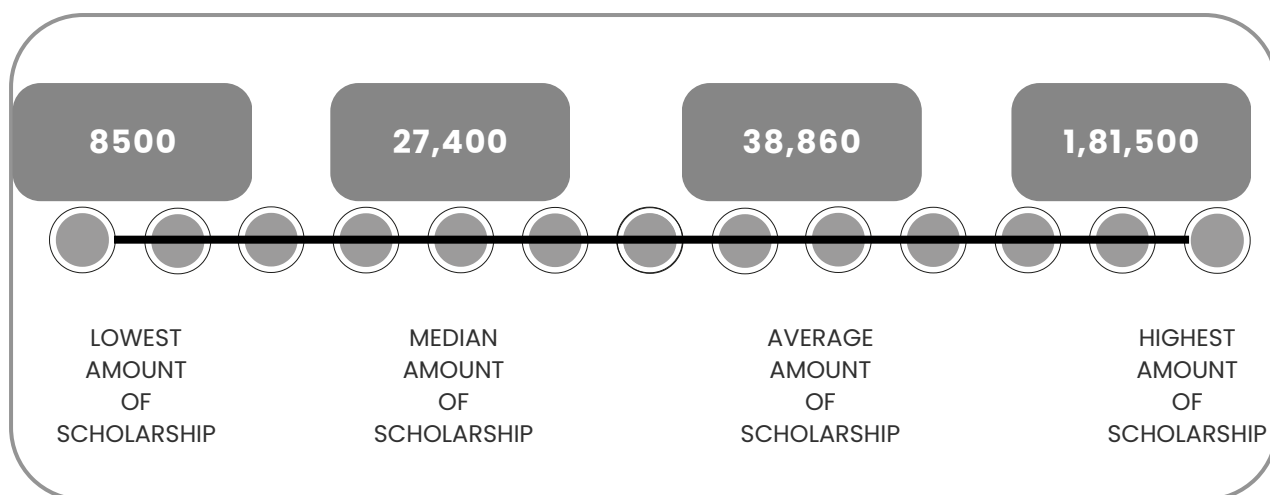


Figure 10: Amount of scholarship received

“

I received the scholarship directly in my bank account twice a year that covered my semester fees. It was just enough to cover my college expenses and gave me the opportunity to complete my studies.

–A B.Sc. Student

”

# SUPPORT AND EFFICIENCY OF SCHOLARSHIP PROGRAMME

## ASSISTANCE IN SELECTING STREAMS

The report highlights a consensus among students, program teams, and teachers regarding the favorable impact on education. Noteworthy is that **98.5% of students recognized the scholarship's role in guiding their choice of academic pathways.** Selected streams by students encompass:

98.5%

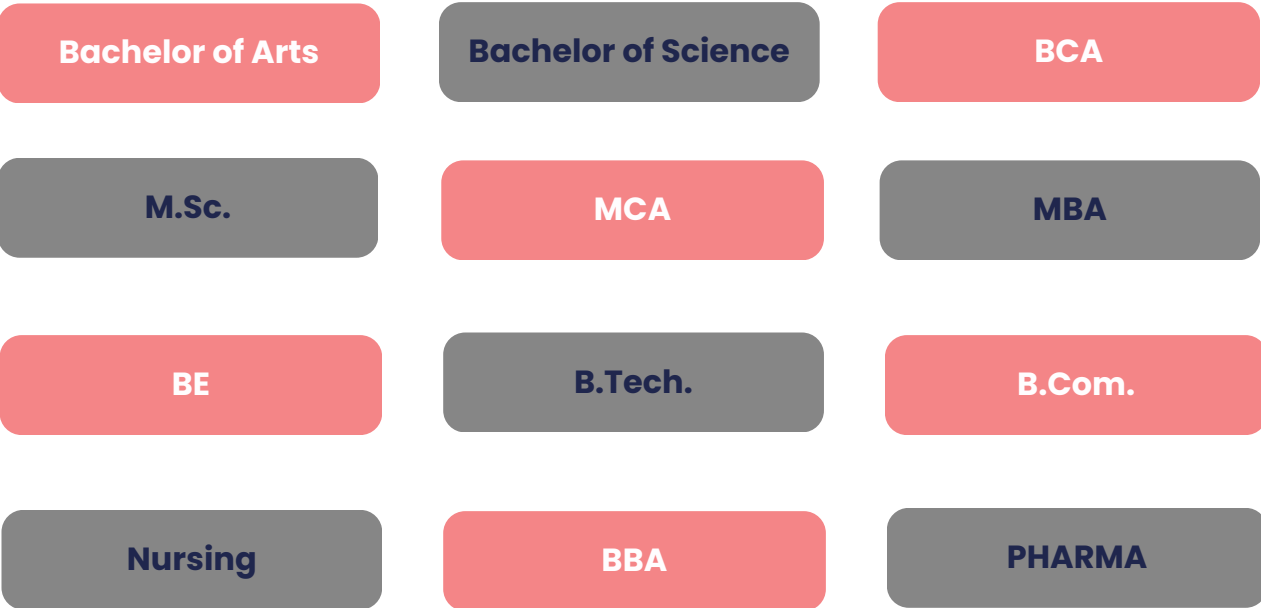


Figure 11: Various streams chosen by students

# SUPPORT AND EFFICIENCY OF SCHOLARSHIP PROGRAMME

## ADEQUACY OF SCHOLARSHIP AMOUNT

**Seven out of ten students** found scholarship fund sufficient to help them complete their course.



The scholarship offered proved highly advantageous, as **93% of the students reported no need to pursue additional scholarships** since this scholarship fulfilled their financial need to continue their education. Moreover, **90.7% expressed their intention to continue their education post-scholarship**. This underscores the program's efficacy in aiding students with adversities like parental loss or financial constraints.

This aid enabled the prompt settlement of semester fees, guaranteeing continuous advancement in their academic endeavors. Beyond the scholarship, the WORD Foundation periodically provided students and their parents with counseling sessions and motivational gatherings. Students expressed gratitude, recognizing that without the scholarship, they would have faced various challenges, such as:

Father forced to take loan  
Fall in debt trap  
Negotiate with college  
Forcibly get a bank loan  
Financial difficulty  
Discontinuity in education  
Change of schools to government schools  
Not allowed to write exam

Figure 12 Possible challenges faced by children in case of lack of scholarships.

# SUPPORT AND EFFICIENCY OF SCHOLARSHIP PROGRAMME

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## FUTURE PROSPECTS

The scholarships offered the students clarity and a sense of direction, enabling them to aspire to various professions that may have been challenging to pursue without continued educational support. Feedback from participants indicated that the program allowed them to concentrate on their studies for fields and careers such as those listed below:

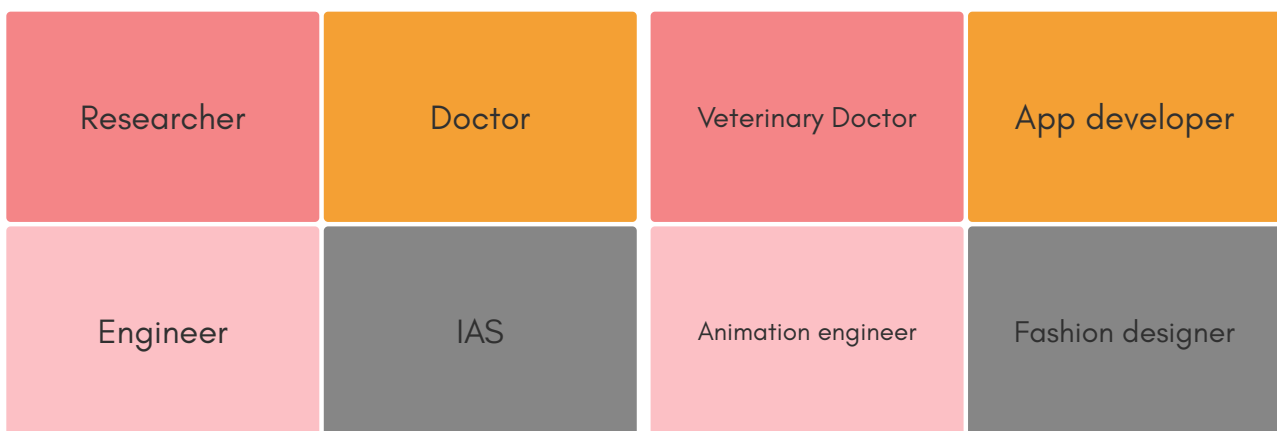


Figure 13: Future prospects



# SATISFACTION WITH PROGRAM

Approximately **90% of students benefiting from scholarships expressed significant appreciation for the program and expressed a willingness to endorse it to their peers and friends.** Parents of the students gave an overall rating of "5" to the program on a scale of 1 to 5. The program's high satisfaction rate can be attributed to its ability to facilitate continued education and provide scholarships efficiently within a minimal timeframe. The resounding endorsement underscores the program's effectiveness, value, and benefit to the students, effectively addressing their needs and challenges. This positive feedback suggests a potential increase in scholarship applications from students seeking support from Cholamandalam to further their education.

EXCELLENT

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**92.9% of respondents expressed personal satisfaction with the program,** indicating a willingness to recommend it to friends with similar needs. Notably, 85% of these individuals have already referred them to the WORD Foundation.

The positive feedback received from participants underscores the effectiveness and impact of the program offered by the WORD Foundation. As the foundation continues its work to support individuals with diverse needs, this organic support and endorsement from satisfied participants has the potential to help reach and assist even more individuals seeking assistance and guidance.



# RECOMMENDATIONS

## **Consider supporting more students of the single mother/parents.**

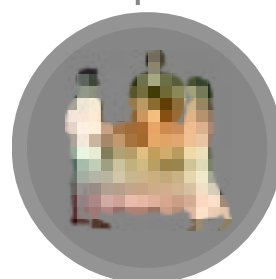
16% of the students receiving scholarships were children of single mothers. Supporting more students from single-mother or single-parent households is crucial to providing equal opportunities for all. By expanding scholarship opportunities and resources for these students, Cholamandalam can help empower them to pursue their educational goals and achieve success. It is important to recognize the unique challenges faced by students from single-parent families and to provide them with the support they need to thrive academically.



## **Establish smoother communication channel**

between students and implementation agency by having a few student representatives who act as POCs for NGO.

This initiative can greatly enhance the collaboration between students and the implementation agency. By appointing student representatives as points of contact for the (NGO), a more direct and efficient communication channel can be established. These student representatives can bridge the gap between the two parties, ensuring that concerns, suggestions, and feedback are effectively conveyed and addressed. This approach not only fosters transparency and trust but also promotes a sense of ownership and involvement among the students, ultimately leading to more successful and impactful projects.



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# RAAHI: TRUCKERS EYE HEALTH PROGRAMME

## Impact Assessment Report

Funding Year: April 2022–March 2023



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- Support and access to the program
- Personal experience of program
- Impact of program
- Satisfaction with program
- Impact

6. Recommendation

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Table 2: Participants' division

## **FIGURES**

Figure 1: Distribution of respondents

Figure 2: Age distribution chart

Figure 3: Age distribution

Figure 4: Education levels

Figure 5: Income range

Figure 6: Health history

Figure 7: Average no. of hours spent driving

Figure 8: Reference for enrollment to program

Figure 9: Percentage of drivers accessing camps & centres

Figure 10: Convenience in reaching camps

Figure 11: Charging of fees

Figure 12: Attention received by doctors

Figure 13: Percentages of drivers reporting conditions of equipments and centres

Figure 14: Influence on vision

Figure 15: Improvement in focus on road

Figure 16: Satisfaction with program

## **TERMS**

Impact Assessment (IA)

NGO: Non-governmental organization

IDIs = In-Depth Interviews

FGDs = Focus Group Discussion

OC = Observation Checklist

Wrt: With respect to

*Credit and the source of all the images and pictures are from the project location, project documents, SPF website, and other online repositories. The quotations have been extracted from the interviews and enhanced for correct language and sentence structure before using in the report. The quotations mentioned in the report have been extracted from the interviews of the stakeholders and enhanced for correct language and sentence structure before using in the report.*

# EXECUTIVE SUMMARY

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The CSR activities of Cholamandalam Investment and Finance Company Limited (Chola) have a considerable focus on provision of access to basic necessities like healthcare. The CSR initiatives aimed at health remain a priority for the organisation eventually leading to improved well-being of marginalised communities.

This report summarizes the findings of “RAAHI: Truckers Eye Health Programme ” implemented by SightSavers NGO. Chola, through its CSR, supported SightSavers for an outlay of ₹ 5,15,99,780- to support the trucker community and allied workers in accessing eye-checkups through medical camps and static centers. The program has been implemented since FY 2022-23 and supports the commercial drivers and allied workers across various locations with the aim of ensuring road safety & enhancing the quality of life by enabling clear eye vision among them.

The project involved assigning local field coordinators to each district to support truck drivers in enrolling for the program. Static centers were established in these districts, in addition to exclusive camps held in various locations across 13 states. A comprehensive 360-degree marketing campaign was implemented, utilizing electronic, print, digital, and radio platforms to promote the scope, scale, and solutions provided by the RAAHI program. To enhance primary eye care services among the trucker community, a mobile van was proposed for deployment. The project was designed to operate on a camp-based model.



# EXECUTIVE SUMMARY

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Around 25 truck drivers, 2 doctors/nurses, and 1 Sightsavers Co-ordinator were interacted with.

It was observed that **72%** of participating drivers had completed education up to the upper primary level. Furthermore, a significant majority of families, accounting for **64%**, reported an annual income below ₹ 2 lakhs. Health issues were prevalent among respondents, with **32%** experiencing conditions such as farsightedness, high blood pressure, arthritis, and diabetes. Notably, **80%** of truck drivers lacked health insurance coverage. Regarding the application process, **92%** of drivers found it to be straightforward. The majority, at **56%**, appreciated the convenient locations of the camps near petrol pumps or transport offices. Participants unanimously rated the campsites as excellently maintained, with **92%** specifically highlighting the pristine condition of the equipment. Additionally, **60%** of individuals who were prescribed spectacles successfully incorporated them into their daily routines.

The **research design** availed mixed methods, with a parallel convergent design. Some of the locations in the project received a field visit, during which qualitative interviews were conducted. In many cases, a telephonic (digital) quantitative survey brought further insights with a broader base of beneficiaries. Phone calls were also conducted in some cases, both with key informants, programme managers and ultimately, with the beneficiaries.

# INTRODUCTION

## **ABOUT CHOLAMANDALAM INVESTMENTS AND FINANCE COMPANY LIMITED**

Cholamandalam Investment and Finance Company Limited (Chola), incorporated in 1978 as the financial services arm of the Murugappa Group. Chola commenced business as an equipment financing company and has emerged as a comprehensive financial services provider offering vehicle finance, home loans, loan against property, SME loans, secured business personal loans (SBPL), consumer & small enterprises loans (CSEL) and a variety of other financial services to customers. Chola operates from 1191 branches across India with assets under management above INR 112,782 Crores.

The mission of Chola is to enable customers enter a better life. Chola has a growing clientele of over 25 lakh happy customers across the nation. Ever since its inception and all through its growth, the company has kept a clear sight of its values. The basic tenet of these values is a strict adherence to ethics and a responsibility to all those who come within its corporate ambit – customers, shareholders, employees and society.

Cholamandalam Investment and Finance Company Limited (Chola) believes that it has a responsibility to fulfill towards the people and the environment in shaping a better future for the nation and enabling a Better Life. The CSR programs are carried out as a blended activity along with business and covers majority of Indian states. The Focus area of the CSR projects are:



**Health**



**Water and Sanitation**



**Education**



**Art and Culture**



**Sports**

### **CSR KEY FOCUS AREAS**



**Rural Development**



**Environmental Sustainability**



**Research and Development**



**Road Safety**

# INTRODUCTION:

## Why impact assessment?

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### 1

#### Relevance

- To assess the relevance of strategies – are current strategies contributing to the overall goal?
- To evaluate the effectiveness of organisational structures and if the proposed goals are being reached.

### 2

#### Value creation

- To understand the changes in the life of the stakeholders of each project.
- To evaluate the intended and unintended consequences, both positive and negative of the projects.

### 3

#### Communication

- To communicate the social impact created in a credible and scientific manner
- To stimulate other funding agencies and implementation partners to collaborate with the projects

### 4

#### Improvement

- To highlight the strengths, weaknesses, opportunities and threats of each project, comparing to sector benchmarks, if any
- Make recommendations for improvement at the project level.

# RESEARCH OBJECTIVES:

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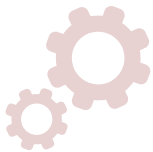
To carry out the Impact Assessment (IA), these specific objectives were chosen for Cholamandalam's CSR project in a scientific manner that ensures the validity and reliability of the results.



**Capturing the perspectives of truck drivers about the eye check ups received by them and their impacts.**



**Understanding the project implementation and process of providing meaningful support to the truck-driving community.**



**To comprehend the extent of enhancements required for the project support frameworks and assess the supplementary requirements of the key stakeholders from the program.**



**To assess the alignment of employed strategies with the intended outcomes and to determine the extent to which these outcomes cater to educational requirements.**

# BACKGROUND

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Truck drivers play a crucial role in the transportation industry, ensuring the delivery of goods across vast distances. However, their job also comes with inherent risks, particularly concerning road safety. Among the various factors influencing road safety, the importance of good vision cannot be overstated. In this study, we delve into the significance of regular eye checkups for truck drivers, examining how maintaining optimal visual health can enhance safety on the roads and improve overall well-being.

## **Importance of Vision for Truck Drivers:**

Clear vision is essential for safe driving, particularly for professionals who spend extended hours behind the wheel. Truck drivers encounter diverse environmental conditions, including varying light levels, adverse weather, and challenging terrain. As such, they must possess keen visual acuity to navigate these conditions effectively. The ability to perceive hazards, read road signs, and judge distances accurately is all reliant on good vision.

## **Potential vision-related hazards:**

Visual impairments pose significant risks on the road, potentially leading to accidents, injuries, and fatalities. Conditions such as myopia, hyperopia, astigmatism, and age-related vision deterioration can compromise a driver's ability to perceive and react to potential dangers promptly. Moreover, undiagnosed or untreated eye diseases like glaucoma or cataracts can exacerbate these risks, gradually impairing vision over time.

## Impact on Road Safety:

Ensuring that truck drivers maintain good vision is essential not only for their safety but also for public safety and economic stability. Accidents involving commercial vehicles can cause severe harm, including loss of life, damage to infrastructure, and financial losses. Therefore, it is crucial to prioritize regular eye checkups for truck drivers as part of broader efforts to improve road safety and reduce the societal costs associated with transportation-related accidents.

By proactively addressing vision-related impairments, individuals can mitigate risks, improve their driving performance, and contribute to a safer transportation environment. To achieve this, a collaborative effort that involves education, access to care, and regulatory measures is necessary. By working together to promote preventive healthcare that prioritizes the visual health of truck drivers, both drivers and society at large will benefit.

## ABOUT SIGHTSAVERS

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**Sightsavers India** is a **non-profit organization** dedicated to eradicating preventable blindness and advocating for equal opportunities for individuals with disabilities. Through its initiatives, Sightsavers India has empowered numerous individuals to live independently and with respect. Collaborating with governmental entities and local stakeholders, the organization has played a pivotal role in fortifying institutions and communities, while facilitating the treatment of millions afflicted with ocular ailments.

# RAAHI: TRUCKERS EYE HEALTH PROGRAMME

**RAAHI** - National Truckers Eye Health Programme formally launched in October 2017 by Sightsavers, is one of the biggest **Eye Health Programmes for the truck drivers' community**. The project covered the **Sustainable Development Goal (SDG) target 3.6** i.e., to halve the number of global deaths and injuries from road traffic accidents. The main aim of the project was to ensure road safety & enhance the quality of life by enabling clear eye vision among commercial truck drivers & allied workers. The program works on a dual approach: static centre and outreach camps. Static centres function as nodal points located mostly in transport areas with eye screening, refraction and referrals are undertaken along with the dispensing of spectacles to those identified with refractive error.



Application of potential truck drivers in the program



Dianosis of ailments



Instructions ,guidance and support for the required medical attention

**The following were the 19 working locations for the project:**

- Paradeep
- Kolkata
- Ludhiana
- Vijaywada
- Raipur
- Kanpur
- Allahabad
- Vishakhapatnam
- Haldia Port.
- Chennai
- Bangalore
- Navi Mumbai
- Ahmedabad
- Indore,
- Agra
- Salem
- Dhanbad,
- Aurangabad



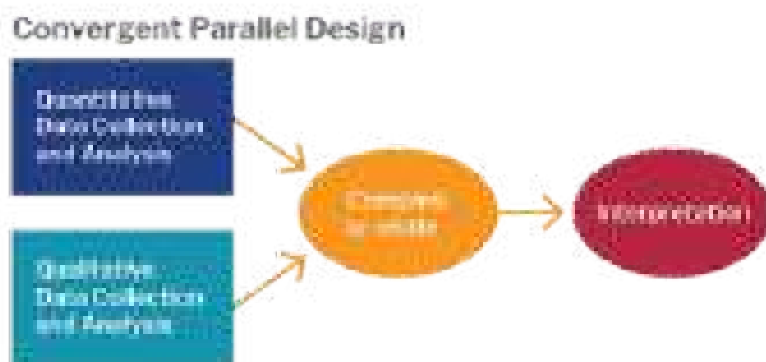
# RESEARCH DESIGN:

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For the present study, the approach chosen was **mixed method approach**, to avail the advantages of both methods. A survey was used to generate quantitative primary data on the situation of the ITI students and alumni. This will allow a broader view and scalable conclusions. Nevertheless, the survey could become detached from reality or ineffective if it was not supported by a previous engagement with the students via in-depth interviews, to obtain insights into their drivers and challenges. Thus, the questionnaire used in the survey was elaborated and refined to reach subtleties of the social impact.

The qualitative approach has been also helpful for generating an **actor's perspective** (current batch, passed-out batch, family members of the research participants, trainers, and management of the institute).

The mixed-methods avails a **convergent parallel design** to draw overall conclusions. In this procedure, the study weighs the methods equally, analysing the two components independently, and interpreting the results together (Creswell & Pablo-Clark, 2011).



The interaction happened with a diverse group of stakeholders to collect information on the key indicators to assess the impact of the project. The data received from both qualitative and quantitative approaches was **triangulated** to address to enhance the credibility of our findings (Carvalho & White, 1997)

# Assessment Framework

## 1. OECD DAC

At a project level, the OECD DAC was used as a framework to guide the evaluation. The OECD Network on Development Evaluation (EvalNet) has defined six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact, and sustainability – and two principles for their use. These criteria provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, program, project, or activity).



Source: [oecd.org/dac](http://oecd.org/dac)

# DATA COLLECTION

Sr. No.	Interviewees	Tool used	Sample
1	Truck drivers	In-person & Telephonic IDI (In-Depth Interview)	25
2	Doctors/Nurses	In-person In-depth interview	2
3	On-ground NGO	In-person In-depth interview	1

Table 1:Sampling matrix

## Data Analysis

Data was collected from various sources, including surveys, interviews, and existing literature, to capture diverse perspectives and insights. Following this, a rigorous data cleaning process was undertaken to rectify errors and inconsistencies, ensuring the integrity of the dataset. Following this, quantitative methods including univariate and bivariate analyses were utilized to measure the extent and importance of the social impacts identified. Concurrently, qualitative data underwent thematic analysis and content analysis to extract nuanced meanings and understandings from narratives and responses. The integration of these quantitative and qualitative findings provided a holistic perspective on the project's social impacts, capturing both the breadth and depth of its effects on stakeholders and communities. This blended approach facilitated a nuanced interpretation of the data, allowing for a more robust assessment of the project's social implications. Finally, the results are synthesized and communicated effectively to stakeholders through this report, using various forms of visualizations, informing decision-making processes and guiding future strategies for social development and sustainability.



# FINDINGS

# DEMOGRAPHY & SOCIO-ECONOMIC PROFILE

## GENERAL INFORMATION

The study focused on evaluating the influence of Cholamandalam's assistance in facilitating eye screenings for the truck driving community. To gauge this influence, the study conducted surveys and interviews with truck drivers, support staff, NGO coordinators, doctors, and nurses. A cohort of **25 truck drivers** partook in the study, sharing insights on the support they received and the consequential effects on their eye health and overall well-being.

Type of Participants	Truck drivers & allied workers	Doctors/Teachers	Sightsavers Co-ordinator
No. of participants	25	2	1

Table 2: Participants' division

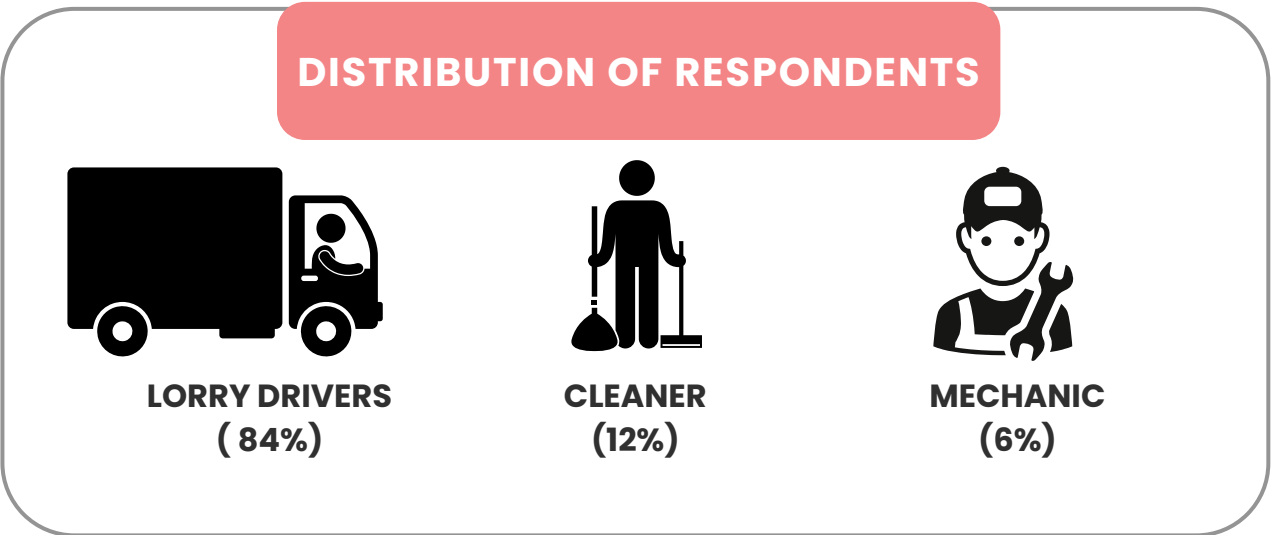


Figure 1: Distribution of respondents



# DEMOGRAPHY & SOCIO-ECONOMIC PROFILE

## AGE OF RESPONDENTS

The study revealed that the largest proportion of truck drivers, accounting for **44%, fell within the 40-50 age range**. Subsequently, **36% of participants were aged between 30 and 40**, with **20% of drivers belonging to the 50-60 age bracket**. The study found that 44% of truck drivers were aged 40-50, 36% were aged 30-40, and 20% were aged 50-60.

Individuals aged between 40 and 60 constitute a vulnerable demographic for whom eye screenings play a pivotal role in maintaining optimal eye health among adults. Notably, **64% of respondents within this age range underwent screenings facilitated by Sightsaver's program**, showcasing an effective outreach to the target beneficiaries. Moreover, for younger individuals, particularly drivers, who also participated in these screenings, it served as a proactive measure to prevent potential eye-related concerns in the future.

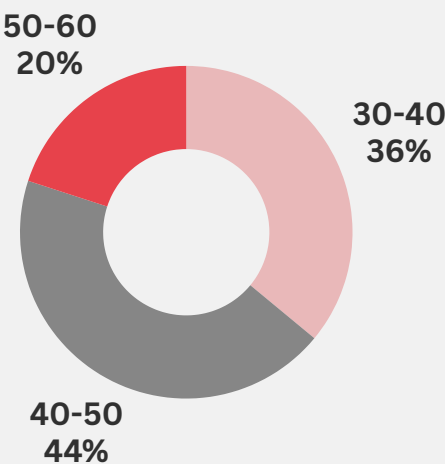
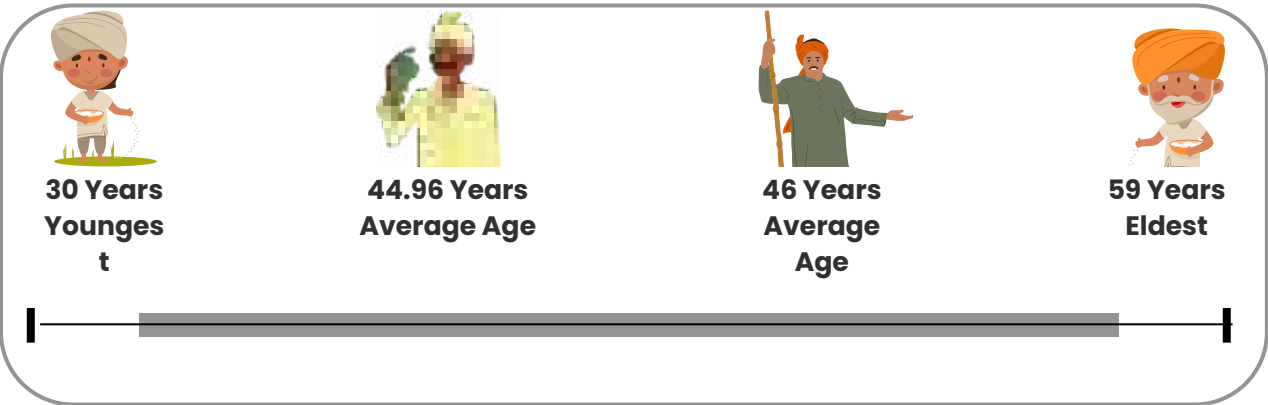


Figure 2: Age distribution chart



64% of truck drivers were aged 40 years and above

Figure 3: Age distribution

# DEMOGRAPHY & SOCIO-ECONOMIC PROFILE

## EDUCATION

Around **72% of the drivers who participated in the program had completed education up to the upper primary level**. Furthermore, **only 20% had attained education up to higher secondary**, with a solitary respondent having pursued college education. These statistics highlight the notably low educational attainment among truck drivers, hinting at a potential lack of awareness concerning the significance of eye screenings and the risks associated with road traffic accidents. The program demonstrated effectiveness in engaging and assisting the intended demographic, thereby offering valuable support to this group.

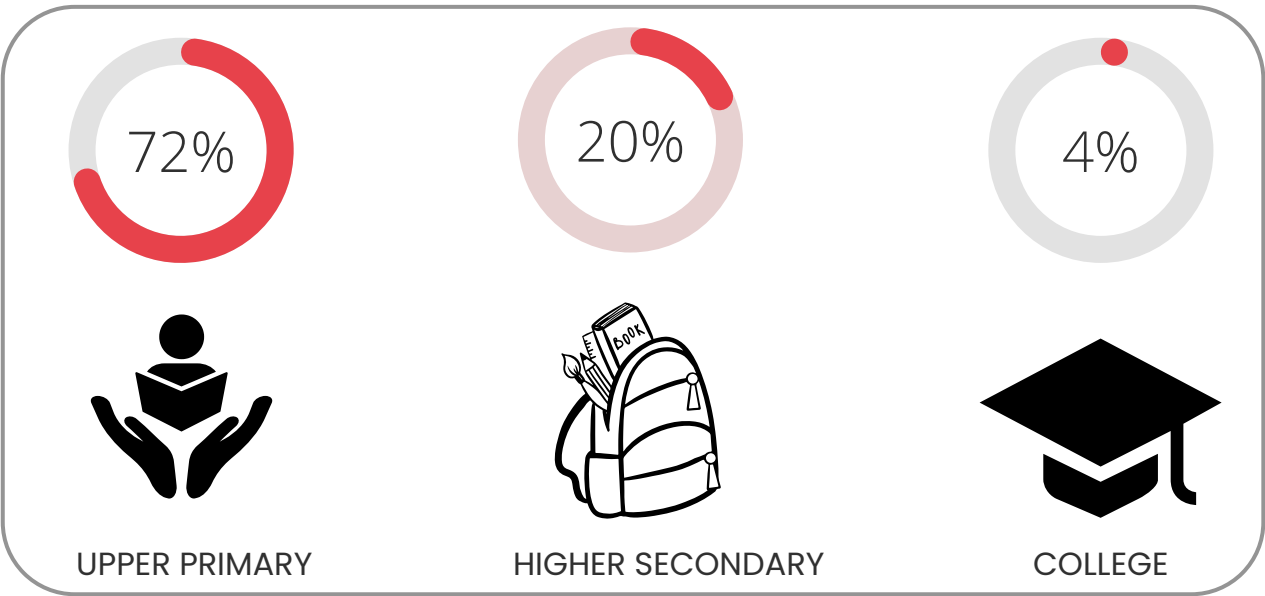


Figure 4: Education levels

“ I did not know the importance of eye-health before participating in the program. Many of my truck driver friends have similar issues.

-A truck driver ”



# DEMOGRAPHY & SOCIO-ECONOMIC PROFILE

## ANNUAL SALARY



A significant majority, comprising 64% of families, reported an annual income below ₹ 2 lakhs. Conversely, only 32% of families fell within the income bracket of ₹ 2 to ₹ 3 lakhs. . Individuals with lower incomes and limited educational opportunities often face challenges accessing adequate healthcare due to financial constraints, resulting in disparities in health outcomes.

The program aimed to mitigate these discrepancies by targeting the financial obstacles hindering healthcare access. Through collaborative efforts, the initiative sought to bridge these gaps, ensuring that individuals, irrespective of their financial status, had the opportunity to receive optimal eye care and improving overall health outcomes.



Figure 5: Income range

# HEALTH RELATED HISTORY

## HEALTH HISTORY OF FAMILY & SELF

**32% of the respondents experienced various health issues, including farsightedness, high blood pressure, arthritis, and diabetes.** Among these individuals, when questioned about eye-related conditions, it was noted that **44% reported family members suffering from myopia, cataracts, inflamed eyes, and other related ailments.**

A past history of a family member with eye-health ailments hints at the possibility of potential vision-related issues.

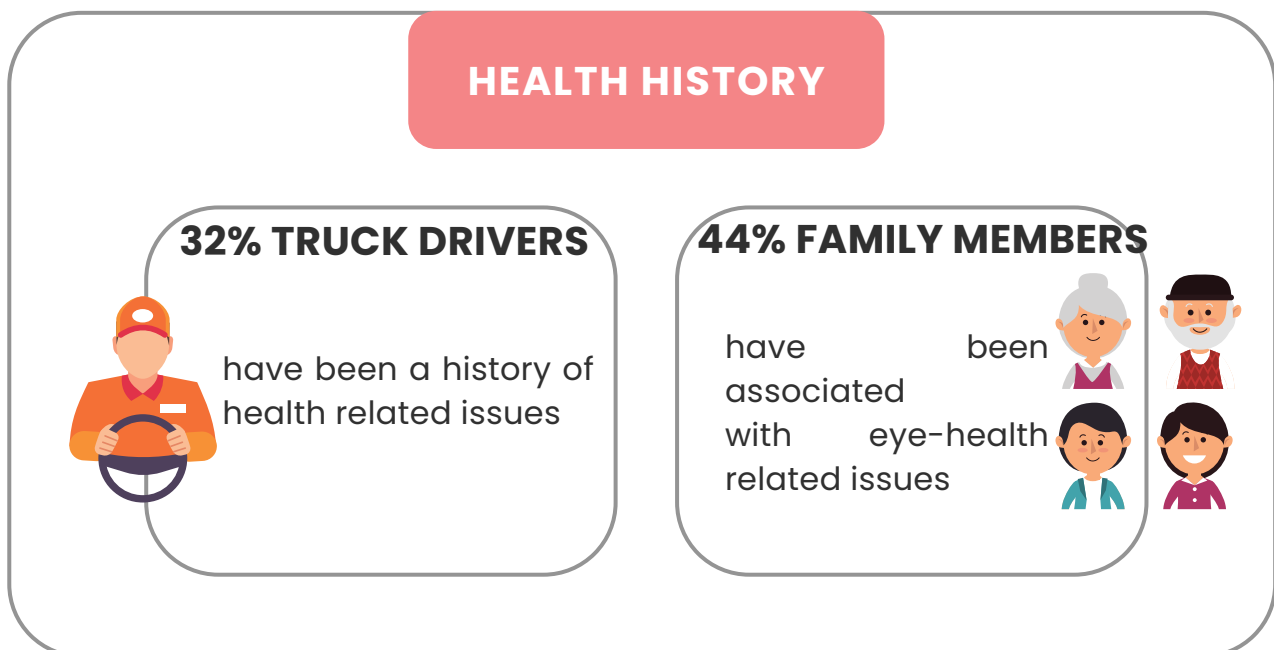


Figure 6: Health history

## INSURANCES

**80% of the truck drivers did not possess health insurance.** Among those who were insured, the majority relied on Star Health Insurance as their primary service provider, which reportedly includes coverage for eye checkups.

This lack of access further increased their vulnerabilities of not receiving proper access to eye-checkups, increasing chances of developing more long-term problems.

80%

# EFFECT OF PROFESSION ON EYE HEALTH

The total sample of truck drivers participating in the study revealed that **they operated their vehicles approximately 12 days per month.** Findings indicated that **they spent an average of 7.45 hours driving during the day and 7.28 hours driving at night.** This extended daily duration of around 14 hours likely had an adverse effect on their eyesight.

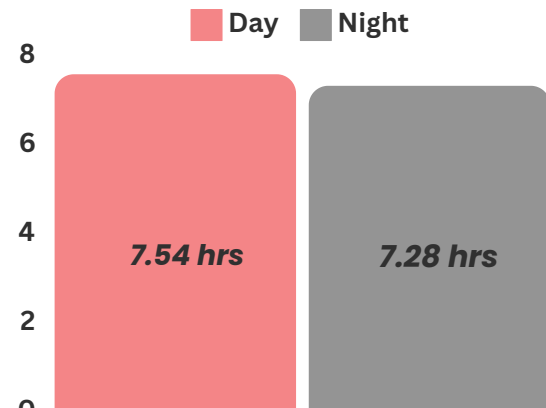


Figure 7: Average no. of hours spent driving



During their extensive travel hours, **a significant majority (65%) held the belief that such prolonged periods would not adversely affect their eyesight.** This perception underscores a potential lack of awareness regarding the strain that drivers may encounter during extended driving sessions.



Additionally, **only 3% of the drivers admitted that they ever witnessed or personally faced any road safety issues** due to vision problems/ poor eyesight. A similar percentage of the drivers reported that they never faced any penalties due to their vision. Usually, penalties or punishments involved if faced with any road accidents or road safety issues are disbarment of license and challans.

“ I did not know the importance of eye-health before participating in the program. Many of my truck driver friends have similar issues.

-A truck driver

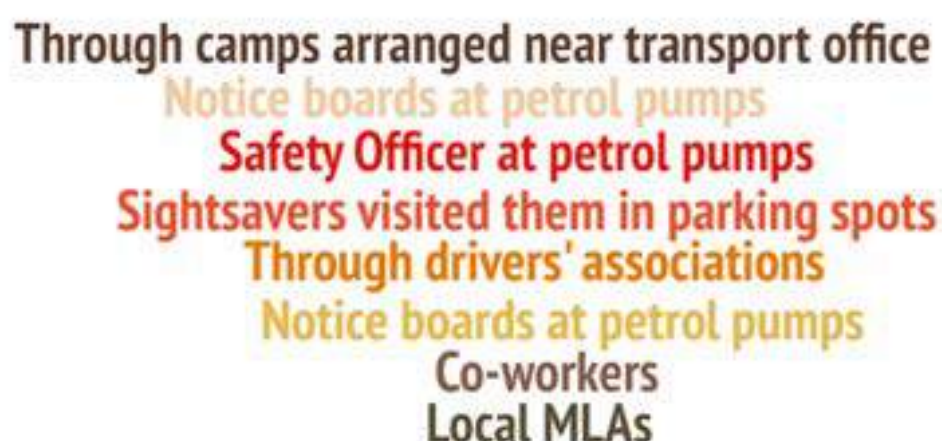


# SUPPORT & ACCESS TO PROGRAM

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## ENROLLMENT TO PROGRAM

**32% of the truck drivers reported that they had enrolled in a program aimed at prioritizing their eye health.** There were several reasons cited for their participation, including access to complimentary check-ups, referrals from friends, encouragement from supervisors, and concerns related to short-sightedness. These drivers learned about the program through various channels, such as:



A word cloud of enrollment channels. The words are arranged in a vertical stack, with varying colors and sizes. The colors include black, orange, red, and yellow. The sizes vary, with 'Through camps arranged near transport office' being the largest and 'Local MLAs' being the smallest.

Through camps arranged near transport office  
Notice boards at petrol pumps  
Safety Officer at petrol pumps  
Sightsavers visited them in parking spots  
Through drivers' associations  
Notice boards at petrol pumps  
Co-workers  
Local MLAs

Figure 8: Reference for enrollment to program

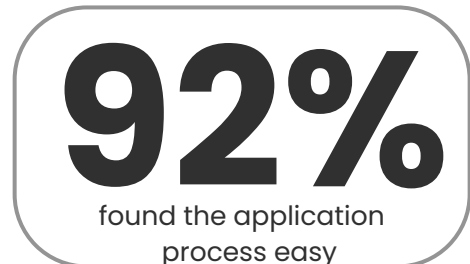
While certain lorry drivers independently learned about the program, others were informed by the Sightsavers team during the camps held near petrol pumps or through safety officers at gas stations. This support from the Sightsavers team facilitated in helping them enrol for the program and understanding the need for it.

# SUPPORT & ACCESS TO PROGRAM

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## APPLICATION

**92% of the truck drivers informed that they found the application process easy to go through.** The accessibility of the application process significantly facilitated increased drivers' participation in the program.



Simplifying the process enabled a greater number of truck drivers to enrol. By enhancing the ease of application and broadening its accessibility, a larger pool of applicants could engage with the program. Consequently, this not only expanded access for truck drivers to clinics and health camps but also promoted diversity among program participants.

Furthermore, there were a few essential documents required for the enrollment in the program. It was reported that a copy of these were to be attached while applying for it.

DRIVING LICENCE

AADHAR CARD

ENTRY PASS

“

The application form was easy to understand. The sightsavers co-ordinators helped me with some doubts I had with a few sections of it.

-A truck driver

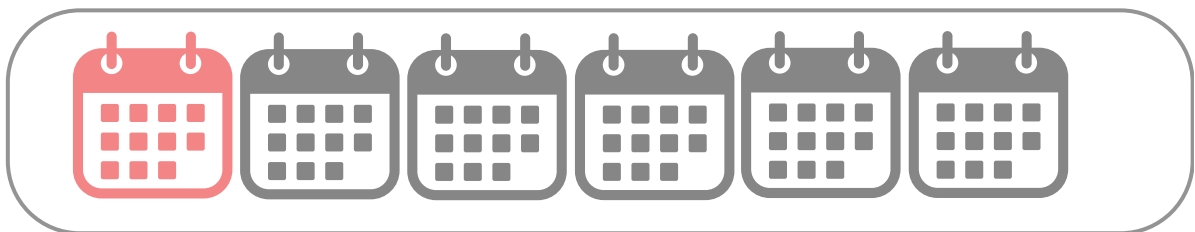
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# PERSONAL EXPERIENCE OF PROGRAM

## Frequency of camps

A majority, **40% of the truck drivers reported that the eye-camps are conducted once in 6 months.**

The regularity of these camps provided numerous opportunities for individuals to attend and have their eyes examined. This demonstrates Sightsavers' consistent efforts in conducting these camps, providing truck drivers with multiple opportunities for check-ups.



## Points of checkups

Of these, a total of **56% said that they underwent the tests in the NGO run camps** whereas **36% reported that they went straight to the dedicated vision centres.**

Given the itinerant nature of the truck-driving community, offering eye check-up facilities at various locations provides them with increased flexibility and accessibility for ocular examinations. This exemplifies Sightsavers' user-centric approach towards organizing these health check-up camps, underscoring the program's overall efficacy.

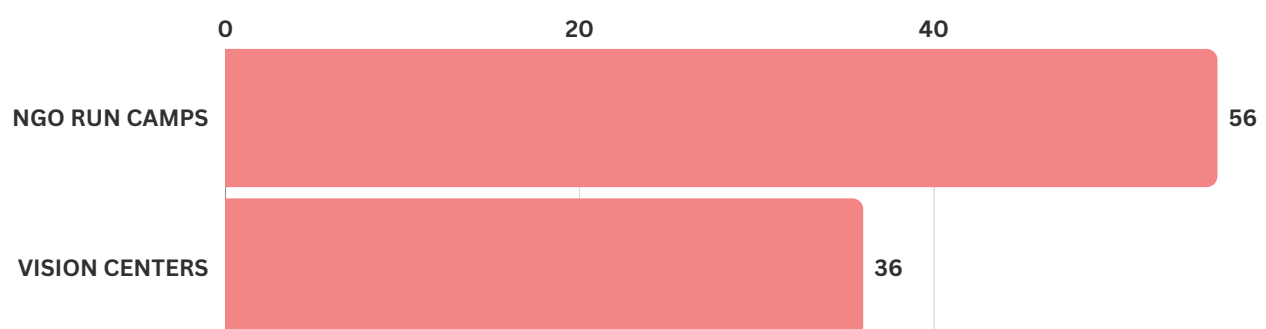


Figure 9: Percentage of drivers accessing camps & centres

# PERSONAL EXPERIENCE OF PROGRAM

## Accessability of health camps

When inquired about the proximity of these camps to their respective locations, **a significant majority of 56% expressed that the camps were conveniently situated near petrol pumps or transport offices**, indicating their proximity. However, there were exceptions where individuals reported having to cover considerable distances, up to 20 kilometres, to access the camps. This variance underscores the program's successful planning and execution of the practical and pragmatic challenges of the program.

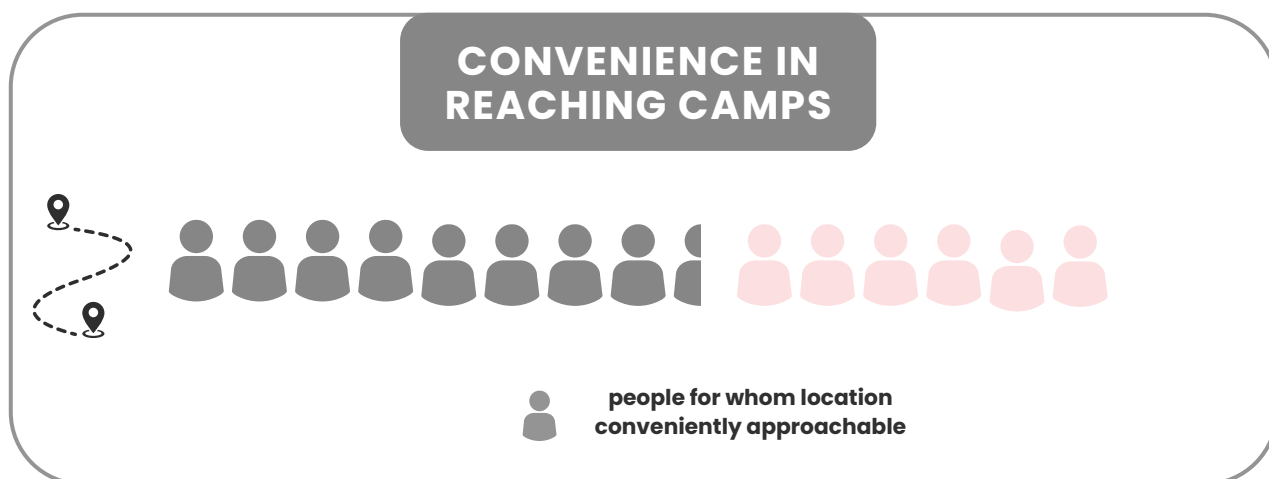


Figure 10: Convenience in reaching camps

## References for more applications

Nearly **50% of the participants attended these camps alongside a colleague or fellow driver**, who often serve as key influencers for future attendees/applicants. A significant **68% express a preference for returning to the same camp or centre**, likely driven by a sense of trust in the facility, familiarity with the surroundings, and rapport with healthcare personnel. However, occasional changes in locations occur based on travel routes and times of the month.



# PERSONAL EXPERIENCE OF PROGRAM

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## Checkup procedure

The checkup process involved inputting patient details like name, address, enrollment ID, blood pressure, ECG, and diabetes check, followed by a comprehensive eye examination utilizing an autorefractor. Furthermore, **92% of the respondents reported that no fees were charged after testing**, with **40% indicating that the doctor attended to patients directly**. On average, a checkup requires approximately 26 minutes to conclude.

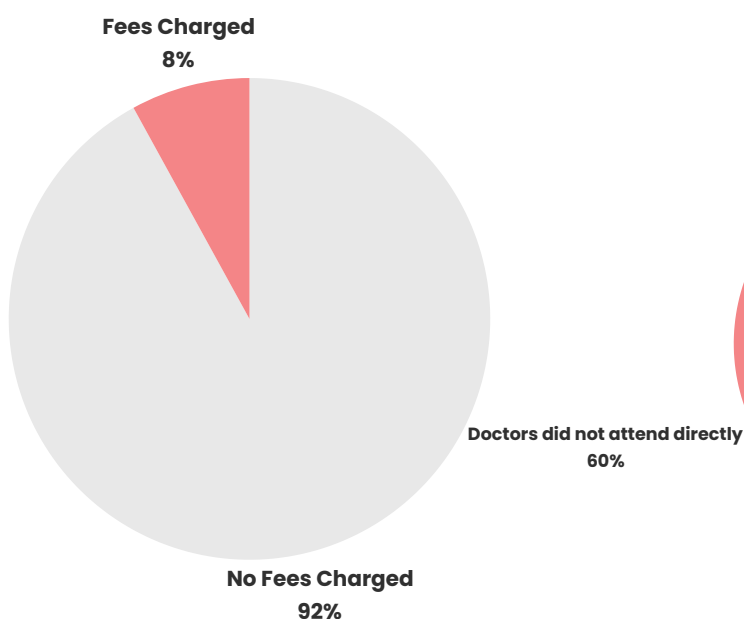


Figure 11: Charging of fees

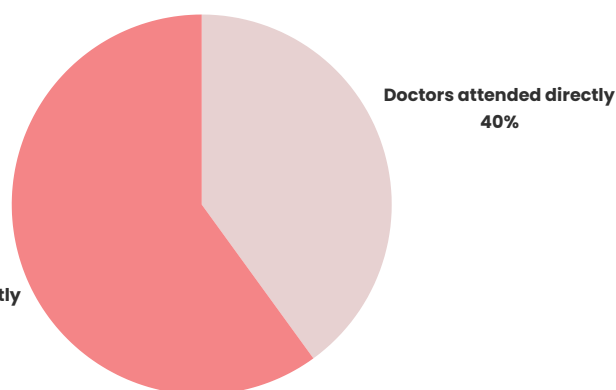


Figure 12: Attention received by doctors

“I felt that the clinic was very easy to navigate. The nurses helped in the checkup and provided me the right guidance. I was initially hesitant to go since I did not want to spend much on it.”

-A truck driver

# PERSONAL EXPERIENCE OF PROGRAM

## Facilities and health experts at camps

The majority of respondents reported encountering three doctors or healthcare professionals at the sites where they received check-ups. **100% of participants rated the campsites as being in excellent operational order**, with **92% specifically highlighting the impeccable condition of the equipment**. This reflects the high standard maintained at these medical camps, ensuring thorough examinations of eye-related conditions. The presence of a substantial number of doctors at the centre indicates the attentive care provided to truck drivers upon their arrival at the camps.

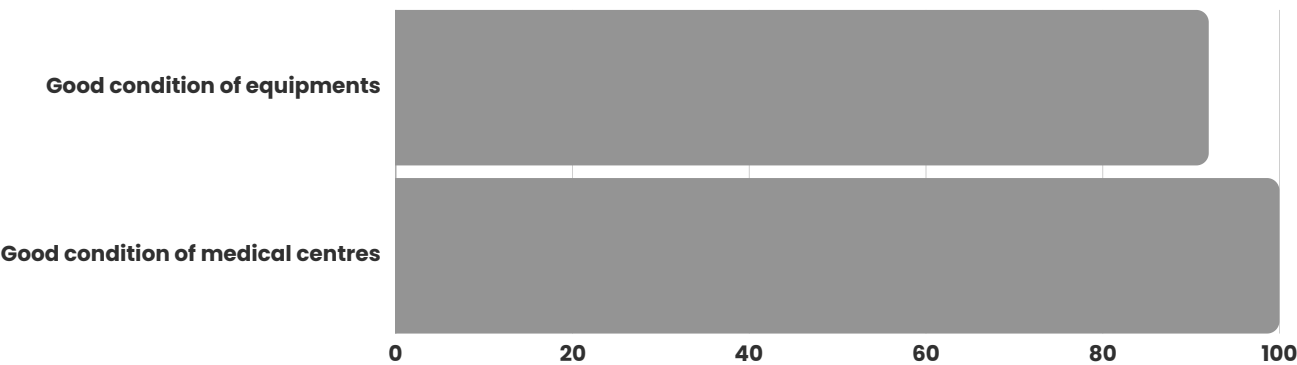


Figure 13: Percentages of drivers reporting conditions of equipments and centres

## Diagnosis

A significant majority of drivers, approximately **80%, received a diagnosis during these check-ups necessitating the use of corrective eyewear for myopia, hypermetropia, or both**. A small number were advised to consider surgical intervention due to emerging cataract symptoms.

Additionally, medication was prescribed, and awareness sessions were conducted for the trucker community. Regular follow-up treatments were scheduled on a weekly or quarterly basis for individuals requiring ongoing care.

These examinations enabled truck drivers to identify various eye-related conditions effectively, facilitating the assessment and management of these issues.

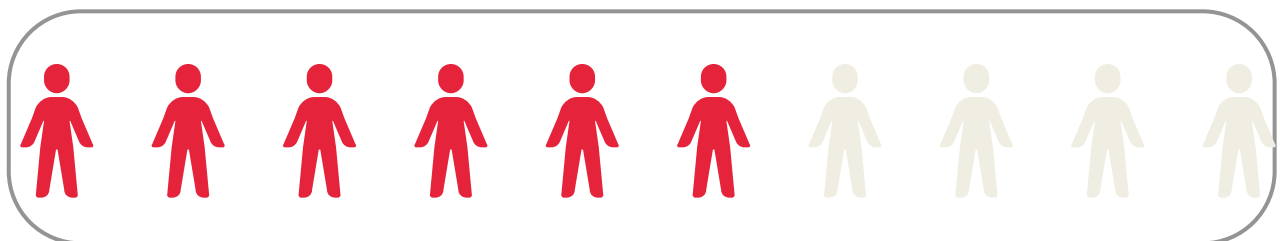
# IMPACT OF PROGRAM

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## Embracing regular use of spectacles

**60% of individuals who were prescribed spectacles successfully integrated them into their daily routines.** Among those who opted not to use them, the reasons cited included discomfort while wearing the spectacles or concerns regarding the accuracy of the prescription or lens power. Conversations with these individuals revealed their understanding of the specific types of spectacles prescribed, such as Corrective spectacles, R2C spectacles, and Single Vision Power (for near and far distances).

This data indicates a considerable portion of drivers have embraced the regular use of their prescribed glasses. It underscores the effectiveness of the program in offering appropriate guidance and assistance to beneficiaries in need of such support.



6 out of 10 truck drivers started using the prescribed glasses

“

Since I started using the eye-glasses, I have feeling much more ease in driving at night.

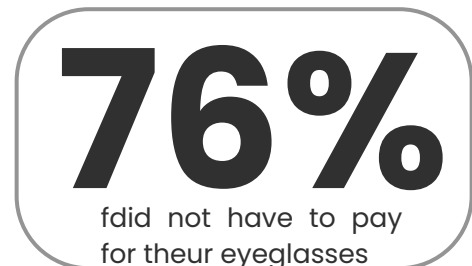
-A truck driver

”

# IMPACT OF PROGRAM

## Financial assistance

**76 % percent of individuals indicated that they did not need to pay for the eyeglasses provided.** They were offered a choice between complimentary spectacle frames and higher-end ones priced between Rs. 750-900. This initiative alleviated the financial strain associated with expensive eye examinations, which are often unaffordable for many drivers. The program effectively supported these drivers by indirectly reducing the financial burden of costly check-ups.



## Direct effect on their vision

A notable **88% of individuals acknowledged that the eye examination positively influenced their vision**, with **76% expressing a heightened sense of focus while driving**. This underscores the tangible benefits of the program's intervention in visual acuity, potentially mitigating the risk of future accidents stemming from impaired eyesight.

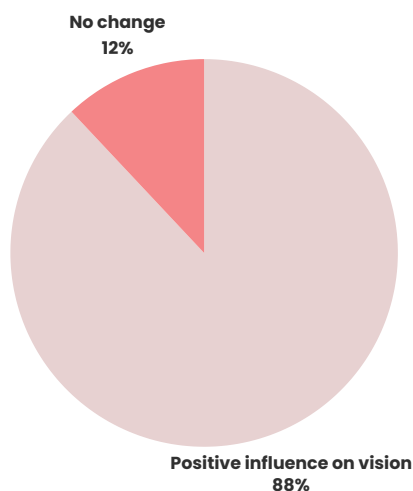


Figure 14: Influence on vision

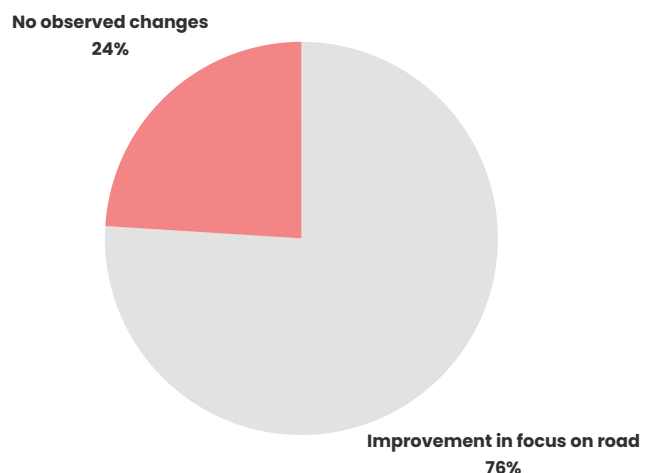
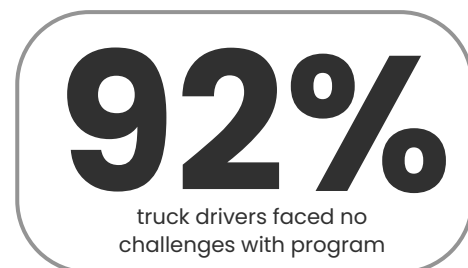


Figure 15: Improvement in focus on road

# SATISFACTION WITH PROGRAM

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Approximately **92% of truck drivers who participated in the eye checkups expressed no challenges in engaging with the camps** and expressed significant appreciation for the program. They noted feeling more knowledgeable about eye health and its significance as a result of their involvement.



Furthermore, all participants showed a willingness to endorse the program to their peers and friends, believing it would be advantageous to other truck drivers. This resounding endorsement underscores the program's effectiveness, value, and benefit to the drivers, effectively addressing their needs and challenges. This positive reception also suggests a potential increase in enrollment rates for vision check-ups among those requiring support from Choramandalam in the future.

They felt that there are several unique selling points that add value to the program and sets it apart from the others

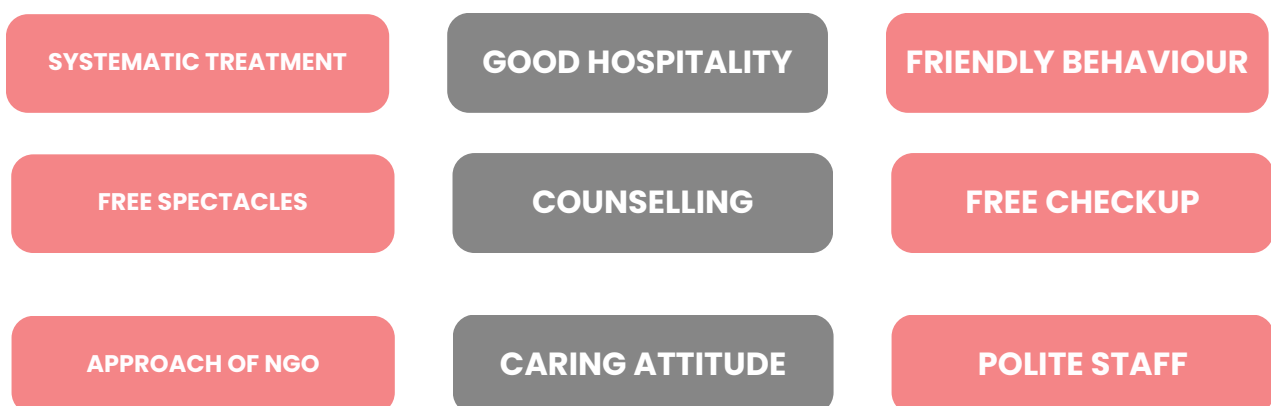


Figure 16: Satisfaction with program

# RECOMMENDATIONS

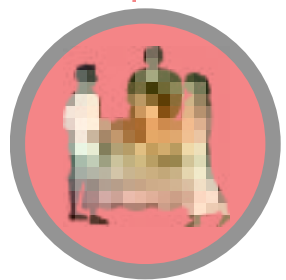
Most truck drivers preferred such camps to be organized near or on the routes of their travel so as to have the hospital visits more conveniently even while they work.

Truck drivers often find themselves spending long hours on the road, away from the comforts of home. Having medical camps organized near or on their travel routes can be incredibly beneficial. It provides them with easy access to healthcare services without disrupting their work schedules. These camps not only ensure the drivers' well-being but also promote a sense of community and support among those who share the same profession.



Many of the drivers who did not have insurance policies could be provided more awareness on health insurances through the camps.

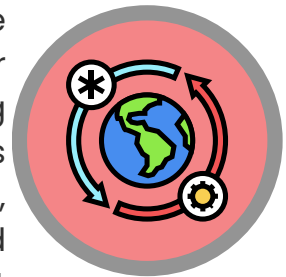
These camps could offer informational sessions and workshops to educate drivers on the importance of health insurance and how to obtain affordable coverage. By partnering with insurance providers and healthcare professionals, these events could help bridge the knowledge gap and empower individuals to make informed decisions about their health and financial well-being. Additionally, offering assistance with navigating the insurance landscape and accessing resources could ensure that more drivers have the protection and support they need in case of unforeseen medical expenses. Ultimately, raising awareness and promoting access to health insurance could contribute to a healthier and more secure community for all.



# RECOMMENDATIONS

A better mechanism of Monitoring & Evaluation be established wrt. connecting with the truck drivers, as they are a moving population and are often difficult to meet/ have interviews with.

One innovative approach to enhance Monitoring & Evaluation with truck drivers is to implement a mobile application specifically designed to track their movements and collect data in real-time. By leveraging GPS technology, this app could provide valuable insights into their routes, stops, and working hours. Additionally, incorporating features such as surveys or check-ins could allow for quick and efficient feedback collection without the need for face-to-face interviews. This method not only ensures continuous monitoring but also facilitates seamless communication with this dynamic group, ultimately leading to a more effective evaluation process.





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# AMM FOUNDATION

## Impact Assessment Report

Funding Year: FY2022-23



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Cholamandalam Investment and Finance Company Limited (Chola), incorporated in 1978 as a socially responsible company, continues to responsibly implement projects towards nation-building and creating a better life for the citizens of India. The CSR projects are conducted as a blended activity along with the business extending the projects to the neglected and needy segments of society.

Chola initiated projects covering various sectors of sustainable socio-economic development and outlays funds for various activities for the implementation of the projects as part of their CSR policy. The amount spent by Chola CSR towards the consideration of two CSR projects amounts to ₹ 15.13 Cr. This report summarizes the five projects under the thematic areas of Health, Education, Agriculture, Sports in nut-shell.

## **Promoting Quality Health Care and Education to Marginalized Section**

Outlay: Rs. 8.93 Cr | SDGs Aligned: 3, 7, 4, 9, 10 and 11

**AMM Murugappa Chettiar Centenary Full Fee Scholarship** has had a profound impact, reaching economically disadvantaged families (46% with both parents unemployed) and supporting higher education achievements (84% graduated, 16% post-graduated). Beneficiaries expressed highly satisfactory ratings (92%). **Murugappa Youth Football Academy program** at MFYA has shown remarkable impact across various dimensions. Participants' sustained engagement, personalized orientation, training for football & life skills lead to a holistic training experience.

**The school social work** intervention program has garnered widespread praise for its highly beneficial impact, addressing students' physical, psychological, and social needs effectively. Individual and group counselling, along with mentorship & peer group activities, have proven effective in handling school-related stress and adolescent issues, showcasing their positive influence on students.

**Murugappa Science Center** with its expanded outreach is accommodating over 300 students primarily from economically weaker sections. The Center's enhanced facilities and hands-on learning approach have improved awareness & retention, empowering students with media and digital knowledge, and fostering a scientific culture.

The project's installation of **solar panels at Murugappa Polytechnic College and Sir Ivan Stedeford Hospital, Chennai** has effectively reduced (approx 50%) electricity costs and has also reduced reliance on the central grid, improving electricity stability, and operational efficiency. The project also supports service and maintenance costs, and the college has also integrated solar panel technology into the curriculum. **The Mobile Health Van** project has brought essential healthcare services to remote and marginalized communities. Positive health outcomes, timely diagnosis and reduced expenses, highlight its effectiveness and recurrent utilization. By eliminating barriers like distance and transportation, the project ensures timely and cost-effective healthcare delivery, particularly benefiting women.

#### **Health Care Services for Rural Communities and Hydrogeological Study to Map Water Bodies in and around Oonaiyur**

Outlay: Rs. 6.32 Cr | SDGs Aligned: 3 and 11

The addition of advanced diagnostic facilities in the **AMM Pallathur Hospital** has improved in-patient and out-patient care and increased hospital capacity. Patients have reported significant health improvements, indicating satisfaction with services and the provision of free treatments.

**AMM Arunachalam Hospital's** patient-centric approach and offering of advanced treatments across various specialities at nominal consultation fees and reasonable service prices ensures accessibility for underserved populations. Patient experiences are overwhelmingly positive, with high satisfaction. Overall, the hospital's commitment has led to a positive impact on the community's well-being.

**Project Nanneer** has brought about significant positive changes in the surrounding ecosystem viz, agricultural productivity, enhancing biodiversity, improving drinking water resources & livestock rearing and more. Overall, the project's activities impact is evident and showcasing its success in restoring and revitalizing the lake ecosystem.



## **ABOUT CHOLAMANDALAM INVESTMENTS AND FINANCE COMPANY LIMITED**

Cholamandalam Investment and Finance Company Limited (Chola), established in 1978 as the financial services division of the Murugappa Group, began its operations primarily as an equipment financing entity. Over time, it has evolved into a comprehensive financial services provider, offering a wide range of products including vehicle finance, home loans, loan against property, SME loans, secured business personal loans (SBPL), consumer & small enterprises loans (CSEL), and various other financial services to its customers. Currently, Chola operates through 1191 branches spread across India, managing assets worth over INR 112,782 Crores.

Chola's mission is to facilitate its customers' journey towards a better quality of life. With a growing customer base of over 25 lakh individuals nationwide, the company has maintained a steadfast commitment to its core values since its inception. Central to these values is an unwavering dedication to ethics and a sense of responsibility towards all stakeholders, including customers, shareholders, employees, and society at large.

In line with this ethos, AMM Foundation, an independent charitable trust renowned for its community-centric initiatives in Education, Healthcare, and Special Projects, operates as the philanthropic arm of the Murugappa Group, an esteemed Indian business conglomerate.

Cholamandalam Investment and Finance Company Limited (Chola) recognizes its obligation to contribute positively to society and the environment, thereby fostering a brighter future for the nation and facilitating an enhanced quality of life. Its corporate social responsibility (CSR) initiatives are integrated into its business activities and extend across various regions of India. The key focus areas of its CSR projects include:



# WHY IMPACT ASSESSMENT?

## 1

### Relevance

- **Understanding Context:** Impact Assessment (IA) helps in understanding the social context within which a project or initiative operates. It considers factors such as demographics, culture, and community dynamics, which are essential for effective planning and implementation.
- **Identifying Stakeholders:** It identifies stakeholders who might be affected by the project, ensuring their voices are heard and their needs are considered. This fosters inclusivity and prevents overlooking marginalized or vulnerable groups.
- **Mitigating Risks:** By analyzing potential social risks and conflicts, IA enables proactive measures to mitigate them, ensuring the project's relevance and acceptance within the community.

## 2

### Value creation

- **Maximizing Positive Impact:** IA helps in identifying opportunities to maximize positive impacts. By assessing the potential benefits the project can bring to the community, it enables value creation beyond economic gains, such as improved livelihoods, enhanced well-being, and strengthened social cohesion.
- **Resource Optimization:** It facilitates the efficient allocation of resources by prioritizing interventions that yield the highest social returns. This ensures that investments generate sustainable benefits for both the project and the community.

## 3

### Communication

**Transparency and Trust:** IA fosters transparency by engaging stakeholders throughout the project lifecycle. This builds trust and credibility, as stakeholders are kept informed about assessment findings and involved in decision-making processes.

## 4

### Improvement

**Learning and Adaptation:** IA facilitates continuous improvement by enabling organizations to learn from past experiences and feedback loops. Monitoring impacts over time allows for adaptation of strategies to address emerging challenges and enhance effectiveness.



# OVERALL OBJECTIVES

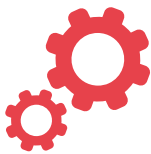
To carry out the Social Impact Assessment (SIA), these specific objectives were chosen for Chola's CSR project in a scientific manner that ensures the validity and reliability of the results.



**To consider the extent to which the project objectives and strategies are suited to the needs of the targeted KPIs and to the CSR plan (Relevance)**



**To evaluate the outcome indicators in terms of strategic and immediate outcome as per CSR objectives set while initiating the projects (Effectiveness)**



**To measure the effectiveness of project support structures and evaluate the stakeholders' engagement and experience of the primary stakeholders with the various stakeholders providing services. (Effectiveness)**



**To consider the extent to which the strategies used are suited to reach the desired outcomes and the measure in which these outcomes are suited to local needs. (Adequacy)**



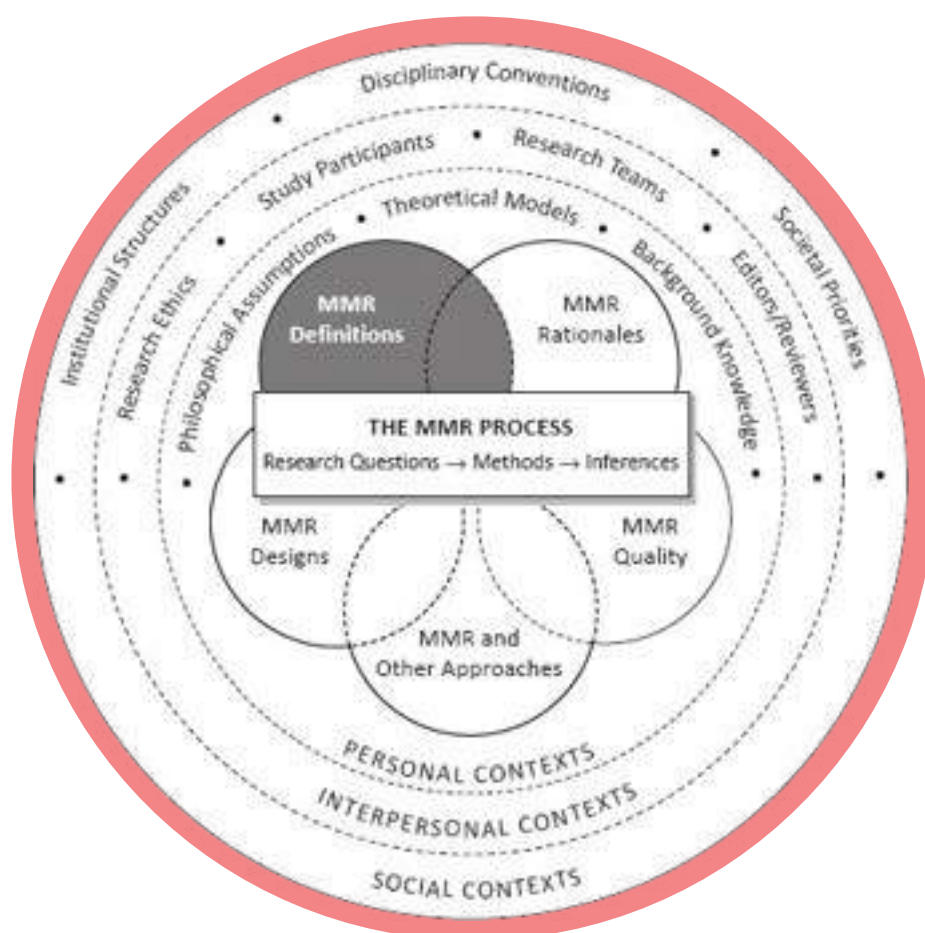
**To understand the impact of the projects on the stakeholders as mentioned in terms of improvement in well being and quality of life. (Impact)**



# RESEARCH DESIGN

This study employed a Mixed-Method approach (MMR) and a cross-sectional research design. The choice of this approach was contingent on the research objectives and the nature of the knowledge sought (Bryman, 2012).

Data collection in the field offered an insider's perspective, enabling a deep understanding of project implementation and the experiences of the beneficiaries. The research design employed a convergent parallel design, allowing for comprehensive conclusions. Qualitative and quantitative data were separately analyzed and then integrated to draw inferences. Triangulation was employed to validate the data and enhance its credibility.



The interaction happened with a diverse group of stakeholders to collect information on the key indicators to assess the impact of the project. The data received from both qualitative and quantitative approaches was **triangulated** to enhance the credibility of our findings (Carvalho & White, 1997; Clark & Ivankova, 2016)

## METHODOLOGY

Our research employed a mixed methodology, combining both qualitative and quantitative approaches to provide a comprehensive understanding of the subject under investigation. The qualitative aspect involved in-depth interviews and focus group discussions to gather nuanced insights, opinions, and experiences from participants. These qualitative data helped us explore the depth and context of the phenomenon being studied.

On the quantitative front, structured surveys were conducted to collect numerical data that allowed for statistical analysis. This approach provided us with quantifiable patterns, trends, and correlations within the data, enhancing the reliability and generalizability of our findings. Qualitative data provided rich narratives, while quantitative data offered statistical rigour and broader trends.

Sr. No.	Name of the Project	Research Design	Sample Size	Field visit
1	AMM Murugappa Chettiar centenary full fee scholarship	Semi Structured telephonic Interview	15 IDIs	No
2	Murugappa Youth Football Academy	Semi-structured interview and FGD	2 KIIs & 1 FGD	Yes
3	School social work	Semi-structured interview	5 KIIs & 1 IDI	Yes
4	Murugappa Science Centre renovation	Semi-structured interview and Participant Observation	1 KII	Yes
5	Solar Panel	Semi-structured interview	4 KII	Yes
6	Mobile Health Van	Survey and Semi structured Interviews	Survey-120+ 9 IDIs	Yes
7	AMM hospital-Pallathur	Semi-structured interview and Participant Observation	4 KIIs	Yes
8	AMM Arunachalam Hospital	Survey and Semi structured Interviews	Survey-10 & 1 KII	Yes
9	Project Nanneer	Semi-structured interview	1 FGD & 3 KIIs	Yes

## DATA ANALYSIS

Data were collected from various sources, including surveys, interviews, and existing literature, to capture diverse perspectives and insights. Following this, a rigorous data cleaning process was undertaken to rectify errors and inconsistencies, ensuring the integrity of the dataset. Following this, quantitative methods including univariate and bivariate analyses were utilized to measure the extent and importance of the social impacts identified. Concurrently, qualitative data underwent thematic analysis and content analysis to extract nuanced meanings and understandings from narratives and responses. The integration of these quantitative and qualitative findings provided a holistic perspective on the project's social impacts, capturing both the breadth and depth of its effects on stakeholders and communities. This blended approach facilitated a nuanced interpretation of the data, allowing for a more robust assessment of the project's social implications. Finally, the results are synthesized and communicated effectively to stakeholders through this report, using various forms of visualizations, informing decision-making processes and guiding future strategies for social development and sustainability.

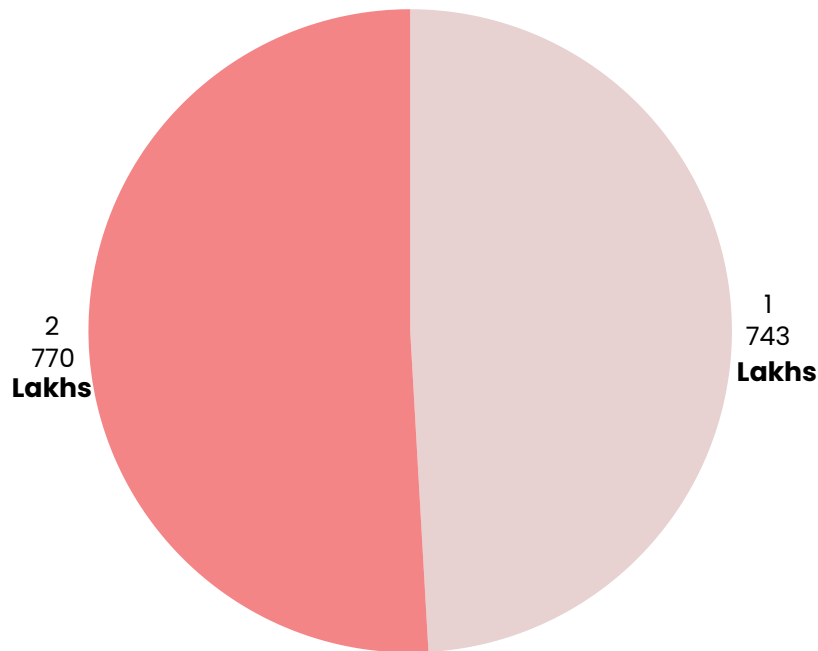
### **ETHICS ADHERED**

Prior to data collection, informed consent was obtained, and measures were taken to ensure confidentiality and anonymity. Cultural sensitivity was prioritized, minimizing harm and fostering trust among diverse communities. Equity and inclusion were central, with efforts to amplify marginalized voices. Transparency, accountability, and professional integrity were maintained throughout, aligning with ethical standards. These considerations were crucial in upholding participants' dignity and rights, ensuring a responsible assessment process.

# OVERVIEW OF CSR

## CSR Budget Allocation for the below Individual Projects is in INR Lakhs

- 1 Promoting Quality Health Care and Education to Marginalized Section
- 2 Health Care Services for Rural Community and Hydrogeological Study to Map Water Bodies in and around Oonaiyur



## SDGs Alignment

Promoting Quality Health Care and Education to Marginalized Section



18,204 Patients, MMU Sarigram

3 Hospitals and a Football Academy

1 Polytechnic College and Students



Health Care Services for Rural Community and Hydrogeological Study to Map Water Bodies in and around Oonaiyur



2 Hospitals

1 Science Center

Water Bodies

# **PROMOTING QUALITY HEALTH CARE AND EDUCATION TO MARGINALIZED SECTION**

- **AMM MURUGAPPA CHETTIAR CENTENARY FULL FEE SCHOLARSHIP**
- **MURUGAPPA YOUTH FOOTBALL ACADEMY**
- **SCHOOL SOCIAL WORK**
- **MURUGAPPA SCIENCE CENTRE RENOVATION**
- **SOLAR PANEL**
- **MOBILE HEALTH VAN**

# AMM MURUGAPPA CHETTIAR CENTENARY FULL FEE SCHOLARSHIP

## INTRODUCTION

Education is one of the cornerstones for the personal and professional growth of individuals and the equitable development of society. As the world's largest democracy and an incoming global economic powerhouse, education holds the key to India's growth story. In the Indian context, college education acts as a powerful catalyst for social mobility and unleashing the full potential of individuals. Despite this transformative power, many students are unable to access college education due to financial constraints. The scarcity of resources and economic hardships often prevent meritorious individuals from socio-economically disadvantaged backgrounds from realizing their educational dreams (Agarwal, 2007).

Thus, college scholarships are required for socio-economically disadvantaged students. Studies have proved that reducing financial burdens enables academic pursuits and fostering societal mobility and inclusivity.

In this context, the AMM Murugappa Scholarship program is a good example of philanthropic efforts aimed at empowering students from socio-economically disadvantaged backgrounds. Recognizing the importance of education, the AMM Foundation launched the AMM Murugappa Scholarship program in 2013 to support meritorious students in pursuing professional and arts & science courses in government and government-aided colleges. This report will provide an impact assessment of this program focusing on its efficacy, impact, and contributions to the educational landscape.

## About the Scholarship

The AMM Murugappa Scholarship is a full-fee scholarship that supports students throughout the duration of their courses. The scholarship is administered through educational institutions, which are responsible for selecting highly deserving candidates. Since its inception, the program has steadily expanded its reach, with approximately 263 students benefiting from it initially, and an addition of 40 to 45 scholars each subsequent year. As of the current year, the scholarship program has been operational for over a decade, reflecting its sustained commitment to supporting students from underprivileged backgrounds.



## OBJECTIVES

- 1.To understand the change in the academic performance after receiving the scholarships
- 2.To understand the perceived impact of the scholarships on the overall lives of the recipients
- 3.To recognise the areas that could be improved to make the program better

## RATIONALE OF THE STUDY

This study seeks to evaluate the impact of AMM scholarship on the academic and professional development of the recipients along with its impact on bringing about positive change in the larger society.

By analyzing the demographic profile of scholarship recipients, such as their age distribution, caste composition, and family economic status, this study seeks to understand the targeted outreach and inclusivity of the program.







Furthermore, by delving into different aspects of scholarship, particularly regarding satisfaction levels, ease of access, and degree completion rates, the study aims to offer insights into the tangible outcomes and transformative potential of the scholarship in empowering students to overcome socio-economic hurdles and realize their academic and career aspirations.

Moreover, this study aims to highlight the broader societal implications of scholarship programs like the AMM Murugappa Scholarship in fostering equitable access to education and promoting social mobility. By documenting the success stories and testimonies of scholarship beneficiaries, the study not only serves as a testament to the program's efficacy but also advocates for the expansion and enhancement of similar initiatives across the educational landscape,

## RESEARCH DESIGN

This study adopts telephonic interviews and observation as primary data collection methods. Telephonic interviews, lasting 15–20 minutes, enable scholarship recipients to share feedback, discuss challenges, and express the scholarship's impact on their academic and career paths.

			
<b>Assessment Locations</b>	<b>Total Sample Size</b>	<b>Beneficiary Surveyed</b>	<b>Other Stakeholders</b>
Chennai, Madurai	13	Students	AMM Foundation

A sample size of 13 beneficiaries, including both genders and diverse academic disciplines, was carefully selected to represent the overall recipients. Through purposive sampling, participants were chosen to offer diverse insights into the scholarship program's impact across demographic groups and disciplines.

## ETHICAL CONSIDERATIONS

Adequate steps were taken throughout the study to ensure the standard ethical considerations and protect the participants' privacy. Firstly, the participants were informed about the purpose of the study, their rights as participants, and the confidentiality measures in place to protect their personal data. Explicit informed consent was obtained at the beginning of the telephone interviews.



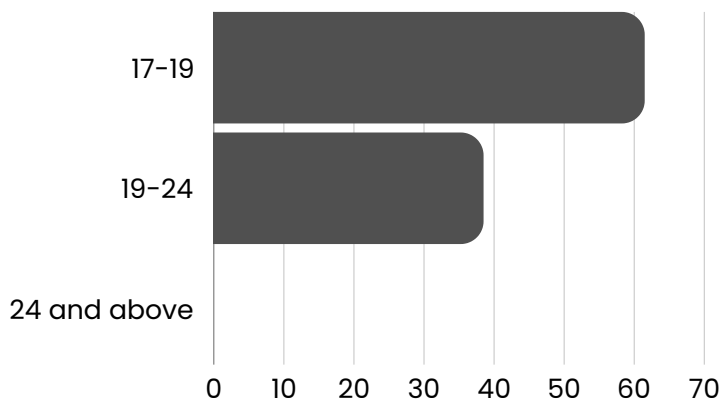
The responses from the participants were anonymized and aggregated to protect their identities ensuring privacy and trust in the study. Furthermore, the Researchers adhered to strict protocols for handling and storing data, ensuring that only authorized personnel have access to participant information.

## FINDINGS

In this section, we present the findings of this impact assessment study evaluating the efficacy, effectiveness and impact of AMM full scholarship. The findings provide a thorough examination of the demographic profile of the recipients, impact of scholarship on personal and professional development and its influence over the larger society.

### DEMOGRAPHIC PROFILE OF THE RECIPIENTS

**Age:** The majority of scholarship recipients (61.5%) fall within the age bracket of 18-20 years, while 38.5% belong to the 19-24 age group. This distribution suggests that the scholarship primarily targets young individuals at a crucial stage of their academic and professional development.

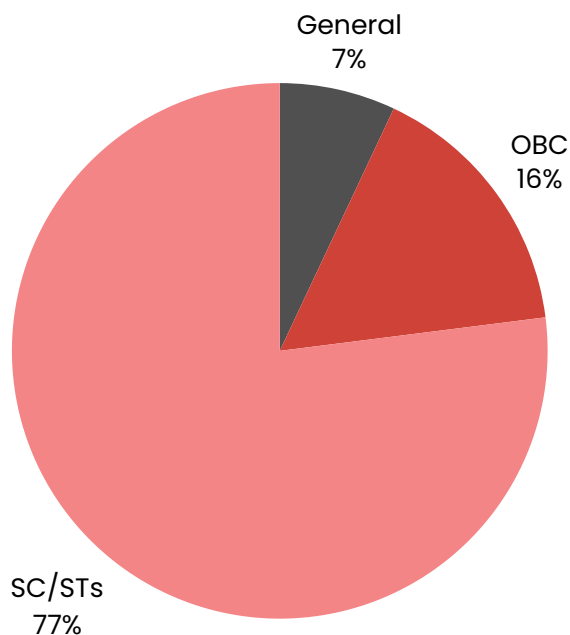


Age range of recipients

**Caste Composition:** A significant proportion of scholarship recipients belong to Other Backward Classes (OBC) (76%), followed by Scheduled Castes and tribes (SC/STs) (17%). This indicates that the benefits of the program are reaching the marginalized communities who have limited access to financial resources and social capital. The caste composition is also a testament to one of the primary objectives of this scholarship to the educational needs of socially backward communities.

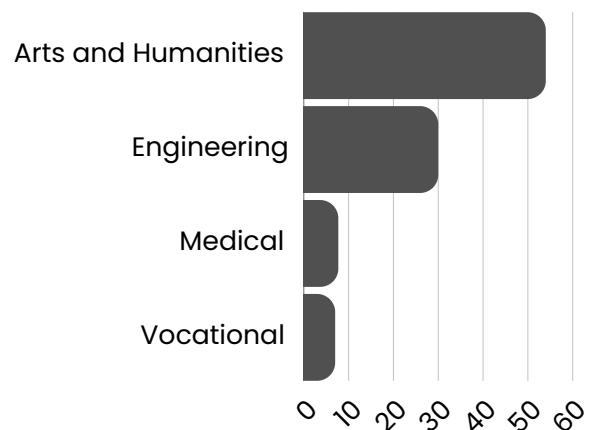
The selection criteria for the recipients of the scholarship ensures that deserving candidates are screened. Some of the significant components of selection criteria include-

1. 80 per cent marks in the higher secondary examination
2. The recipient should have been admitted into a recognised government college.
3. Preferences to the children of single mothers
4. Special preference to students with disability



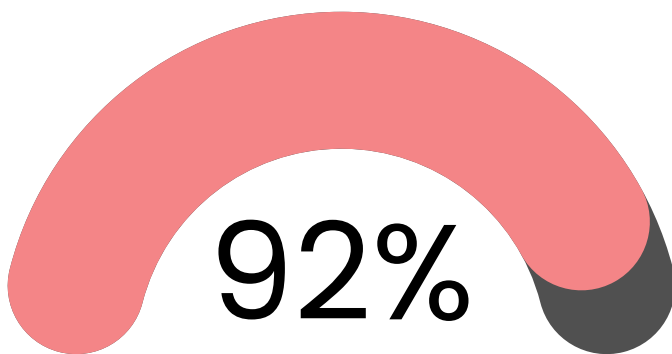
All scholarship recipients have demonstrated exceptional academic performance, with scores exceeding 85%. This underscores the program's focus on identifying and supporting meritorious students who may lack the financial means to pursue higher education.

The scholarship was available for all courses, and the beneficiaries have pursued diverse courses, including B.Tech, B.Com, MBBS, BCA, etc. This broad spectrum of courses reflects the program's inclusivity across various disciplines and fields of study. The selection of beneficiaries across diverse courses also reflects the program's interdisciplinary outreach, fulfilling the scholarship's purpose.



**Courses opted by recipients**

The aim of the scholarship is to support the students from the marginalized communities. The findings from this study attest to the success of this criteria. 92 percent of the students come from households with only one earning member, highlighting the financial vulnerability of their families.



**Households with one earning members**

Additionally, more than 46% of students hail from families where both parents are unemployed, further emphasizing the socio-economic challenges they face. This further justifies that the scholarships are being disbursed to deserving students who are in need of financial support.

The amount the beneficiaries receive as a scholarship ranges between 45,000- 2,50,000. This further reflects the diversity of needs being fulfilled by the program. Based on the different components of the demographic details of the beneficiaries, it is visible that the selection criteria are able to reach the right candidates who are in real need of the scholarships.

## PERFORMANCE OF THE PROGRAM

### Satisfaction with the Program

An overwhelming majority (92%) of scholarship recipients rated the impact of the program as five stars, indicating that they were very satisfied with the program. This indicates the effectiveness of the program and appreciation of the support received. This percentage is also a testament to the overall success of the scholarship program.

When asked if their studies have improved with the help of financial aid, 93 percent of the recipients replied in affirmation. This also highlights the importance of the scholarship in ensuring an uninterrupted and better college education for the recipients.

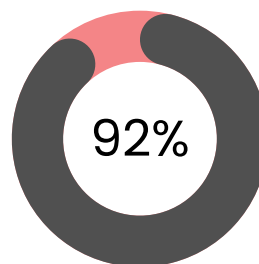


Fig-Satisfaction with the program

When asked if their studies have improved with the help of financial aid, 93 percent of the recipients replied in affirmation. This also highlights the importance of the scholarship in ensuring an uninterrupted and better college education for the recipients.

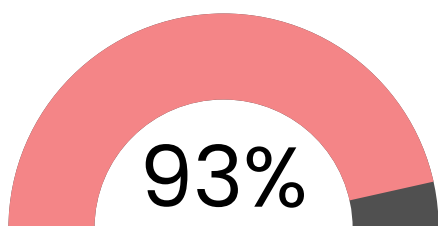


Fig-Improvements in studies

When asked if their studies have improved with the help of financial aid, 93 percent of the recipients replied in affirmation. This also highlights the importance of the scholarship in ensuring an uninterrupted and better college education for the recipients.

### Ease of Access

A noteworthy aspect of the scholarship is highlighted when 92 per cent of the students responded that they did not encounter any challenges in accessing the scholarship. This suggests the presence of a streamlined and efficient process for availing financial assistance. This reflects positively on the program's implementation and accessibility, ensuring that deserving students can benefit without undue bureaucratic hurdles.

Furthermore, All scholarship recipients have successfully completed their respective degree programs. This highlights the program's effectiveness in enabling students to overcome financial barriers and achieve academic milestones, thereby enhancing their employability and socio-economic prospects.

## Conclusion

This impact assessment study provides compelling evidence of the success and effectiveness of the AMM Murugappa Scholarship program in empowering students from socio-economically disadvantaged backgrounds. By providing full-fee support to meritorious students pursuing higher education, the program has not only facilitated access to college education but also contributed to their academic success and future prospects. The high satisfaction levels among beneficiaries, coupled with their positive feedback and academic achievements, underscore the transformative impact of the scholarship in enabling socio-economic mobility and empowering individuals to realize their potential. Moving forward, continued investment and expansion of such scholarship initiatives are crucial for promoting equitable access to education and fostering inclusive growth and development in society.

## Recommendation

Based on the feedback, the following recommendations are suggested:

1

**Outreach and Awareness**—Targeted outreach strategies could be devised to raise awareness about the scholarship program among socio-economically disadvantaged communities, particularly in rural and remote areas.

2

**Additional support services**— services such as mentorship programs, career counseling, and skill development workshops could be offered to complement financial assistance and facilitate holistic development among scholarship recipients.

3

**Promote Alumni Engagement:** Alumni networks could be established within the recipients of scholarships with mentoring opportunities.



# MURUGAPPA YOUTH FOOTBALL ACADEMY

## INTRODUCTION



The MYFA (Murugappa Youth Football Academy) was established in 2015, aiming to democratize access to quality football coaching and facilities, particularly for children from economically disadvantaged backgrounds. It operates under the ethos that football is more than a game; it's a vehicle for imparting crucial life skills such as honesty, discipline, leadership, teamwork, and respect. Initially launched with a "football for change" philosophy, MYFA has evolved significantly, embracing a "Football for Professional" development model. This transformative shift was catalyzed by a groundbreaking three-year partnership with Borussia Dortmund, a collaboration aimed at elevating coaching standards and harmonizing international benchmarks with local footballing landscapes. Through this partnership, MYFA has endeavored to not only enhance the technical prowess of its players but also instill a sense of professionalism and ambition conducive to success both on and off the field.

Central to MYFA's ethos is its commitment to holistic student development. In addition to providing access to world-class coaching and facilities, the academy extends financial support to its students for various competitions. This commitment underscores MYFA's dedication to nurturing not only skilled footballers but also empowered individuals poised to make meaningful contributions to society.

As MYFA continues to carve a path of excellence in youth sports development, the study thoroughly examines the MYFA program, aiming to evaluate its effectiveness in fostering holistic development among students by prioritizing the cultivation of sports skills and essential life values. It also investigates the correlation between students' active involvement in the football coaching program and their academic accomplishments, with a particular emphasis on improving discipline and academic performance. Additionally, this study seeks to inform strategic interventions to enhance the effectiveness and inclusivity of football coaching programs in promoting holistic student development and academic success.

## OBJECTIVES

- To examine the effectiveness of the football coaching program in fostering holistic development among students by emphasizing sports skills and essential life values such as honesty, discipline, and teamwork.
- To investigate the correlation between students' participation in the football coaching program and their academic success, particularly in terms of improved discipline and academic performance.
- Identify and analyze challenges such as managing the balance between sports and academics, acquiring parental consent for academy enrollment, and ensuring sustained student engagement within the academy.

## RATIONALE OF THE STUDY

This project seeks to evaluate the impact of a football coaching program on students' holistic development and academic performance while identifying and analyzing challenges associated with sports participation in an academic setting. By examining the effectiveness of the coaching program in fostering essential life values and sports skills, the study aims to understand its contribution to students' overall development.



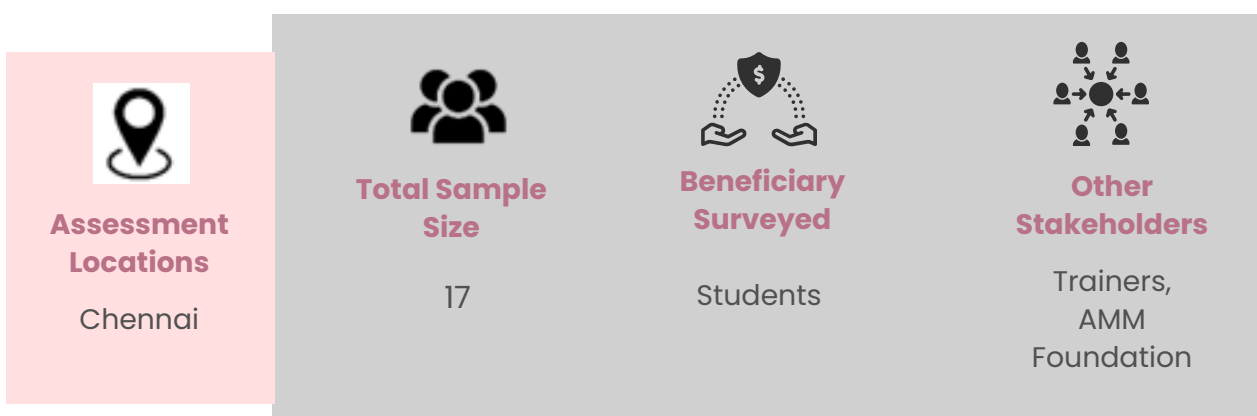
Furthermore, investigating the correlation between students' participation in the program and their academic success will provide insights into the potential educational benefits of sports engagement. Additionally, by identifying challenges such as managing the balance between sports and academics, acquiring parental consent, and ensuring sustained student engagement, the project aims to inform strategies for optimizing the implementation and effectiveness of sports programs within educational institutions.



# RESEARCH DESIGN

## Research Approach

This impact assessment study employed semi-structured interviews as a tool to understand the experience of trainers. A focused group discussion was further conducted with students to understand their perception of the MYFA program. The data collected from the interviews and FGD were analyzed using thematic analysis techniques. This involves identifying recurring themes, patterns, and key findings related to the effectiveness of the MYFA programs and their impact on the student.



## ETHICS ADHERED

The interviews followed the ethical rules of social research, such as informed consent, no harm, and privacy respect. The following rules were followed:

1. Consent (general) – The consent was explicit in writing wherever possible, or verbally informed consent was taken at the least. The researcher ensured confidentiality, withdrew the possibility of consent at any point, and destroyed recordings after the conclusion with agreement from the organization.
2. Safeguarding of personal experiences – The research with the general public avoided any inquiry about traumatic personal experiences and memories to avoid triggering issues that needed further follow-up.

## FINDINGS

**Supportive Infrastructure and Nutritional Assistance:** The academy provides essential support such as nutrient supplements and arranges travel and food for competitions to support student-athletes. However, continuous student attendance is expected, with coaches and trainers managing various aspects of their participation.



**Information and Recruitment:** Recruitment and Information: Coaches and trainers regularly attend classes weekly to present the advantages of sports until they gather 10-12 students per batch. Upon students' interest, they seek the coaches' help in convincing their parents. While parental approval is crucial, some students face hurdles in joining the football academy due to parental consent issues, underscoring obstacles in accessing sports opportunities for specific individuals.



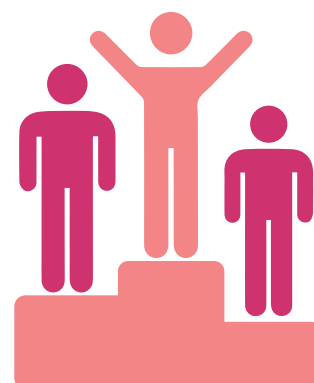
**Coaching Methods and Skill Development:** Students appreciate the individual attention provided by coaches during training sessions, fostering a strong bond between participants and trainers. Participants have experienced significant improvement in football skills with the guidance and support of trainers, enhancing their confidence and understanding of the sport.

**Positive Impact on Health and Fitness:** Students enrolled in the football academy have experienced significant improvements in their health and well-being, attributed to the provision of nutritious meals during training sessions. Nutritious snacks offered after sessions contribute to their overall well-being and performance.



**Holistic Development:** Students have developed essential life skills such as emotional control, decision-making, time management, discipline, teamwork, and respect through their participation in the program.

**Impact on Academic Performance:** Nearly all participants have noticed improvements in their academic performance, attributing this to the motivation, guidance, and support received from coaches and trainers, as evidenced by the absence of student failures in state board examinations since 2015.



**Supportive Infrastructure and Nutritional Assistance:** The academy provides nutrient supplements such as soaked peanuts, dal, sprouts, and fruits after each training session, along with arranging travel and food for competitions. However, the foundation expects continuous student attendance, with coaches and trainers managing other aspects.

**Need for Facility Expansion:** Students express a need for expanded facilities during Focus Group Discussions (FGDs), emphasizing the importance of a larger ground supported by the foundation.

This expansion is viewed as essential to accommodate a greater number of students and enhance the overall benefits derived from the academy's programs and activities. Partnering with leading sports associations may further enhance facilities in the future.



## REFLECTIONS FROM FGD



“— Since joining this program, I have experienced remarkable changes ranging from physical fitness to academic enhancement, as noted by our parents, friends, and neighbors on several occasions. Inspired by our progress, we are determined to elevate our academy sports to the next level and set a benchmark for our juniors.

– A student during FGD

“— Since joining the academy, my friends and I have acquired numerous essential skills through this program. These skills encompass controlling emotions, decision-making, time management, discipline, teamwork, respecting parents and teachers, and enhancing academic performance.

– Students during FGD

“— Numerous students have emphasized the significant enhancement in their fitness since becoming part of the program. They attest that this improved physical condition has empowered them to concentrate more effectively on their studies, free from distractions.

– Students during FGD

“— Last year, I joined the academy after coaches explained football's benefits in class. Initially, my parents opposed it as they held the belief that sports were futile and wouldn't contribute to my future career. The coach convinced them otherwise, emphasizing sports' diverse benefits. Consequently, my parents willingly allowed me to join the academy.

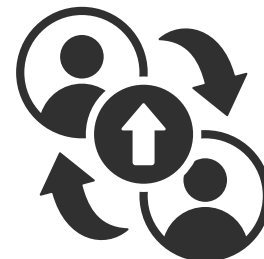
–A student during FGD





## RECOMMENDATION

**Enhance Parental Engagement:** Develop targeted communication via digital channels and convenient meetings for parents with limited time. Offer sessions addressing parental concerns about sports participation.



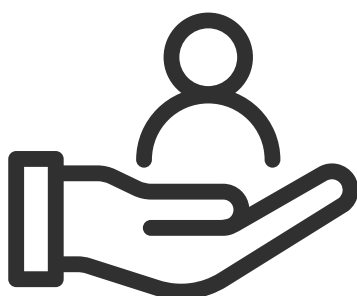
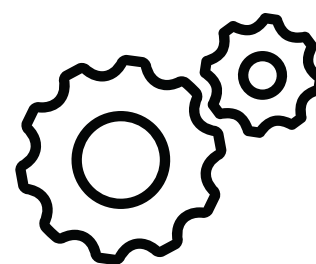
**Address Participation Barriers:** Identify and educate parents on sports benefits to overcome consent issues for football academy participation.

**Encourage Long-Term Participation:** Provide incentives for sustained engagement, This could include recognizing milestones such as reaching specific time milestones within the program or achieving personal goals in skill development.



**Expand Facilities:** Explore partnerships for facility expansion to meet student needs, leveraging sports associations for resources and expertise.

**Improve Coaching Methods:** Regularly assess coaching methods, providing ongoing training and professional development opportunities for coaches to ensure high-quality instruction and support.



**Strengthen Supportive Infrastructure:** Strengthen Supportive Infrastructure: Review and update nutritional assistance and travel arrangements to optimize student health and performance.

## CONCLUSION

The research illuminates the profound impact of the football academy's supportive infrastructure and nutritional assistance on the holistic development of student-athletes. Despite the challenges posed by parental consent issues and the need for continuous student attendance, the academy's commitment to providing comprehensive support shines through its efforts in recruitment, coaching methods, and skill development.

Furthermore, the positive outcomes observed in terms of health improvements, skill enhancement, academic performance, and essential life skills underscore the effectiveness of the academy's programs. However, the identified need for facility expansion, as voiced by students during focus group discussions, underscores the imperative for growth to accommodate a larger number of participants and optimize program benefits.

Moving forward, addressing these challenges and capitalizing on opportunities for partnership with leading sports associations are crucial steps in ensuring the continued success and sustainability of the academy. By expanding facilities and enhancing resources, the academy can further enrich the experiences of student-athletes, empowering them not only in sports but also in their personal and academic endeavors.



### **Limitation of the Study**

Semi-structured key informant interviews and FGD offer valuable insights into stakeholders' experiences and perceptions of football coaching programs, it is important to acknowledge sample size constraints.

The sample size of the study relied on self-reported data, which can be influenced by recall bias or social desirability bias. This may have affected the accuracy and objectivity of the findings.

# SCHOOL SOCIAL WORK

## INTRODUCTION

The School Social Work Project aims to address the comprehensive needs of students by integrating social, emotional, and psychological support within the educational system, recognizing that schools play a crucial role in shaping a child's personality beyond mere academic learning. Acknowledging the changing family structures, evolving social trends, and the exacerbating effects of the pandemic on traditional support systems, this initiative seeks to offer individual and group counselling, early identification and intervention for learning disabilities, and support for navigating exam pressure, bullying, and other school-related challenges. Additionally, it provides career and vocational guidance, addresses adolescent issues, and tackles substance abuse, while also involving parents and grandparents through counselling. This holistic approach aims to bridge the gap in the support system, ensuring that schools can fulfil their students' physical, psychological, and social needs, fostering an environment that supports their overall well-being and development.

Moreover, to embark on a comprehensive examination of the effectiveness of these programs in meeting the diverse needs of students, the study aimed to gather feedback from various stakeholders and assess the program's ability to foster meaningful connections with students. Additionally, through the analysis of both individual and group counselling sessions, we seek to elucidate the program's effectiveness in addressing specific student issues and exploring innovative approaches for promptly identifying and resolving student concerns.



## Research objectives

- Assess the effectiveness of the school social work intervention program in meeting students' physical, psychological, and social needs.
- Identify strategies to overcome challenges and barriers in early identification and intervention, with a focus on enhancing parental involvement and trust-building.
- Examine the scope of socioeconomic obstacles faced by economically disadvantaged students and evaluate the accessibility and impact of parental support on their academic and personal growth.
- Evaluate the impact of counseling and mentoring on student welfare, academic success, and personal growth, including their roles in addressing challenges and fostering development.
- Measure changes in students' confidence and clarity of purpose post-counseling sessions to determine the effectiveness of interventions.





## Rationale of the Study

The study aims to comprehensively examine the effectiveness of the program in meeting the diverse needs of students, encompassing academic, psychosocial, and emotional support. By analyzing feedback from various stakeholders and assessing the program's ability to establish robust connections with students, the research seeks to evaluate the tailored interventions and assistance provided. Furthermore, it delves into the impact of individual and group counselling sessions on addressing specific student concerns, offering insights into the program's efficacy in catering to diverse needs. Additionally, the study addresses challenges associated with early identification and intervention, particularly regarding rapport-building with parents and earning their trust. Through an exploration of factors contributing to parental unawareness and reluctance to engage in counselling, the research aims to propose effective strategies for enhancing parental involvement and support, thereby fostering a more holistic approach to student well-being and academic success.



## Research Design

This impact assessment study employed semi-structured interviews with key stakeholders, such as students, mentors, counsellors, and the principal. These interviews aim to gather rich, detailed insights into the experiences, perceptions, and perspectives of individuals involved in or affected by the counselling program. The qualitative data collected from the interviews were analyzed using thematic analysis techniques. This involves identifying recurring themes, patterns, and key findings related to the effectiveness of the counselling programs and their impact on addressing student needs.

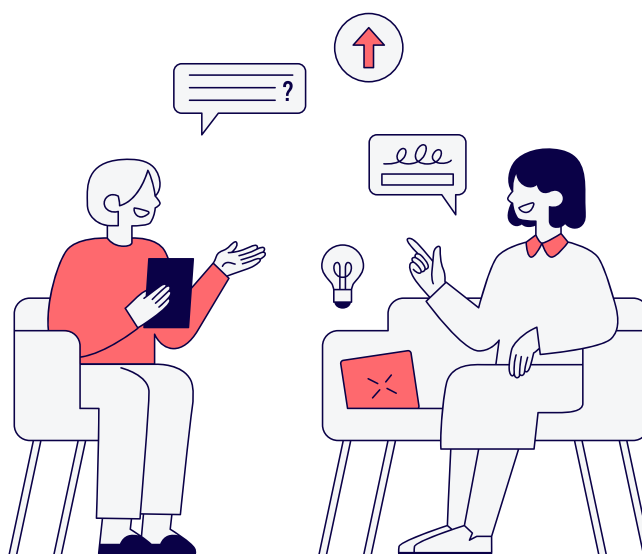
 <b>Assessment Locations</b> Chennai	 <b>Total Sample Size</b> 6	 <b>Beneficiary Surveyed</b> Students	 <b>Other Stakeholders</b> Counsellors, School staff
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## Ethics Adhered

Generally, the ethical rules of social research, such as informed consent, no harm, and privacy respect were adhered. The following rules were followed:

Consent procedures ensured confidentiality and allowed participants to withdraw consent at any time, with recordings destroyed post-research with organizational agreement.

Research with the general public avoided probing traumatic experiences to prevent potential triggers, prioritizing safeguarding.



## FINDINGS OF THE STUDY

The study highlights the effectiveness of the school social work intervention program in addressing student needs but also identifies areas for improvement to enhance student well-being and academic success.

- **General Experience**

Respondents, including counselors, teachers, and the principal, collectively affirm the significant benefits of the school social work intervention program. It effectively addresses students' physical, psychological, and social needs, strengthening student relationships and improving educational and psychosocial support delivery. Positive transformations are evident, especially among economically disadvantaged students facing familial challenges, enhancing academic engagement and overcoming personal obstacles. The program plays a pivotal role in fostering student progress, offering comprehensive support, and demonstrating substantial positive changes overall.

- **Early Identification & Intervention**

The government-backed school, supported by the AMM foundation, is crucial for education and development, especially given its economically disadvantaged student population. With around 30-40 percent of students raised by single parents, there's limited familial support, hindering academic and personal growth.

As a result, significant challenges have arisen, with maintaining discipline and addressing substance abuse being primary concerns. Traditional disciplinary methods often fall short, compounded by the difficulty in monitoring student behaviour outside of school premises. Additionally, establishing rapport and building trust has proven challenging during the program's initial phases.



- **Operational Structure**

Each group of ten students was assigned a dedicated mentor who served as a primary point of contact for academic and personal assistance. These mentors, predominantly sourced from the pool of school teachers, underwent specialized training conducted by the school counselor. This training equipped them with the skills to identify and manage various student issues effectively. The collaborative efforts between mentors and counselors ensured that students received comprehensive support tailored to their individual needs.

- **Comprehensive Counseling Approach**

The program's implementation had a comprehensive counselling approach, which encompassed both individual and group counselling sessions tailored to address the specific needs of students. Through peer group activities and regular discussions, common concerns were effectively addressed, while individual sessions focused on tackling personal challenges. This collaborative methodology ensured that students received personalized support tailored to their unique requirements, thereby promoting their overall well-being and academic success.



Moreover, the involvement of school management and parents was contingent upon the severity of the issues identified. Whether students were grappling with personal struggles, experiencing parental separation, coping with parental substance abuse, or facing learning disabilities, the program endeavored to address the full spectrum of challenges present among the student body.

“—  
Since childhood, I struggled with anxiety and speaking in front of others, fueled by comparisons with my well-liked elder brother. This led to a lack of motivation in academics, resulting in barely passing grades in 10th and 12th grades. I withdrew from class and avoided interactions with peers until teachers suggested counselling sessions. Through counselling, I gained confidence and saw improvements in my academic performance.

– A Student

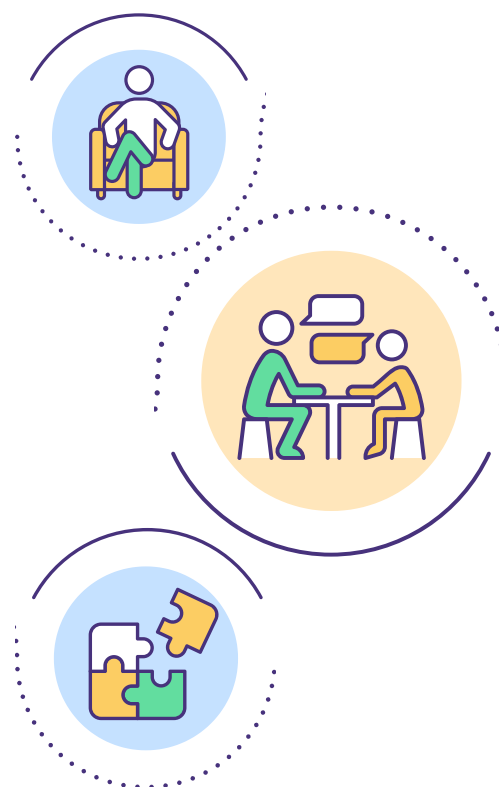
- **Substance abuse and limited Parental Involvement**

The findings suggest minimal parental involvement in addressing student substance abuse, indicating a significant gap in external support systems. With parents either absent due to work commitments or not actively monitoring their children's activities, students become more susceptible to substance abuse. This lack of parental involvement exacerbates the challenge of combating substance abuse within schools.

- **Accessibility of Substances**

The easy availability of narcotics in the area surrounding the school. The paragraph mentions that substances are readily accessible in local shops, bus stands, and other areas. Additionally, the paragraph highlights how students, particularly those above the 7th standard, engage in part-time work at events and ceremonies, using their earnings to purchase substances. This accessibility contributes to the high prevalence of substance abuse among students, making it challenging for school authorities to control effectively.

Students faced expulsion from college due to a physical altercation, prompting the college management to seek counsel before making a decision. The counsellor's investigation revealed the student's underlying feelings of neglect and inferiority, both at home and in college. Through several counselling sessions, the student found comfort and support, leading to a remarkable transformation. From struggling in the first year to excelling academically in the final year, the student overcame his emotional hurdles with the counsellor's guidance. Ultimately, the counsellor's intervention not only prevented expulsion but also improved the student's emotional well-being and academic performance.



- **Improved Parental Involvement with Room for Enhancement**

The program has observed some improvements in parental involvement, likely attributed to the counseling provided under the program. This finding suggests that the counseling sessions have had a positive impact on some parents, leading to increased awareness and willingness to support their children. However, despite these improvements, the program faces challenges in addressing parental reluctance to seek support for their children's mental health needs, as many parents still perceive their children as normal. This reluctance stems from a lack of understanding and awareness about child issues among parents, which further complicates efforts to address their children's needs effectively.

- **Significant Positive Impact on Students' Career Aspirations**

The program has demonstrated a profound and transformative effect on students' career aspirations and goals. Through its multifaceted approach and dedicated efforts, the program has equipped students with essential skills, insights, and resources necessary for making informed decisions about their future careers.

This finding highlights the program's success in fostering a supportive environment and offering tailored guidance, empowering students to explore various career options and identify their strengths and interests. The remarkable 100% change observed among students, with many expressing newfound clarity, ambition, and determination in pursuing their chosen career paths, underscores the effectiveness and significance of the program



“

After completing my course, I plan to take a two-year break to work and save money for further education. Following this period, I aim to pursue BTech studies without burdening my father with fees. I have had significant personal growth, likely influenced by the support and guidance from the I received from my counsellor.

A student

# RECOMMENDATIONS



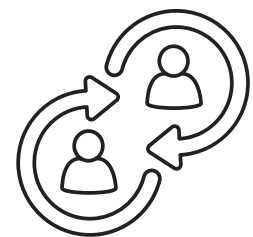
**Enhance Parental Involvement:** Increase parental engagement by hosting educational sessions on substance abuse signs and the importance of parental involvement in student lives.

**Community Collaboration:** Strengthen partnerships with local organizations, law enforcement, and businesses to reduce substance abuse. Implement community initiatives to reduce the availability of narcotics and provide addiction prevention resources.



**Expand Mentorship:** Provide additional support to students facing familial challenges, like single parenthood or parental substance abuse, through mentorship programs.

**Specialized Mentor Training:** Offer ongoing training for mentors to address various student issues effectively, including substance abuse prevention, conflict resolution, and mental health support to equip mentors better in their roles.



**Parental Counseling:** Introduce counseling services to address parental reluctance in understanding children's mental health needs, providing resources and support to understand and address their children's emotional well-being.

**Career Development Support:** Expand career workshops and resources to help students explore and pursue career aspirations, including internships and mentorship.



**Program Evaluation:** Continuously assess and adjust program strategies based on stakeholder feedback and outcome monitoring to meet evolving student and community needs.

## CONCLUSION

In conclusion, the findings underscore the school social work intervention program's significant progress in addressing students' diverse needs, particularly those from economically disadvantaged backgrounds facing familial challenges. While the program has strengthened bonds with students and led to positive transformations, challenges remain, including limited parental involvement, substance abuse, and parental reluctance to seek support for their children's mental health needs.

To enhance the effectiveness of the program, several recommendations are proposed. These include increasing parental engagement and awareness, strengthening community collaboration to address substance abuse, expanding mentorship programs, providing specialized training for mentors, offering parental counseling and support, and introducing additional career development workshops and resources. Moreover, ongoing evaluation and adjustment of program approaches are crucial to ensuring continued responsiveness to the evolving needs of students and the community.



By implementing these recommendations and prioritizing students' well-being and academic success, the program can advance its mission of empowering students to overcome obstacles and achieve their potential. It can continue to serve as a beacon of support and guidance for students navigating today's educational challenges.

### Limitation of the Study

Semi-structured key informant interviews provide insights into counselling programs, but sample size constraints exist. Relying on self-reported data may introduce recall bias or social desirability bias, potentially affecting the findings' accuracy. Additionally, resource constraints, time limitations, and logistical challenges may have influenced the study's scope and depth, warranting consideration when interpreting results.



# MURUGAPPA SCIENCE CENTRE RENOVATION

## INTRODUCTION

Science and technology are integral to a nation's socio-economic development, aiming to enhance individuals' and institutions' understanding, skills, and knowledge base. Effective science and technology communication, encompassing dissemination, appropriation, and appreciation of scientific goods, including critical thought and understanding of scientific practices, is crucial for promoting social, economic, cultural, and environmental development within a country (Rautela & Chowdhury, 2015)



In today's rapidly evolving technological landscape, science centres serve as vital hubs for innovation and education. By offering hands-on exhibits, educational programs, and outreach initiatives, these centers inspire the next generation of scientists, engineers, and innovators.

Sketch: Representation of Students in Science Centre

Additionally, they provide a platform for collaboration between academia, industry, and the public, fostering interdisciplinary dialogue and collaboration.

Furthermore, the modernization of science centers reflects a commitment to inclusivity and accessibility in STEM (Science, Technology, Engineering, and Mathematics) education. By incorporating features such as multimedia presentations, assistive technologies, and multilingual exhibits, upgraded centers can cater to diverse audiences, including individuals with disabilities and those from marginalized communities.

Ultimately, investing in the renovation and enhancement of science centers not only enriches the cultural and educational landscape but also contributes to the overall well-being and prosperity of society. As we strive to address complex global challenges, from climate change to public health crises, the role of science centers in promoting scientific literacy and fostering innovation becomes increasingly indispensable. Therefore, initiatives like the collaboration between the AMM Foundation and Cholamandalam to renovate science centers are crucial steps towards building a brighter and more sustainable future for all.



## OBJECTIVES

1. Assess the Murugappa Science Centre's effectiveness in fulfilling its mission of promoting curiosity, creativity, and confidence among economically disadvantaged children.
2. Evaluate how the center's renovations align with its goals of sparking curiosity, creativity, and leadership among underprivileged children, focusing on expanded outreach and impact on student engagement.

## RATIONALE

The rationale for the research is to evaluate the effectiveness of the Murugappa Science Centre's initiatives in promoting scientific curiosity and creativity among underprivileged children through experiential education.

## RESEARCH DESIGN

This qualitative research design combines participant observation at the Murugappa Science Centre, where the researcher actively engages with underprivileged children, and one key informant interview with a knowledgeable individual. Through participant observation, the researcher gathers firsthand insights into the children's experiences, while the key informant interview provides contextual information and expert perspectives on the center's initiatives in promoting scientific curiosity and creativity among underprivileged children.

Ethical considerations include informed consent, confidentiality, and respect for participants' autonomy and well-being.



Image 1

## FINDINGS

Before delving into the analysis, let's us look at the field images, highlighting the diverse aspects of modern science education, architectural innovation, and artistic expression depicted in each photograph in renovated building.



## Analysis

**Image 1** captures the essence of modern education, showcasing young school students enthusiastically engaged with iPads to learn about science and technology. The image reflects the integration of technology into educational settings, highlighting how digital tools can enhance the learning experience and foster curiosity among students. The use of iPads suggests interactive and immersive learning, where students have access to a wealth of scientific information and resources at their fingertips. Additionally, the presence of diverse students in the image signifies inclusivity in STEM education, showcasing the potential for technology to bridge gaps and provide equal learning opportunities for all.

**Image 2, 4 and 5** presents a striking contrast to the traditional perception of science centres, featuring a renovated building that exudes modernity and innovation. The sleek architectural design and pristine appearance of the building signal a departure from conventional structures, symbolizing a commitment to embracing advancements in science and technology. The renovation of the science center reflects a dedication to creating vibrant and welcoming spaces that inspire curiosity and exploration. Moreover, the renovated building serves as a physical manifestation of the importance placed on science education and its role in shaping the future.

In Image 3 vibrant science-based graffiti adorns the walls, injecting creativity and colour into the surroundings. The graffiti art depicts scientific concepts, symbols, and imagery, serving as a visual representation of the intersection between art and science. Beyond mere decoration, the graffiti sparks curiosity and provokes thought, inviting viewers to contemplate the wonders of the universe and the complexities of scientific discovery. Furthermore, the presence of science-based graffiti in public spaces transforms the environment into a canvas for education and inspiration, democratizing access to scientific knowledge and making it accessible to all.

Overall, these images collectively convey a narrative of innovation, inclusivity, and inspiration in the realm of science education. From the use of technology to engage young learners to the renovation of science centers as modern hubs of knowledge dissemination, and the integration of science-themed graffiti into urban landscapes, each image offers a glimpse into the multifaceted ways in which science is celebrated and promoted in contemporary society.

## COORDINATOR OF SCIENCE CENTRE

I've had the privilege of witnessing the transformative impact of the Murugappa Science Centre firsthand. Its mission to ignite curiosity, nurture creativity, and build confidence among economically disadvantaged children resonates deeply with me. Through experiential, hands-on science education, the center aims to empower students from government schools and teachers alike.

As I explored the center post-renovation, I was struck by its expanded capacity and enhanced outreach efforts. With the addition of eight new skill-based labs, the center now reaches more schools in the Sivaganga and Pudukkottai districts, providing invaluable opportunities for underprivileged children to engage with science in a meaningful way. The impact of these renovations is palpable in the increased student engagement and enthusiasm witnessed during my visits.

Despite facing challenges in ensuring accessibility to underprivileged children, the center's exclusive focus on government and government-aided schools has allowed it to reach approximately 80% of students in the districts. This targeted approach has proven effective in bridging educational gaps and fostering a love for science among marginalized communities.

Interacting with students, particularly those from Tamil medium government schools, has been incredibly rewarding. Their enthusiasm for hands-on learning methods is evident, and I've witnessed firsthand how these approaches lead to a deeper understanding and retention of scientific concepts. It's heartening to see students progress from using center models in science fairs to developing their own innovative projects, showcasing their creativity and growth.

Looking ahead, I'm excited to see how the center continues to evolve and expand its offerings. With a capacity to accommodate 500 students daily, there's immense potential for further growth and development. Plans to enhance infrastructure, introduce new programs in areas like bio-diversity and robotics, and provide additional training for staff underscore the center's commitment to excellence and innovation in science education.





The key findings of the project show a positive response in student engagement, retention and interest. Some key highlights have been elucidated below:

- **Objectives and Target Audience:** The Science Centre primarily works with students from economically weaker sections, enrolled in government schools in the 2 districts of Sivagangai and Pudukkottai. The primary objective of the Centre is to increase access to practical, hands-on science education for Govt. school students and teachers. This approach adopts a low-cost model targeted to supplement government school learning, train teachers, facilitate peer-group learning and develop an acumen and interest in science.
- **Outreach:** Before the renovation, only 60 students of one school were accommodated per day which has now increased to 300+ students, from multiple schools. 80% of the student beneficiaries are from economically weaker sections. The Center works primarily in Tamil- medium government schools.
- **Impact of Renovation:** Before the renovation, the scope of the Center was restricted to working with limited schools and only on the school curriculum. After the renovation, the centre works with 8 more skills labs and has increased its student outreach. The Center has established a stronger relationship with the government district education administrators. Additionally, the outreach and knowledge about the Centre amongst the community has also increased.
- **The students get an opportunity to learn about media, digital and electronics-related information in the Centre.** The government school curriculum offers limited insights into science-based innovations. The adoption of a hands-on learning approach in the centre shows positive responses in engagement, retention and awareness. The students also get the opportunity to participate and present their models at science fairs. An increased number of schools are showing an organic interest in the centre's work and sending more students to the Center for training sessions.
- **Challenges:** The outreach of the Science Center is mostly restricted to government and government-aided schools. Other private schools are outside the ambit of this project. The centre wishes to develop its infrastructure further and expand the scope of training to other new areas such as ecology, astronomy, robotics etc.

## CONCLUSION

In conclusion, the images presented offer a compelling narrative of progress and dynamism in the fields of science education and architectural design. From the integration of technology to engage young learners to the renovation of science centers as modern hubs of knowledge dissemination, each image encapsulates a facet of the evolving landscape of science promotion and education. Furthermore, the inclusion of science-themed graffiti highlights the intersection between art and science, transforming public spaces into vibrant platforms for education and inspiration.

Overall, these images underscore the importance of innovation, inclusivity, and creativity in promoting scientific literacy and fostering a culture of curiosity and exploration. As society continues to grapple with complex challenges, from climate change to public health crises, the role of science education and engagement becomes increasingly crucial. By embracing technological advancements, architectural innovation, and artistic expression, we can build a brighter future where science is celebrated, accessible, and central to societal progress.

## RECOMMENDATION

Based on the feedback, the following recommendations are suggested:

1

Further develop infrastructural facilities in the Science Center to install better lab equipment and to improve the conditions of existing fixtures like tables, chairs etc.

2

The Science Center should include new and upcoming areas of science training such as biodiversity, robotics, astronomy, ecology, greenhouse, butterfly garden etc.

3

Improving the existing content/curriculum of the Center's science training and undertaking recruitment of personnel, along with their training could further help in the scaling and expansion of the Science Center.

# SOLAR PANELS

## INTRODUCTION

Solar power plays a pivotal role in addressing climate change by substantially decreasing greenhouse gas emissions compared to fossil fuels. Utilizing solar energy not only helps mitigate the environmental impacts associated with traditional energy sources but also fosters energy independence and security. Moreover, solar power provides a renewable and sustainable alternative, contributing to a cleaner and healthier planet for present and future generations. In alignment with this vision, the AMM Foundation is dedicated to transforming its institutions into environmentally sustainable green campuses. As a significant stride towards this objective, the Foundation has initiated the installation of solar panels at two strategic locations: the Sir Ivan Stedeford Hospital and the Murugan Polytechnic Centre. These institutions cater to a wide population from Ambattur, Avadi, Tiruvallur, and surrounding villages. This initiative underscores the foundation's commitment to renewable energy and its manifold benefits, not only for the environment but also for enhancing operational efficiency and achieving energy autonomy within the involved institutions. This project symbolizes a stride towards eco-friendly solutions in the healthcare and education sectors, aiming to set a precedent for renewable energy adoption across similar institutions.

### **Project Overview:**

The Sir Ivan Stedeford Hospital, a multi-speciality facility with 200 beds, serves approximately 1800 outpatients daily and has been under the management of the AMM Foundation since its establishment in 1966. This hospital caters to a large patient population from Ambattur, Avadi, Tiruvallur, and nearby villages. To reduce dependency on the Tamilnadu Electricity Board (TNEB) and its associated operational costs, the AMM Foundation installed the Solar Power generating system in phases, with the first phase in 2020 and the second phase in 2023, across various hospital blocks.

Murugappa Polytechnic College (MPC), established in August 1957 as a Government Aided Polytechnic College and supported by the AMM Foundation, continually updates its curricula and syllabi to align with industry needs. To minimize reliance on the Tamilnadu Electricity Board (TNEB) and reduce operational expenses, the AMM Foundation installed the Solar Power generating system in 2023 across various blocks of the Polytechnic.

## Objectives

- Evaluate the impact of solar panel installation on operational efficiency and financial sustainability.
- Assess the educational and environmental benefits of solar panel integration.
- Investigate stakeholder perceptions and experiences with solar power initiatives

## Rationale of the Study

The study aims to comprehensively investigate the multifaceted impact of solar panel integration within institutional settings. Solar power installations have the potential to significantly enhance operational efficiency and financial sustainability by reducing energy costs and dependence on traditional energy sources. Furthermore, the study seeks to evaluate the educational and environmental benefits of solar panel integration, recognizing its potential to foster sustainability literacy and mitigate environmental impact. Additionally, the research aims to assess stakeholder perceptions and experiences with solar power initiatives, providing valuable insights into the social and organizational dynamics surrounding renewable energy adoption.





# RESEARCH DESIGN

## Research Approach

The research approach includes conducting semi-structured interviews with four key informants at Sir Ivan Stedeford Hospital and Murugappa Polytechnic College. These interviews aim to grasp their experiences with solar power initiatives and gain valuable insights into their implementation and impact. Data analysis is used to identify themes and patterns, leading to recommendations aimed at improving the efficacy and sustainability of solar power projects in these institutions.

 <b>Assessment Locations</b> Sir Ivan Stedeford Hospital and Murugan Polytechnic Centre	 <b>Total Sample Size</b> 4	 <b>Beneficiary Surveyed</b> Administrative Officers and Doctors	 <b>Other Stakeholders</b> AMM Foundation
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## Ethics adhered

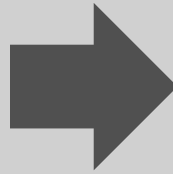
- The interviews followed the ethical rules of social research, such as informed consent, no harm, and privacy respect. The following rules were followed:
- Consent: Consent procedures included written or verbal informed consent, prioritizing confidentiality and allowing participants to withdraw consent at any time. Recordings were destroyed post-research with organization agreement.
- Personal Experience Safeguarding: Research with the general public refrained from probing traumatic experiences to prevent potential triggers requiring additional follow-up.



## FINDINGS- MURUGAN POLYTECHNIC CENTRE

### **Pre-Installation Challenges:**

High monthly electricity consumption and costs pose challenges in covering operational expenses. These difficulties had a substantial financial impact on daily administrative tasks and overall centre's operations.



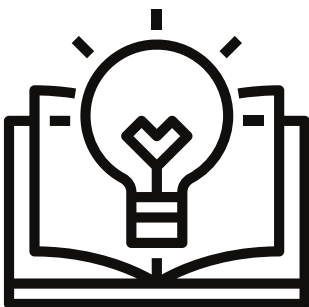
### **Post-Installation Impact:**

Solar panels reduced electricity consumption by 20-35%. This reduction significantly decreases the operational cost of electricity by 40-50%.



**Enhanced learning environment:** Before solar panel installation, high electricity expenses restricted air conditioning in many labs and limited services across blocks. However, solar panels improved air conditioning and services, enhancing the learning environment.

**Educational Benefits:** Educational Benefits: Solar panel technology has been incorporated into the school's curriculum, providing Electrical engineering students with hands-on learning experiences and enriching educational resources.

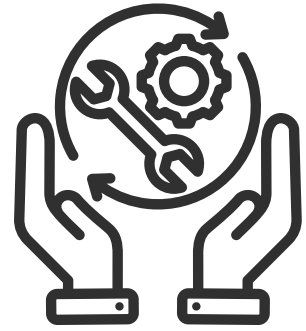


### **Reduction in Reliance on Central Grid and Outages:**

The introduction of solar panels has notably diminished reliance on the central grid for electricity supply, mitigating issues related to power outages. This reduction in dependence on the central grid has improved the overall stability and reliability of electricity supply to the Polytechnic.

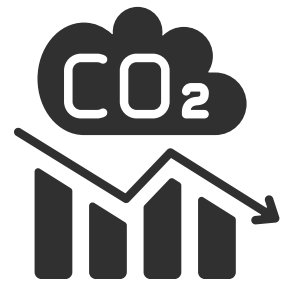
**Smooth Installation:** Despite challenges like temporary class suspensions for cable laying, solar panel installation was efficiently managed with minimal disruptions.

**Technical and Maintenance:** All solar panels remain within the warranty period, experiencing no issues. Any problems are promptly addressed by the concerned team, with repair and maintenance costs covered by the AMM foundation's budget. Internally, designated personnel are responsible for panel care and regular cleaning.



**Environmental Awareness:** Solar panel installation fostered environmental awareness and was integrated into school souvenirs to promote consciousness among parents and stakeholders.

**Reduced Environmental Footprint:** Solar power reduced diesel consumption during outages, shifting to a 60% electricity and 40% solar power dependency, cutting diesel usage during outages by 40%.



## FINDINGS- IVAN STEDEFORD HOSPITAL, AMBATTUR

**Pre-Installation Challenges:** Before the installation of solar panels, the hospital faced significantly high monthly electricity consumption and costs, posing challenges in covering operational expenses. These difficulties had a substantial financial impact on daily administrative tasks and overall hospital operations.

**Post-Installation Impact:** The installation of solar panels has notably decreased electricity consumption, with solar panels supporting 20-35 percent of the total usage. This reduction significantly decreases the operational cost of electricity by more than one lakh rupees every month, enabling the administration to focus on other areas.



**Other Benefits:** Solar power generation ensures a highly reliable electricity supply. With reduced operational electricity costs, the hospital has extended air conditioning facilities to additional labs and departments due to surplus power supply from solar panels.



**Technical and Maintenance:** All solar panels remain within the warranty period, and no issues are experienced. Any problems are promptly addressed by the concerned team, with repair and maintenance costs covered by the AMM foundation's budget. Internally, designated personnel are responsible for panel care and regular cleaning.

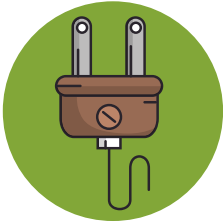
**Staff Feedback:** Hospital staff anticipates that decreased electricity expenses will enhance their welfare and activities. The indirect reduction in administrative charges also positively impacts staff well-being.

**Future Plans:** To expand solar energy usage, adding 150 kW in phase 3, contingent on funding. This aims to power areas like the canteen, parking, open spaces, and future expansion buildings, enhancing hospital operations.





**Enhanced Power Resilience:** With individual transformers for high-tension power usage, the hospital ensures minimal power interruptions. Monthly maintenance schedules, coordinated with the electricity board, result in brief outages lasting only 7-8 hours. Moreover, the hospital maintains a robust backup system, providing 12 hours of uninterrupted power through diesel generators during emergencies.



**Environmental Impact:** The integration of solar power has led to a significant reduction in diesel consumption during electricity outages. Currently, the hospital relies on a sustainable energy mix, with approximately 60 percent sourced from electricity and 40 percent from solar power. This shift has effectively slashed diesel usage during outages by half, demonstrating a marked reduction in the hospital's environmental footprint.

“

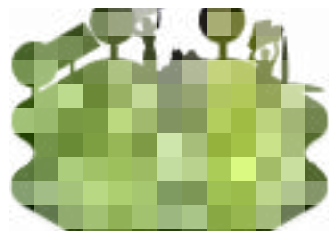
Before the installation of solar panels, both monthly electricity consumption and the corresponding bill were significantly higher. However, following the installation, we observed substantial decreases in electricity bills. However, due to the construction of new blocks in the hospital, it's challenging to provide an exact quantification.

—Administrative Officer



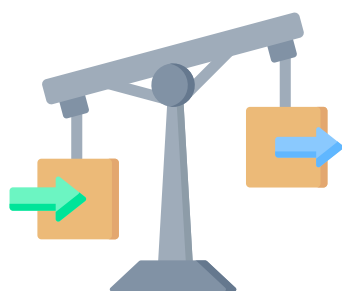
## RECOMMENDATIONS/ WAY FORWARD

Enhance solar power efficiency by monitoring energy consumption and implementing improvements. Provide continuous training for personnel managing solar panel maintenance to uphold system effectiveness.



Extend the deployment of solar panels to cover additional areas within the Polytechnic and Hospital, ensuring broader access to facilities. Extend solar panel initiatives to other public institutions supported by the AMM Foundation

Strengthen collaborations with industry stakeholders to incorporate real-world applications of solar panel technology into internships and collaborative projects.



Secure permission from the electricity board to export surplus electricity generated during weekends and vacations to the central grid. Utilize the resulting savings to extend facilities.

Communicate the hospital's sustainability efforts and improve its public image with displays explaining the solar panel project and its environmental benefits.



## CONCLUSION

In conclusion, this study highlights the significant impact of solar panel installation on enhancing operational efficiency, advancing education, and fostering environmental sustainability at the Polytechnic and Hospital. Despite initial challenges such as high electricity consumption and costs, post-installation led to a notable reduction in operational expenses, allowing the administration to focus on other areas. Additionally, improvements in the learning environment, including enhanced air conditioning and services, have enriched the educational journey for students. Integrating solar panel technology into the curriculum has provided valuable hands-on learning opportunities, particularly in Electrical Engineering. Furthermore, decreased reliance on the central grid has bolstered electricity supply stability and ensured seamless technical operations within warranty periods, with continuous maintenance efforts optimizing system performance for long-term efficiency.

Moreover, the installation of solar panels has sparked environmental consciousness, which is evident in their integration into school souvenirs, thereby raising awareness among stakeholders. This transition to solar power has significantly diminished environmental footprints, especially during outages, by slashing diesel usage by an impressive 40



## LIMITATION OF THE STUDY

Semi-structured key informant interviews offer valuable insights into stakeholders' perceptions of solar panel programs, but sample size constraints should be acknowledged. The study's sample size relied on self-reported data, susceptible to recall bias or social desirability bias, potentially affecting the accuracy of the findings. Additionally, resource, time, and logistical constraints may have influenced the study's scope and depth, impacting the interpretation of results.



# MOBILE HEALTH VAN

## INTRODUCTION

India, with over 60% of its population residing in rural villages, faces challenges in providing accessible healthcare to its citizens, which constitutes a fundamental human right. Despite efforts, millions in rural areas lack access to basic healthcare due to remoteness, infrastructure deficits, and governance issues (Kasthuri, 2018). The absence of adequate healthcare infrastructure compels villagers to travel to towns for medical treatment, incurring expenses and disrupting livelihoods, thereby increasing healthcare disparities between rural and urban populations.

In response, the AMM Foundation collaborates with the Wockhardt Foundation to deploy mobile health vans (MHVs) across rural India, aiming to deliver quality primary healthcare services to underserved communities. This initiative targets remote areas with limited healthcare access, offering promotive, preventive, and curative healthcare services to improve health outcomes and address preventable diseases. Currently, the MHVs operate in 6 locations across 4 states, catering to rural communities outside the formal healthcare network.

This study conducts an impact assessment of the Medical Health Van Project to gauge its effectiveness, efficiency, and utility in providing accessible and free healthcare to rural communities. Employing a comprehensive approach, the study will evaluate various aspects of the project using diverse metrics to assess the intervention's success.



## Objective

The main goal of this impact assessment study is to evaluate the efficacy of the mobile health van operated by the Wockhardt Foundation, funded by the AMM Foundation, in delivering healthcare services to rural communities in India. Specifically, the study aims to:

1. Assess the reach and accessibility of mobile health van services among rural communities.
2. Evaluate the effectiveness of promotive, preventive, and curative healthcare services provided by the mobile health van.
3. Identify challenges and propose recommendations for improvement in delivering healthcare services through the mobile health van.

## Rationale of the study

The study aims to assess the effectiveness of a mobile health van initiative in providing healthcare to rural communities, addressing the need for accessible medical services in underserved areas and identifying areas for improvement in service delivery.




## About the project

The AMM Foundation and Wockhardt Foundation have collaborated to bring quality primary healthcare services to the rural communities across different states of India through Mobile Health Vans. The healthcare services provided by the MHVs include free doctor's consultation, free distribution of medicines, basic diagnostic tests, and referral to other healthcare facilities. Along with this information and awareness material on rights and entitlements, government social security schemes and health programs is also provided.



## RESEARCH DESIGN

This study employs a mixed-method approach that seamlessly integrates both quantitative and qualitative methodologies (Creswell & Creswell, 2017) to conduct the impact assessment. Within the quantitative segment, survey questionnaires were used to elicit feedback from patients. To ensure a representative sample in the quantitative segment of the study, we employed a stratified random sampling technique (Kadilar & Cingi, 2005), encompassing community members from diverse genders and age groups. The survey questionnaires incorporated Likert scale questions, providing a quantitative metric to understand the perspectives of the community members and medical staff on the efficacy, effectiveness and usefulness of the project. This method not only facilitated nuanced comparative analyses but also ensured a standardized evaluation of the intervention's efficacy.

 <b>Assessment Locations</b> Sivagangai District and Sarigam	 <b>Total Sample Size</b> 132	 <b>Beneficiary Surveyed</b> Patients	 <b>Other Stakeholders</b> Medical staff, Managers
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In conjunction with the quantitative data, qualitative methods were employed to offer a more nuanced understanding and capture the perspectives and experiences of the key stakeholders. In-depth interviews and key informant interviews were conducted using purposive sampling with these stakeholders to comprehend the effectiveness, adequacy, and efficiency of Mobile Health Van.

### Ethical considerations

Ethical considerations, including obtaining informed consent from participants, informing community members and medical staff about the study's purpose and risks, safeguarding respondent anonymity, and ensuring diverse representation, were prioritized to uphold participants' rights and well-being, thereby ensuring the study's ethical integrity.

## FINDINGS

### Need for Mobile Health Services

Primary Healthcare Centers (PHCs) in India are the backbone of healthcare in rural communities. When asked about the proximity of Primary health centres, 46.8% of respondents reported that the nearest PHC was located within 1-3 km. Meanwhile, 22.6 per cent of the patients responded that they travelled for 3-5 km. Moreover, 30.7 per cent of the community members are travelling 5 or more km to reach the nearest Primary Healthcare Centers (PHCs).

With regards to the time taken to reach their nearest PHCs, the patients respondents that on average it took 30-45 minutes. This emphasizes the need to bring the accessible healthcare closer to the communities. Furthermore, it also reveals a significant need for mobile health services in rural India due to limited access to primary healthcare centers (PHCs) and reaffirm that the program is being implemented in the right geographies.

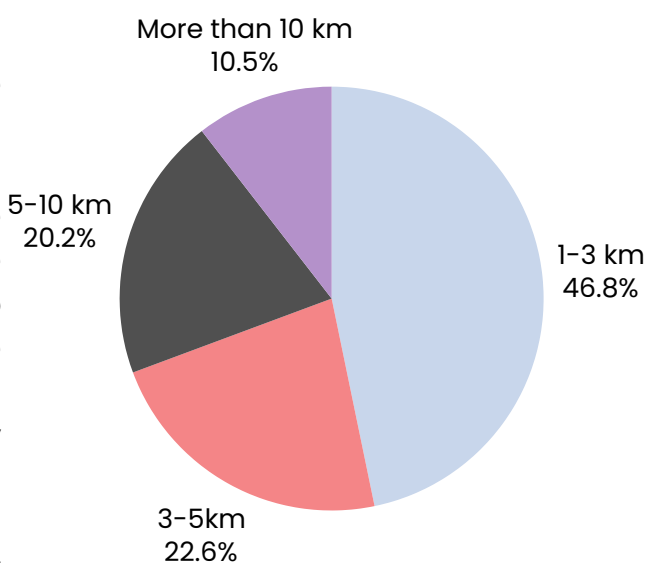


Fig- Distance of nearest PHC

When asked about the preferred mode of transportation to reach the nearest PHC, 71 percent of the community members used private transportation like bike whereas 29 percent of the members used public transport options like buses or autos. Additionally, it was found that community members spend between Rs. 40-120 for transportation to access healthcare services, reflecting the financial burden associated with seeking medical care.

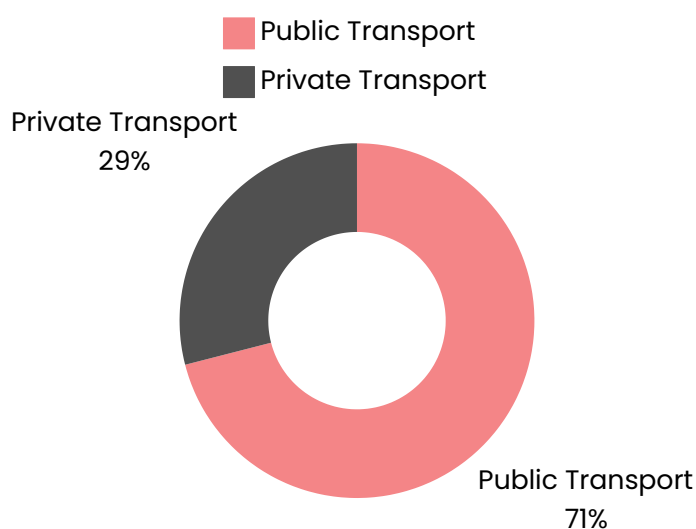


Fig- Preferred mode of transport

## Utilization of Mobile Health Van

An overwhelming 87.1 per cent of the community members have found the services provided by Mobile Health Van convenient in terms of location and timing. This percentage is also a testament to the services provided by the Wockhardt Foundation. The locations for stoppages of the van is generally decided after discussing with the village leaders and other community members. This ensures that the locations and timings are widely known within the village .

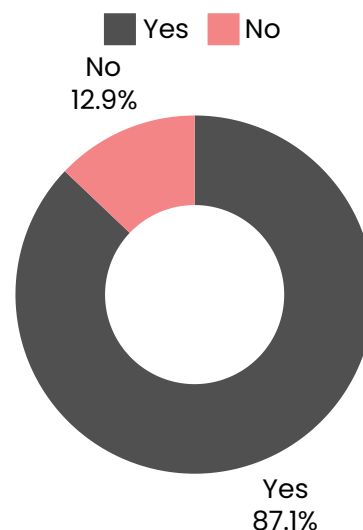
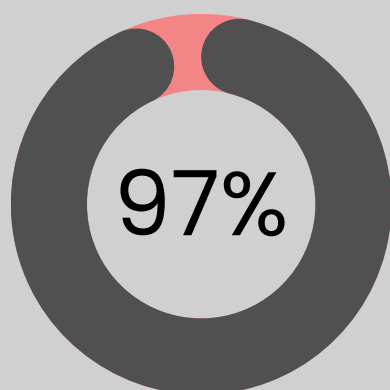


Fig- Satisfaction with MHV

The findings further reflects that 96.8 percent of the community members are not facing any difficulties in accessing the services from the medical health van. The members of medical team take many steps to ensure that the community members don't face any issues. They share the timings of the visits, provide adequate care during consultations and take steps to increase awareness on issues related to health.

The majority of the staffs from the medical team are working on the project for more than 2 years. The continuity of the staffs lead to a better rapport between the community members and the medical team. The medical team has inculcated an emphatic community approach during the interactions with the patients. The medical teams at times also visit the patients suffering from immobility at their homes to make sure that no one is left behind in terms of accessible healthcare.



said that they did not face any difficulties with the Mobile Health Van. It is pertinent here to note that the services provided by the health Vans at the doorsteps not only save their precious time but also help them financially.



**DR PALLVAI CHANNA, PROJECT LEAD, WOCKHARDT  
FOUNDATION**

This project started in Aliyal, Tamilnadu in 2012. Careful baseline surveys were conducted at the different locations before the initiation of the project. Priority was given to areas with difficult terrains inhabiting tribal and marginalized communities. The majority of the patients accessing our services are migrant industrial laborers as we are operating around different industrial areas.



## Effectiveness of the Medical Health Vans

The availability of free primary healthcare services through the Mobile Health Van has significantly improved access to healthcare for community members. An overwhelming majority of respondents (90.3 per cent) affirmed that they have experienced improved access to healthcare since the implementation of the Mobile Health Van project. This finding underscores the contribution of the Mobile Health Van in addressing barriers to healthcare access in rural habitations not fully catered by government machinery.

It is pertinent to note here that the services provided by the health Vans at the doorsteps not only save their precious time but also help them financially.

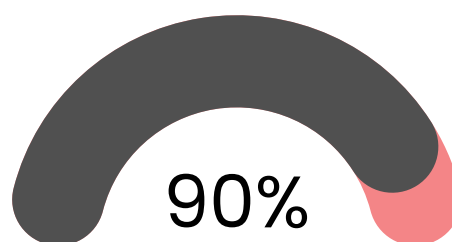


Fig- Improved access to healthcare

The Mobile Health Van Project has had a net positive impact on the lives of community members. When asked about the biggest impact of initiative, 27.4 percent of the respondents reported an improvement in access to healthcare services, suggesting that the Mobile Health Van has successfully addressed the healthcare needs of the community. This was followed by the 13 percent respondents for whom timely diagnosis of the diseases was the biggest impact, reflecting the role of the Mobile Health Van in early detection and management of health conditions. 6 percent of the respondents highlighted reduced expenses as the biggest impact. Most importantly, an overwhelming 54 percent of the respondents agreed to all of the following being the impacts of mobile health vans in their lives.

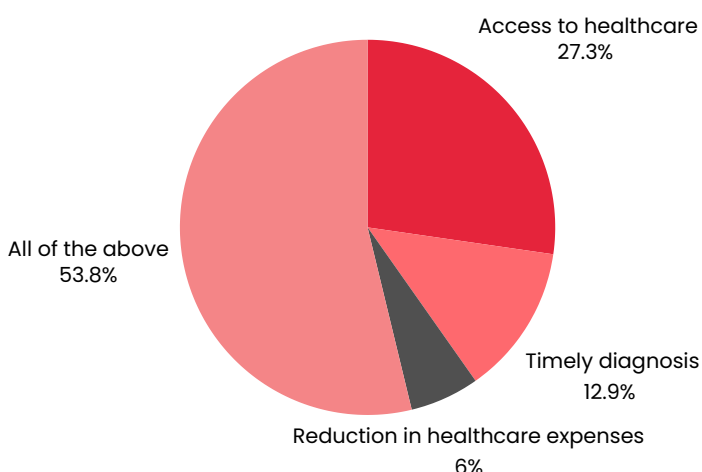


Fig- Major Impact of MHVs



## Healthcare awareness Programs

In rural areas, Health awareness initiatives serve as crucial platforms for disseminating vital information about preventive healthcare measures, hygiene practices, and disease management to rural communities. By raising awareness about common health risks, symptoms of illnesses, and available healthcare services. Healthcare awareness is an important aspect of the medical health van initiative.

When asked if the community members participate in any health awareness programs or educational sessions organised by the Mobile Health Van, 73.4 percent of participants responded positively. This high participation rate in health awareness programs underscores the importance and effectiveness of such initiatives in reaching and engaging with the community. By actively participating in these sessions, community members demonstrate their willingness to learn and adopt healthier practices, thereby contributing to improved health outcomes within the community.

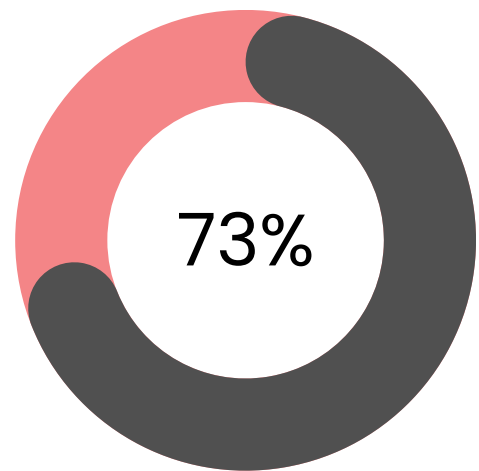


Fig- Participation in awareness activities

When asked if the awareness sessions improved their knowledge level regarding health related practices, an overwhelming 87.1 percent community members agreed. This highlights the transformative impact of education and awareness on health behaviors. By imparting accurate and actionable information on preventive healthcare measures, the Mobile Health Van is providing important knowledge and skills necessary to make informed decisions about their health.



Fig- Improvement in healthcare knowledge

The improved knowledge resulting from health awareness programs positively impacts health practices, demonstrating the tangible benefits of these initiatives in promoting healthier habits and behavior change. Approximately 94.3% of community members reported that MHV-led programs have enhanced their healthcare practices.

## CONCLUSION

Accessible healthcare is an essential human right that should be provided to every Indian. The AMM Foundation and Wockhardt Foundation's collaborative initiative has ensured accessible healthcare reaches underserved and marginalized communities. This report highlights the significance of the Mobile Health Van Project in addressing the challenges related to access to healthcare and improving health outcomes in rural India. At the outset, the regular and periodic availability of mobile health vans at the doorsteps of community members has led to a substantial improvement in access to healthcare for rural communities. By bringing essential medical services directly to the doorsteps of residents, the Mobile Health Van has effectively bridged the gap in healthcare provision, particularly for underserved populations.

With 90.3% of respondents reporting enhanced access to healthcare since the implementation of MHVs, it is evident that these mobile units have effectively addressed barriers to healthcare access. The findings of the impact assessment study affirm the critical role played by MHVs in improving healthcare access, promoting preventive healthcare practices, and enhancing the overall well-being of rural communities in India. By addressing the unique healthcare challenges faced by rural populations and empowering individuals to take care of their health, MHVs contribute significantly to bridging healthcare disparities and advancing the goal of universal healthcare coverage in the country.



## RECOMMENDATIONS

The following steps could be undertaken to further improve the effectiveness of the program and expand its benefit beyond the current geographical locations.

1

**Expand Outreach and Service Coverage:** Increase the frequency and duration of MHV visits to rural areas to ensure broader coverage and reach more underserved communities. Consider extending operational hours and deploying additional MHVs to accommodate the healthcare needs of a larger population,

2

**Strengthen Health Awareness Program:** Expand health awareness programs conducted by MHVs to increase community engagement and promote preventive healthcare practices. Utilize innovative approaches such as interactive workshops, and educational materials to disseminate information.

3

**Collaborate** with local stakeholders, government agencies, and other NGOs to optimize resources, improve sustainability, and maximize the impact of the Mobile Health Van intervention.

# **HEALTH CARE SERVICES FOR THE RURAL COMMUNITY AND HYDROGEOLOGICAL STUDY TO MAP WATER BODIES IN AND AROUND OONAIYUR**

- **AMM HOSPITAL-PALLATHUR**
- **AMM ARUNACHALAM HOSPITAL**
- **PROJECT NANNER**

# AMM HOSPITAL-PALLATHUR

## INTRODUCTION

Established in 1924 by Dewan Bahadur A M Murugappa Chettiar, AMM Hospital stands as one of the longstanding healthcare facilities in Pallathur, situated within the Sivaganga district. Its inception aimed to provide accessible medical services to the vast underserved population of the region. Irrespective of social or economic status, all patients receive high-quality care at this institution.



The AMM Foundation, in collaboration with Cholamandalam, has spearheaded the expansion efforts of the hospital, aiming to enhance its services for the community. This initiative included the addition of advanced diagnostic facilities such as CT scans, digital X-rays, and specialized treatments like physiotherapy. Additionally, the expansion project focused on increasing bed capacity, improving infrastructure for patient registration, and addressing issues like electricity supply to ensure uninterrupted services.



A PHC catering within a radius of 15 km from Pallathur, Sivagangai



₹ 387.98 lakhs



6000 patients a month are provided with free medical care & basic diagnostic services

## Obectives

1. Assess the impact of the hospital's expansion on healthcare accessibility and utilization.
2. Evaluate the effectiveness and sustainability of expanded facilities and identify any areas for further improvement in hospital infrastructure and service provision.

## Rationale

The impact assessment study evaluates the effectiveness of AMM Hospital's expansion in addressing community healthcare needs by analyzing demographic data, healthcare-seeking behavior, and the outcomes of expanded services.

## Research Design

The research methodology comprised of conducting 2 Key Informant Interviews (KIIs) with Medical Officers, 1 KII with Administrative Staff, and 1 with Assistant Chief Medical Officer staff, alongside observational methods to evaluate the impact of AMM Hospital's expansion. These KIIs allowed for gathering insights from hospital staff, while observations provided a direct understanding of service utilization and patient care processes. By triangulating these data sources, a comprehensive analysis was conducted to assess the expansion's effects on community healthcare.



## FINDINGS

The findings of the study shed light on the tangible impacts of AMM Hospital's expansion on community healthcare provision. Through Key Informant Interviews (KIIs) with hospital staff and direct observations, crucial insights emerged regarding the effectiveness of the expanded services, patient care processes, and overall healthcare accessibility within the community. This summary offers a glimpse into the key findings that will be discussed in detail in the following sections.

Fig. Community Medical Needs

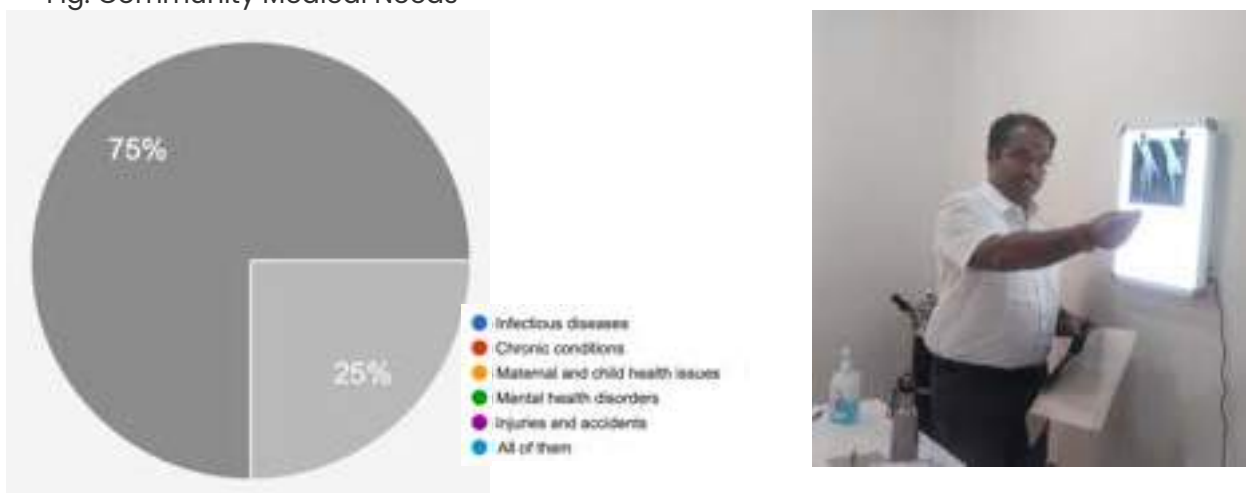


Fig. Pre-Expansion Bed Capacity

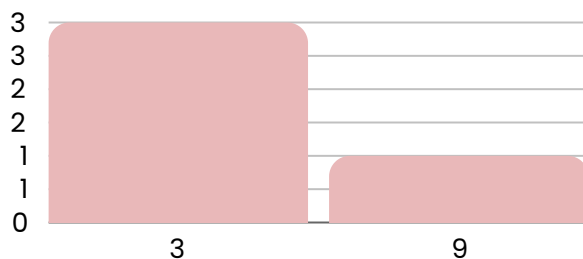
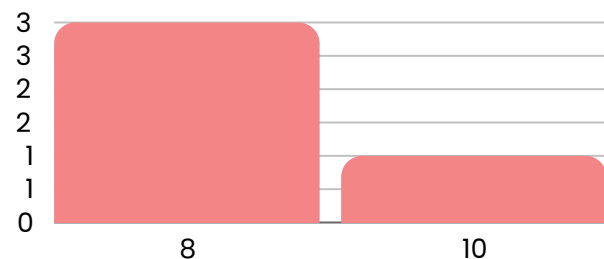


Fig. Post-Expansion Bed Capacity



**100%**

The unanimous agreement on a significant increase suggests a widespread acknowledgment of the expansion's positive impact on the hospital's capacity to serve the community. This indicates a promising outlook for improved healthcare accessibility and quality in the region.

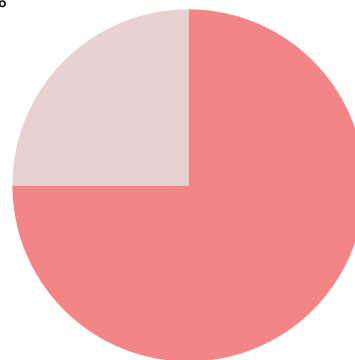




Again, the unanimous agreement among respondents indicates a high level of confidence in the positive impact of the hospital expansion on its ability to meet the healthcare needs of the community.

The majority of respondents reported a significant improvement in the health of nearby communities from the Sivangangai & Pudukkottai districts, suggesting positive impacts from healthcare interventions or services provided by the hospital expansion. However, a minority noted only a moderate improvement, indicating some variability in the perceived effectiveness of the healthcare initiatives.

Moderate improvement  
25%



Significant improvement  
75%

Fig. Assessing Health Trends in Nearby Sivangangai & Pudukkottai Districts



75%

were repeating visitors to the hospital, indicating a notable rate of returning patients seeking continued medical care or follow-up treatments.

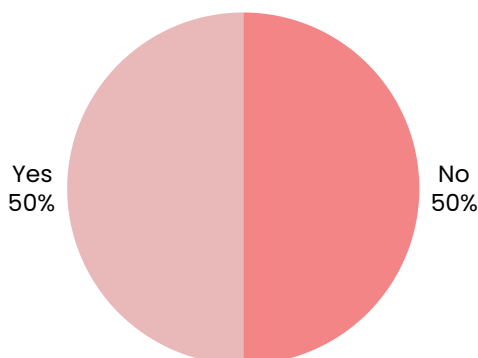


Fig. Impact of Biochemistry Lab, X-ray, and ECG Facilities on Patient Care

All key informant interviews unanimously reported a positive trend in the diagnosis potential of the hospital following the installation of the biochemistry lab, X-ray, and ECG facilities. This indicates a significant enhancement in the hospital's diagnostic capabilities, allowing for more accurate and efficient patient evaluations. The introduction of these facilities has not only improved the quality of healthcare services but also contributed to better patient outcomes.

**DR. GAYATHRI, A MEDICAL OFFICER AT AMM HOSPITAL  
FOR 3.5 YEARS**

I've observed diverse medical needs within our community, primarily from low socioeconomic backgrounds. The decision to construct a new block aimed to enhance diagnostic approaches, adding advanced services like computerized tomography (CT) scans. Despite challenges with the CT scan functionality, our expanded facilities have notably improved our diagnostic capabilities. Looking ahead, scaling up our program involves enhancing infrastructure and incorporating additional diagnostic services like MRI scans.

**DR. KASTHURI RAJA, A 26-YEAR-OLD MEDICAL OFFICER  
AT AMM HOSPITAL FOR 3.5 YEARS**

Within our community, patients, primarily from low socioeconomic backgrounds, travel an average of 30 minutes for treatment. Our decision to construct a new block aimed to enhance diagnostic approaches, adding services like computerized tomography (CT) scans. Before expansion, the hospital offered X-rays and laboratory services, primarily catering to dermatology, ENT, and orthopedics. Post-expansion, the hospital now has eight beds and handles around 230 fresh cases weekly. Referral cases from Pallathur Women's Health Center mainly comprise chronic conditions, with 50% being repeat patients. The installation of advanced diagnostic facilities like CT scans has notably improved services.



**C. TITUS CHARLES, AN ADMINISTRATIVE OFFICER AT AMM HOSPITAL FOR THE PAST SIX YEARS**

Our focus has been on providing extra healthcare facilities, particularly for chronic conditions. With the addition of medical infrastructure like CT Scan, digital X-ray, and modern diagnostic lab equipment, along with specialized treatments such as physiotherapy, we've received a positive response from the public.

We offer medicines free of cost and charge nominal fees for diagnostic procedures. Our hospital specializes in diabetic treatments, as well as treatments for upper respiratory infections (URI). Additionally, we provide advanced diagnostic services such as MRI, echocardiography (ECHO), ultrasound (US), and special physiotherapy treatments.

Our hospital receives around 30 cases weekly from Pallathur Primary Health Center (PHC), with a significant portion seeking treatment for chronic conditions. We've observed a high cure rate and received positive feedback, indicating a significant improvement in our services.

While we have seen an increase in the number of patients seeking treatment due to the provision of free treatment and improved diagnosis accuracy, there is still room for enhancement. We aim to further increase our diagnostic capabilities by adding eye equipment, MRI, Doppler, and additional manpower.

To support our continued success, we plan to implement awareness programs focusing on cervical screening, eye testing, dental care, and medical camps for diabetes and cancer. With effective continuation of our existing services, we are confident in maintaining our positive trajectory.

**DR. GAYATHRI, A MEDICAL OFFICER AT AMM HOSPITAL FOR 3.5 YEARS**

I oversee our services catering to communities within a 15-100 km range, mainly comprising below poverty line (BPL) individuals. The decision to expand our facilities was prompted by increased patient numbers and the urgent need for enhanced healthcare provisions. Previously, our diagnostic offerings included basic tests like ECG, X-ray, biochemistry, and hematology, with nominal charges of Re.1. Post-expansion, we've incorporated advanced diagnostic tools such as CT scan and digital X-ray, along with specialized hematology and biochemistry tests. Our bed capacity has increased from three to eight.

Referrals from Pallathur Primary Health Center (PHC) average 15-45 cases weekly, totaling 350-400 patients. Expansion has amplified our reach and treatment quality, resulting in a significant surge in patient numbers and service enhancements. Approximately 40-45% of our patients are returning, indicating growing trust and satisfaction.

# Analysis

Our analysis unveils the transformative impact of AMM Hospital's expansion, highlighting improved diagnostic capabilities, heightened patient satisfaction, and a surge in healthcare accessibility for underserved communities.

## Community Medical Needs and Decision to Expand:

- The community served has diverse medical needs, predominantly from low socioeconomic backgrounds.
- The decision to construct a new block was driven by the aim to enhance diagnostic approaches, particularly by adding advanced services like computerized tomography (CT) scans.

## Impact of Expansion on Diagnostic Capabilities:

- Despite initial challenges with CT scan functionality, the expanded facilities have significantly improved diagnostic capabilities.
- The addition of advanced diagnostic facilities like CT scans has notably enhanced service delivery.

## Hospital Services and Patient Demographics:

- Before expansion, the hospital primarily offered X-rays and laboratory services, focusing on dermatology, ENT, and orthopaedics.
- Post-expansion, the hospital now accommodates eight beds and handles around 230 fresh cases weekly, primarily from patients of low socioeconomic backgrounds.

## Referral Patterns and Treatment Focus:

- Referral cases from the Pallathur Women's Health Center mainly consist of chronic conditions, with 50% being repeat patients.
- The hospital specializes in diabetic treatments and treatments for upper respiratory infections (URI), alongside providing advanced diagnostic services such as MRI and echocardiography.

## Response to Expanded Services:

- The provision of medicines free of cost and nominal fees for diagnostic procedures has received a positive response from the public.
- There has been a high cure rate and positive feedback from patients, indicating a significant improvement in services.



## CONCLUSION & RECOMMENDATIONS

The expansion of AMM Hospital enlightens the fact that the focus of the program is to make healthcare services, particularly for underserved communities, accessible. With the addition of advanced diagnostic capabilities such as CT scans, the hospital has vastly improved diagnostic service delivery, meeting the diverse medical needs of its predominantly low socioeconomic patient demographic. This expansion has not only enhanced diagnostic accuracy but also facilitated timely and targeted treatments, especially for chronic conditions like diabetes and upper respiratory infections. The encouraging response from the community, coupled with high cure rates and patient satisfaction, underscores the success of the hospital's decision to expand and its unwavering commitment to providing accessible and high-quality healthcare to all.

### RECOMMENDATIONS:

Based on the feedback, the following recommendations are suggested:

1

Provide mobile vans and/or mobile diagnostic services for community members who cannot access the AMM hospital because of distance or critical health conditions.

2

Digitize administrative processes (such as patient record-keeping and management), along with the installation of additional ICT/computers should be adopted.

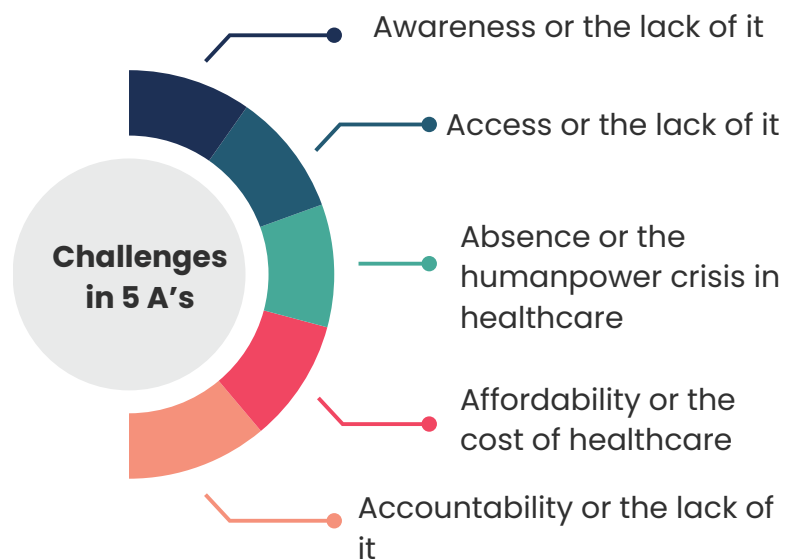
3

To ensure the sustainability of the new block and its services, the hospital should develop a comprehensive maintenance plan. This plan should include regular equipment inspections, timely repairs, and staff training to address technical issues promptly. Additionally, allocating resources for backup power sources can help mitigate electricity problems and ensure uninterrupted service delivery.

# AMM ARUNACHALAM HOSPITAL

## INTRODUCTION

The Alma Ata Declaration, endorsed by 134 countries, advocated for 'health for all' through primary health care, emphasizing accessibility, affordability, and community participation. It aimed to provide essential healthcare services based on practical, scientifically sound, and socially acceptable methods, ensuring universal access near people's homes at every developmental stage.



In India, the healthcare landscape exhibits stark contrasts, ranging from modern, sophisticated facilities catering to urban elites to under-resourced, struggling outposts in remote areas (Kasthuri, 2018). Seventy per cent of hospitals and 85% of hospital beds are located in urban areas, leaving the majority rural population underserved in terms of public health services (Rushender et al., 2016)

Despite alignment with national policy, concerns remain regarding the utilization of rural medical services, emphasizing the necessity to address local needs and barriers. In response, Chola and AMM collaborated to establish the AMM Arunachalam Hospital in 2000 at Nellikuppam in Cuddalore District, aiming to deliver quality healthcare to underprivileged communities.





## Objectives

1. Evaluate the accessibility and convenience of reaching the hospital by examining patients' perceptions of travel distance and encountered challenges in accessing healthcare services.
2. Assess the quality of patient-provider communication and satisfaction with the treatment process by analyzing responses regarding the clarity of information provided, addressing of concerns, and overall treatment experience.
3. Assess the alignment and effectiveness of AMM Hospital's CSR initiatives in addressing community healthcare needs and supporting the hospital's objectives.
4. Identify any gaps and recommend strategies for enhancing CSR efforts to better serve the targeted communities.

## Rationale

This study aims to evaluate the accessibility, communication effectiveness, and alignment of CSR initiatives of AMM Hospital to enhance healthcare delivery and address community needs efficiently.

## Research Design

A mixed-method approach was employed, utilizing both quantitative and qualitative methods to comprehensively explore the research objectives. The sample selection involved a combination of cluster sampling and convenience sampling techniques. A cluster sampling method was used to select representative clusters of participants, while convenience sampling facilitated the inclusion of participants easily accessible to researchers.

The survey component consisted of a sample size of 10 participants, selected through convenience sampling. Additionally, one in-depth interview (IDI) was conducted with a hospital staff member to gain insights into their experiences and perspectives regarding healthcare delivery and community engagement.

Ethical considerations were strictly adhered to throughout the study, ensuring confidentiality, voluntary participation, and informed consent.



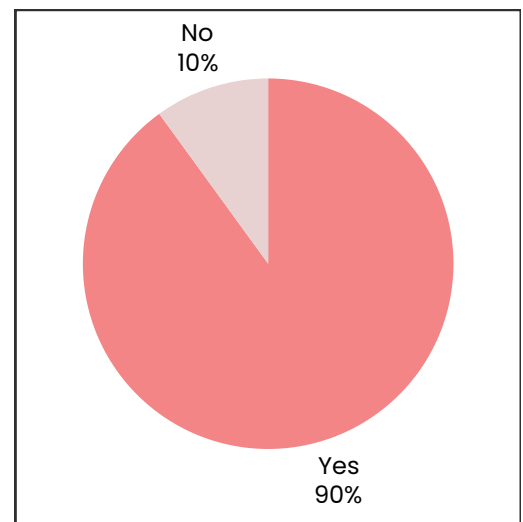
## FINDINGS

This finding shows the patient accessibility, satisfaction, and the effectiveness of AMM Hospital's CSR initiatives to address community healthcare needs, identifying gaps and recommending enhancement strategies. The average of the participants in this study was 39.5 years.

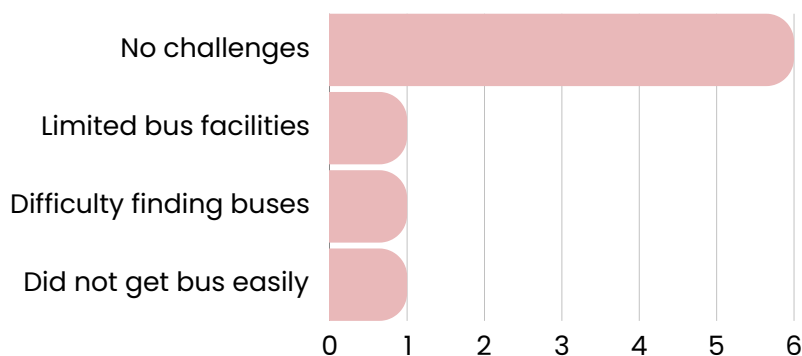


Seven out of ten participants were male.

The adjacent figure shows that the majority of participants (9 out of 10) have visited the hospital before, indicating a high level of familiarity with the healthcare facility. This suggests that the hospital has likely established a strong presence within the community and has been frequently utilized by the participants for their healthcare needs. The presence of repeat visits may also imply a certain level of satisfaction or perceived effectiveness of the hospital's services, prompting individuals to return when in need of medical attention.

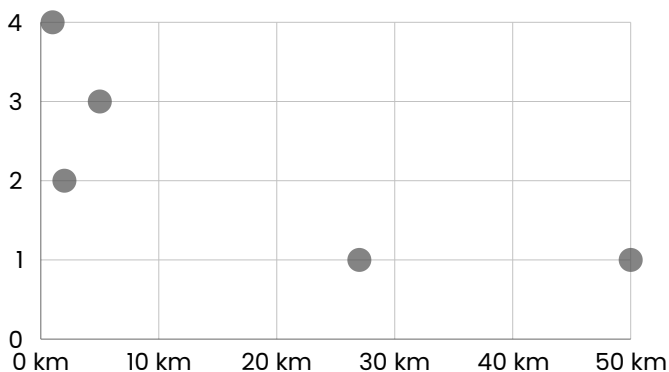


Ailments treated: Fever, Diabetes, Joint pain  
Low-cost treatment  
Proximity to home  
Dialysis process  
Dialysis process dissatisfaction at another hospital  
Satisfaction with treatment quality

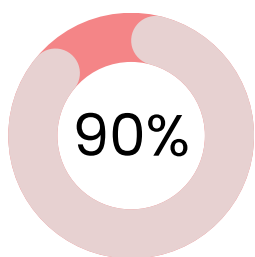


Challenges in Accessing the Hospital

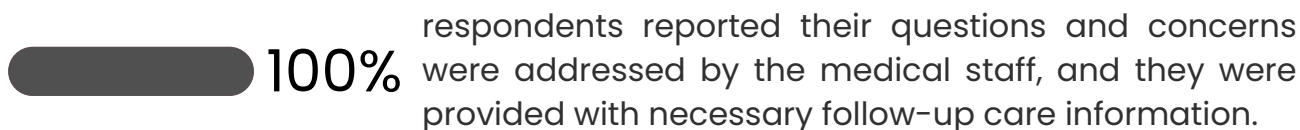
The majority of participants (67%) reported no challenges in accessing the hospital, while a minority cited issues such as limited bus facilities or difficulty finding buses.



The hospital serves predominantly local population, as the majority of respondents reside within a 5-kilometer radius. This suggests that the hospital is conveniently located for the community, potentially enhancing access to healthcare services.



patients expressed high satisfaction with the communication provided by the hospital staff, indicating effective communication practices. This suggests that the hospital staff effectively meet patients' communication needs, contributing to overall positive experiences.



respondents reported their questions and concerns were addressed by the medical staff, and they were provided with necessary follow-up care information.

The hospital staff demonstrates attentiveness and effectiveness in addressing patient queries, fostering trust and satisfaction. The provision of follow-up care information indicates a commitment to comprehensive patient care and treatment continuity, enhancing overall patient experience and outcomes.

80% of patients shared that the diagnosis information provided was "very clear", indicating effective communication and understanding of medical information among the patients.



“——

Overall treatment process was good. I have to pay money in another hospital for dialysis, here I am getting it free of cost. I came here very tired, I need someone to take care. Now I can go alone to my home.

Patient,  
49-year-Old  
Excessive Fatigue Patient

“——

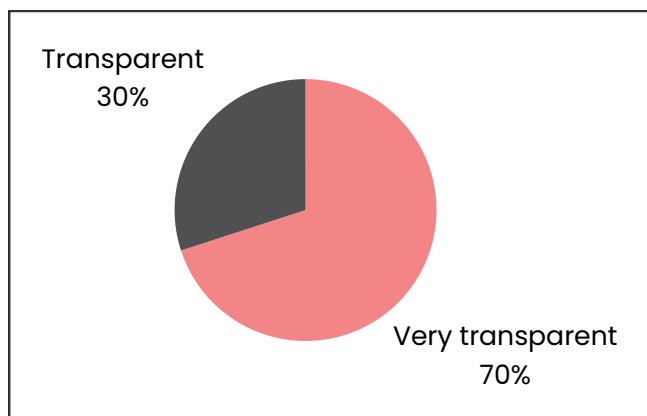
I am getting good treatment at very low cost. We pay only Rs.10 for consultation.

Patient,  
56-year-old  
Diabetese Patient

“——

Treatment was good and doctors are well experienced. Medicines are effective and low cost.

Patient,  
35-year-old  
Joint Pain Patient



80% of patients shared that the diagnosis information provided was “very clear”, indicating effective communication and understanding of medical information among the patients.



The average satisfaction rating for the overall hospital experience was 4.6 out of 5.

#### **NARAYANASWAMY, ADMIN OFFICER AT AMM HOSPITAL**

Our hospital, under the vision of the AMM Foundation, aims to provide essential healthcare services at low cost as part of our broader social services initiative in health, education, and water management. Our consultation fees are a mere Rs 10, while an X-ray costs Rs 350, ensuring affordability for all.

We are proud to say that our CSR support effectively addresses our aim, particularly in catering to patients suffering from diabetes, high blood pressure, and general health issues. Moreover, we offer specialized treatments through visiting doctors in orthopaedics, dentistry, ENT, pulmonology, paediatrics, and nephrology. In terms of our patient demographics, while our doors are open to all, the majority of our patients hail from low and middle-class backgrounds. Our hospital offers a wide range of diagnostic services, including general medicine, nephrology, dialysis, dentistry, orthopaedics, and ENT.

Our commitment to serving the community extends beyond the hospital walls. We conduct medical health camps in rural villages, addressing the specific needs of the villagers. Collaborating with NMCT, we have covered ten villages in the past three months and also organized separate health camps for physically challenged individuals. Despite being just eight months into my tenure, I have witnessed a noticeable change in the health of the communities we serve. Patients are increasingly turning to us for treatment, driven by the belief that they will receive quality care at an affordable cost.

One of the most significant impacts of our intervention is the elimination of the need for patients to travel long distances for medical care. Previously, patients had to travel up to 10 km to reach another hospital in Cuddalore or Pondicherry, both government facilities. Now, they receive treatment right in their village, saving both time and money. Looking ahead, I believe that scaling up our outreach efforts and increasing awareness among community members will further enhance our impact and ensure that more individuals benefit from our services.

## Overall Analysis

AMM Arunachalam Hospital, founded with a dedicated focus on delivering equitable and high-quality healthcare services to marginalized populations, epitomizes a beacon of hope by offering an extensive spectrum of medical interventions and specialized treatments tailored to cater to varied health exigencies.

1. **Comprehensive Care:** Offers a holistic approach to patient care by providing a wide range of medical specialties and diagnostic services under one roof.
2. **Community Impact:** This plays a crucial role in improving the health outcomes and well-being of the local community by addressing their healthcare needs effectively.
3. **Patient-Centered Approach:** Prioritizes patient needs and preferences, ensuring personalized care and fostering a supportive healthcare environment.
4. **Quality Standards:** Maintains high-quality standards in medical care, infrastructure, and service delivery to uphold patient safety and satisfaction.
5. **Feedback Mechanism:** Utilizes patient feedback to identify areas for improvement and implement changes that enhance the overall healthcare experience.
6. **Continuous Learning:** Emphasizes ongoing staff training and development to stay updated with the latest medical advancements and provide cutting-edge treatment options.
7. **Collaborative Partnerships:** Engages in collaborations with other healthcare providers and organizations to expand access to specialized services and resources.
8. **Health Education Initiatives:** Conducts health education programs and outreach activities to empower patients with knowledge and promote preventive healthcare practices.
9. **Technology Integration:** Leverages technology for efficient healthcare delivery, including electronic health records, telemedicine services, and digital diagnostic tools.
10. **Ethical Practices:** Adheres to ethical principles and professional standards in all aspects of healthcare delivery, ensuring integrity and trustworthiness.
11. **Sustainability Efforts:** Implements environmentally sustainable practices and resource management strategies to minimize the hospital's ecological footprint and contribute to environmental conservation efforts.

## CONCLUSION

Respondents highlights a high level of satisfaction with the hospital's services, particularly in terms of communication, transparency of the billing process, and overall treatment experience. The majority of respondents reported positive experiences, including effective communication from the medical staff, transparent billing procedures, and satisfactory treatment outcomes. However, some suggestions for improvement were made. One of the key suggestions was appointing more doctors to address patient needs effectively. Overall, the data suggests that the hospital is performing well in providing quality healthcare services to its patients, with areas for further enhancement identified to continue meeting patient expectations and improving healthcare delivery.

## RECOMMENDATION

Based on the feedback, the following recommendations are suggested:

1

To cater to gynaecological issues, the hospital should assign a permanent gynaecologist to the hospital along with a few visiting specialists to address pregnancy cases too.

2

Improve the pharmacy department's efficiency to ensure the availability of medications and minimize the need to seek them outside the hospital.

3

Extending hospital operating hours to provide round-the-clock medical services and enhance accessibility for patients, while also ensuring seamless transfer of medical records to other healthcare facilities for emergency purposes.

4

Enhancing Reporting Standards: Automate the blood test report by adoption of digital reporting methods to enhance record keeping should be put in practice.

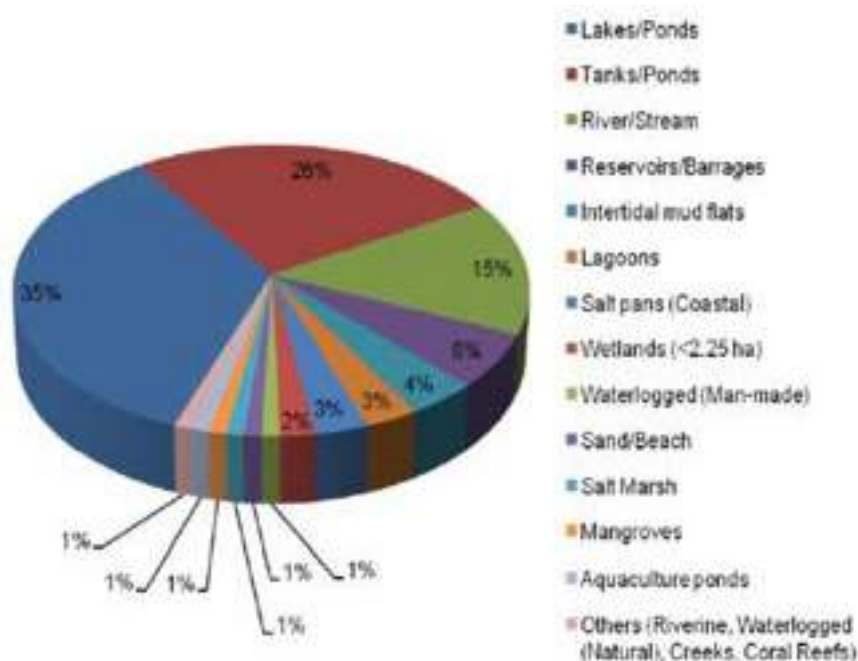
# PROJECT NANNNEER

## INTRODUCTION

Any loss of biodiversity impacts the ecosystem which in turn poses a threat to society of living being, and economy and catalyses the emergence of infectious diseases (UNEP 2020). One of the hotspots of biodiversity are Ponds that collectively support far more species, including rare and threatened species than other freshwater habitats (Indermuehle et al., 2018; Oertli and Parris, 2019).

Any loss of biodiversity impacts the ecosystem which in turn poses a threat to society of living being, and economy and catalyses the emergence of infectious diseases (UNEP 2020). One of the hotspots of biodiversity are Ponds that collectively support far more species, including rare and threatened species than other freshwater habitats (Indermuehle et al., 2018; Oertli and Parris, 2019).

In India, the disappearance of 80,128 ponds and tanks during the period of 2006–2007 led to the forfeiture of irrigation capabilities across 1.95 million hectares (MoJs, n.d.). The decline in ponds poses a significant risk to the water and food security of developing nations, especially given that freshwater bodies cover less than 1.4% of the land in these countries, compared to 3.5% in developed nations (UNESCO, 2018). Tamil Nadu has the maximum number of lakes in India (Tol, 2023).



Source: <https://www.tnswa.org/wetlands-of-tamil-nadu>

To aid in the restoration of water bodies in Tamil Nadu, Chola Mandalam partnered with the AMM Foundation to assist seven water bodies in the state. The AMM Foundation and Parry Nutraceutical Ltd, in collaboration with Siruthuli, have initiated a project aimed at revitalizing water bodies in and around Oonaiyur. These are :



Sr. No	Name of the Study	Location
1	Oonaiyur Drinking pond	Oonaiyur
2	Oonaiyur Lake	Oonaiyur
3	Pannangudi tank	Panangudi
4	Vadakudipatti Drinking water pond	Vadakudipatti
5	Vadakudi Kammai	Vadakudipatti
6	Kadiyapatti Lake	Kadiyapatti Panchayatt
7	Rayer Kammai	Oonaiyur



## Research Objectives

1. Assess the effectiveness of the Siruthuli rejuvenation project in promoting community engagement and participation among PRI members and community stakeholders.
2. Investigate the perceived impact of the Siruthuli project on water conservation and tree plantation initiatives within the local community, focusing on changes in behavior, attitudes, and environmental awareness.
3. Examine the collaboration dynamics between Siruthuli, local authorities, NGOs, and other stakeholders to identify key success factors and challenges in implementing Project Nanneer for water body rejuvenation and tree plantations.

## Rationale

This study aims to assess community engagement, evaluate the impact on water conservation and tree plantation, and explore collaboration dynamics in the Siruthuli rejuvenation project. By understanding these aspects, the research seeks to inform decision-making for sustainable environmental management in Tamil Nadu.



## Research Design

The research design employed is explanatory, employing a qualitative methodology. The sample size includes one IDI with a community member, two key informant interviews with PRI members and one with project staff.

## FINDINGS

The findings of five IDIs are presented hereby in the narrative form.

### **MURUGAN, 45-YEAR-OLD RESIDENT VILLAGE-PANAGUDI, DISTRICT-PUDUKKOTTAI**

I first learned about the water rejuvenation project through the ongoing work in neighbouring villages. It was evident that our old lake, Maiyadi Amman Kovil Oorani, struggled to store water efficiently, leading to immediate overflow during rains. This realization prompted me to support the project.

The project team engaged us through various meetings and discussions before commencing civil work. Despite delays caused by rain, our involvement in sharing ideas and preferences regarding the Kanmai-related work demonstrated our commitment to the project's success.

Now, with the rejuvenation efforts underway, I've noticed significant changes. The lake, once prone to drying up in summer, now retains water, offering hope for sustained agricultural activities and improved biodiversity. Additionally, the initiative has empowered our community, as evidenced by the collective effort to obtain permissions and address challenges.

Looking ahead, I believe there's more to be done. I advocate for deepening other old lakes to prevent overflow and suggest planting more trees for environmental sustainability. I'm grateful to Sirutuli NGO and AMM Foundation for their invaluable contributions and urge for continued support in fencing other ponds. Overall, my experiences with the rejuvenation project have been positive.



**K. SHANMUGAM, A 47-YEAR-OLD WARD MEMBER IN  
KADIYAPATTI PANCHAYAT, VILLAGE- PANAGUDI**

I have been serving in the Panchayati Raj system for four years. My involvement in the lake restoration project stemmed from community meetings where the issue of water scarcity was raised. The initiative was brought to our attention by a non-governmental organization (NGO), emphasizing the urgent need for restoring local water bodies like Oorani for agricultural purposes.

Recognizing the critical need for lake restoration in our village, primarily for agricultural use, I actively supported and facilitated the project's implementation. This involved obtaining approvals from relevant authorities and collaborating with local youth for fieldwork. Despite encountering delays due to weather conditions, such as unexpected rainfall, our collective efforts persisted.

The project's impact on agricultural activities in our Panchayat has been significant, allowing for two crops per annum due to increased water availability from restored water bodies. Furthermore, there has been a noticeable improvement in groundwater levels, benefiting both agricultural and domestic water needs.

Observing an increase in biodiversity around the restored water bodies, including the influx of birds and animals, underscores the project's ecological restoration aspects. Villagers now utilize the restored water bodies primarily for agricultural purposes, ensuring sustained livelihoods and environmental conservation.

Looking ahead, I envision long-term benefits from the project, including enhanced agricultural productivity and improved water security for future generations. Collaborations between the Panchayat and organizations like the AMM Foundation hold potential for further environmental conservation initiatives, such as tree plantation programs, ensuring sustainable development.

**K. SHANMUGAM, A 47-YEAR-OLD WARD MEMBER IN  
KADIYAPATTI PANCHAYAT, VILLAGE- PANAGUDI**

I've served in the Panchayati Raj system for four years. My awareness of the lake restoration project came from local community meetings, where discussions on Oorani rejuvenation underscored the need to address water scarcity.

Recognizing the urgency, I actively engaged in problem-solving discussions and partnered with an NGO to initiate rejuvenation work for local lakes. This proactive approach has boosted water levels, benefiting agriculture and raising awareness among villagers. Despite challenges like rainfall delays, the project enabled two-time cropping and improved water availability from borewells and lakes. Efforts are ongoing to create sanctuaries for biodiversity enhancement.

Looking forward, collaboration on additional lake restoration projects holds promise for environmental conservation and sustainable development. The partnership between PRI and environmental stakeholders reflects our commitment to addressing local challenges together.

**BHARATHI BALAN, ENVIRONMENTAL DEPARTMENT  
HEAD AT AMM FOUNDATION**

I've been integral to Project Nanneer's journey since its inception seven years ago. Initiated during the challenging times of the COVID-19 pandemic, Project Nanneer aimed to address the pressing issue of water scarcity in our region. Guided by our CEO, Muthu Murugan, and recognizing the critical role of water in our communities, we embarked on a mission to rejuvenate local water bodies and promote sustainable tree plantations.

My responsibilities encompassed conducting social surveys to assessing the technical feasibility of lake dredging. Each lake presented unique challenges, requiring innovative solutions such as creating artificial islands to utilize excess soil effectively. Through ground-level studies and digital surveys, we devised strategies to enhance water retention and mitigate excess runoff.

Community engagement was crucial to our success. By involving local residents in project planning and execution, we ensured a sense of ownership and collaboration. Notable success stories emerged as villagers actively supported our endeavours, ensuring smooth project implementation despite challenges from external disruptions. Collaboration with Sirutuli NGO, renowned for its freshwater conservation efforts, accelerated our project's credibility and effectiveness. Despite unexpected climate fluctuations, we remained flexible, adapting our approach to optimize outcomes and ensure sustainability.

By deepening lakes and maximizing rainwater harvesting, we witnessed tangible improvements in water availability and ecosystem health. Looking ahead, we envision further innovations, such as island creation to support wildlife and bird populations, indicating our commitment to holistic environmental stewardship. Above all, our experiences with Project Nanneer have transformed community perceptions, earning their trust and respect.

**SANJITHA RAJEEV, WORKING WITH AMM SINCE 13  
YEARS**

In Project Nanneer, we witnessed rapid transformation. By de-silting the lakes, once mere football grounds, we brought joy to the community. Despite a rainless year, these water bodies sustained, enabling farmers to cultivate twice annually. Monitoring water tables via borewells affirmed our impact. Additionally, biodiversity flourished in Sivagangai, with over 100 bird species, including rare ones, flocking to the rejuvenated habitats. In Kanakamai, a woman shared a poignant testament to our impact. She expressed relief that this rainy season brought peaceful sleep without fear. Previously, their homes were inundated, forcing them to evacuate.

Despite challenges of bureaucracy and encroachment, our partnerships ensure sustainability and growth, bridging theory with action. One of our Murugappa scholars also got firsthand how integrating practical experience with ecological studies. Overall, Project Nanneer's success is not just in infrastructure but in empowering communities and nurturing lasting partnerships for a resilient future. It's a journey of transformation that reaffirms the power of collective action in shaping a brighter tomorrow.

# Analysis

## Need of the project:

The necessity for the lake restoration project can be delineated into several critical facets:

1. **Enhancement of Water Storage Capacity:** The existing deficiency in the lake's ability to retain water adequately, leading to premature overflow during rainfall, underscores the imperative to augment its storage capacity. Restoration becomes imperative to bolster the lake's capability to hold water effectively, thus mitigating overflow issues.
2. **Agricultural Sustenance:** Given the region's heavy reliance on rainwater for agricultural activities, the lake serves as a pivotal reservoir for collecting and storing this vital resource. Thus, ensuring the lake's health and capacity is essential for sustaining agricultural productivity in the area.
3. **Livestock Water Supply:** Beyond agricultural needs, the lake plays a crucial role in providing essential drinking water for livestock, thereby supporting the local community's livelihood. Guaranteeing the lake's capacity to store and furnish clean water is indispensable for the well-being of livestock.
4. **Optimization of Rainwater Harvesting:** With rainwater serving as the primary water source, optimizing the lake for efficient rainwater collection and utilization is paramount. The restoration initiative aims to enhance the lake's functionality as a rainwater harvesting system, catering to both agricultural and livestock requirements effectively.
5. **Preservation of Ecosystem and Biodiversity:** The restoration endeavour extends beyond addressing immediate water storage and usage concerns; it also contributes to preserving the local ecosystem and biodiversity. A rejuvenated lake sustains a diverse array of flora and fauna, fostering ecological equilibrium and longevity.

In essence, the lake restoration project is indispensable for fortifying water storage capacity, accelerating agricultural and livestock support, optimizing rainwater harvesting, and conserving the local ecosystem and biodiversity. It addresses both immediate necessities and long-term sustainability imperatives for the community and the environment.

## Community Engagement for Vadagudipatti Lake Restoration:

A robust community engagement strategy is fundamental for the successful implementation of the Vadagudipatti Lake restoration project. This strategy encompasses various components aimed at fostering active involvement and support from the local community:

1. **Organizing Community Meetings:** These meetings serve as crucial platforms to introduce project objectives, activities, and benefits to the local population. They encourage open dialogue, allowing community members to express concerns, seek clarifications, and offer suggestions.
2. **Awareness Campaigns:** Alongside community meetings, awareness campaigns are conducted to educate residents about the significance of lake restoration, its environmental implications, and the anticipated benefits in terms of water availability for agriculture and drinking purposes.
3. **Local Representation and Involvement:** Appointing a local villager as a representative at the restoration site helps bridge the gap between the project team and the community. This ensures prompt addressing of queries or concerns from newcomers or visitors, minimizing misunderstandings and disruptions.
4. **Community Support in Operations:** Encouraging direct involvement of villagers in restoration activities, such as assisting workers or providing logistical support, fosters a sense of ownership and responsibility towards the project. This hands-on participation strengthens community support and facilitates smoother project execution.
5. **Collaboration with Panchayat Leaders:** Engaging with Panchayat leaders and seeking their support for necessary approvals, such as those from the Public Works Department (PWD), underscores the importance of local governance in project success. Their endorsement expedites official processes and enhances project credibility.
6. **Continuous Communication:** Maintaining transparent communication channels throughout the project duration ensures the community remains informed about progress, changes, and opportunities for continued contribution. Regular updates through follow-up meetings, community gatherings, or informal interactions foster a sense of inclusivity.
7. **Feedback and Adaptation:** Establishing mechanisms to collect feedback from the community enables the project team to address concerns, make necessary adjustments, and refine strategies based on local insights and preferences.

## Overall Impact

### 1. Community Engagement and Participation:

- All interviewees highlight the importance of community involvement in the project. They mention attending meetings, sharing ideas, and collaborating with local residents and organizations to ensure the success of the rejuvenation efforts.
- Community engagement is not only seen as essential for project implementation but also for fostering a sense of ownership and responsibility towards the water bodies among villagers.

### 2. Project Impact and Benefits:

- Participants consistently mention the positive impacts of the rejuvenation project on water availability, agricultural activities, and biodiversity.
- Increased water retention in the lakes has allowed for sustained agricultural practices, including two-time cropping, thus improving livelihoods in the community.
- The restoration efforts have also led to noticeable improvements in groundwater levels, benefiting both agricultural and domestic water needs.
- Observations of increased biodiversity around the restored water bodies indicate ecological restoration and highlight the project's broader environmental benefits.

### 3. Long-term Vision and Sustainability:

- The interviewees express a shared vision for the long-term sustainability of the project, emphasizing the need for continued collaboration and further environmental conservation initiatives.
- Suggestions for future actions include deepening other old lakes, planting more trees, and creating sanctuaries for biodiversity enhancement, reflecting a holistic approach towards environmental stewardship.
- Partnerships with NGOs and other stakeholders are recognized as crucial for realizing these long-term goals and ensuring the ongoing success of the rejuvenation efforts.

### 4. Leadership and Collaboration:

- Leadership, both within the community and through external organizations, plays a significant role in driving the project forward.
- Collaboration between various stakeholders, including local government bodies, NGOs, and community members, is highlighted as key to the project's success, indicating a collective effort towards addressing local water scarcity issues.





## RECOMMENDATIONS:

Based on the feedback, the following recommendations are suggested:

1

**Pre-Monsoon Planning and Administrative:** implement better planning by initiating projects before the monsoon season, facilitated by administrative support, to mitigate disruptions caused by rain and optimize project timelines.

2

**Community Action Groups:** Establish community action groups comprising volunteers from different segments of the community, including youth, women, and elders. These groups can be tasked with specific responsibilities related to the restoration project, such as organizing clean-up drives, conducting water quality tests, or monitoring wildlife habitats. Encourage regular meetings and collaboration among group members to foster a sense of ownership and collective responsibility for the project.



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# RESEARCH AND DEVELOPMENT ON SUSTAINABLE AGRICULTURAL PRACTICES

Funding Year: FY2022-23



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## **Data Source:**

- *Secondary data is obtained from Project MoUs/ Agreements, and Reports*
- *Primary data is gathered from IDIs of stakeholders i.e. Farmers, MCRC team member and Panchayat President*
- *Cover Page Photo: amm-mcrc.org*

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# EXECUTIVE SUMMARY

The CSR activities of Cholamandalam Investment and Finance Company Limited (Chola) have a considerable focus on assisting and empowering farmers. With their initiative of Research and Development on sustainable Agricultural Practices, CSR aims to raise awareness, assist, and equip small farmers in sustainable agriculture operations while also providing bio-agricultural inputs and knowledge.

The program has focused (not limited to) on raising awareness, providing biofertilizers, employing solar water pumps, solar dryer systems, and cold boxes, as well as awareness and employment of Farm Techniques like System of Rice Intensification (SRI) and Conservation Agriculture (CRA).

The activities of the initiative – Research and Development on sustainable Agricultural Practices align with SDGs 6, 7, and 12 and have a reach of 150 villages and 2094 farmers. The majority of the surveyed farmers were associated with the program for 4 or more years and primarily grew rice, abaca, and sugarcane.

Reduced usage of fertilizer, decreased pest incidents, increased soil fertility, yield, and income, and positive experiences with green toilets, water filters, and purifiers, as well as farm techniques PAAT, CRA, and SRI, were noted. The farmers have shown strong appreciation for the program and highly recommend it to other peer farmers.

Learning new farm techniques and better awareness about pesticides were quite often cited by the farmers, and they also express the need to address issues of unavailability of farm labor, uncertain climate, suggesting increased focus on climate-resilient practices. The farmers appreciate the benefits of the program but at the same time also express the need for increased access to training programs & practical learning, assistance in the adoption of newer techniques, technological tools and equipment, linkage to markets as well as financial incentives and subsidies.

# KEY INSIGHTS

## PROFILE

30 Farmers  
Ayan Kurinjipadi - 09  
Theradikuppam - 09  
Arangamangalam - 08  
Kuruvanpanpettai - 04

83.34% of farmers are aged  
40 years and above  
Median Age 48 Years

83.34% of farmers earn  
an annual income of  
2 lakh rupees or less  
Median Income INR 77.5K

84% of the farmers  
are small farmers  
with less than 5 acres  
of land under cultivation

83% of the farmers have  
been associated with the  
program for 4 years or more.

Paddy (rice), Manila (abaca)  
and Sugrcane are the major  
crops grown in the villages.

## PROGRAM

13 farmers learned about the program  
from the MCRC team and allied meetings.

17 farmers were referred by Farmer's Group  
(NABARD) and other farmers.

Farmers were motivated to learn:  
23 farmers - New techniques  
12 farmers - Organic farming  
08 farmers - Reducing use of pesticides

13 Farmers practices fertiliser based  
farming. 16 Farmers practices both fertiliser  
based and organic farming. 1 Farmers  
practices only organic farming

## IMPACT

**70% of the farmers have highlighted the  
program's inability to tackle farm  
problems effectively.**

Bio fertilizers and inputs helped to increase  
Soil Fertility, Crop Yield and Crop Immunity

**All 30 farmers have undergone soil  
testing or utilized Portable Alternative  
Analytical Technology (PAAT)**

57% of farmers have shown familiarity and  
experience of using green toilets



80% of farmers have seen significant improvement in the sanitation practice

57% of farmers have been regularly using the water filters and purifiers

67% of farmers have seen great improvement to access of drinking water

17 farmers have confirmed that CRA technique has helped in resource conservation

18 farmers have confirmed that the SRI technique adoption has been successful

18 farmers expressed more need of access to training programs.  
09 farmers needed support with technological tools and equipments and  
02 farmers needed financial incentives and subsidies

## THE FARMER



The typical farmer is a 48-year-old male who has completed education up to the 10th grade, earning approximately INR 77,500 per year, and has been associated with the program for 4 or more years. The farmer owns 2 acres or less of land and cultivates rice, abaca, and sugarcane.

The farmer became aware of the MCRC's program through the Farmer's Group (NABARD) and other farmers, with their primary motivation to join the program being to learn new farming techniques. They are involved in both fertilizer-based and organic farming, incurring costs on fertilizers, pesticides, and seeds.

Moreover, the farmer has undertaken soil testing or utilized Portable Alternative Analytical Technology (PAAT) for their farming, experiencing positive impacts such as reducing agri-input costs, increasing soil fertility and crop yield, reducing pests incidents, and more. They appreciate the facilities of green toilets, water filters, and purifiers and have had positive experiences with CRA and SRI techniques. They also express the need for increased access to training programs, technological tools and equipment, as well as financial incentives and subsidies.

# INTRODUCTION

## **ABOUT CHOLAMANDALAM INVESTMENTS AND FINANCE COMPANY LIMITED**

Cholamandalam Investment and Finance Company Limited (Chola), incorporated in 1978 as the financial services arm of the Murugappa Group. Chola commenced business as an equipment financing company and has emerged as a comprehensive financial services provider offering vehicle finance, home loans, loan against property, SME loans, secured business personal loans (SBPL), consumer & small enterprises loans (CSEL) and a variety of other financial services to customers. Chola operates from 1191 branches across India with assets under management above INR 112,782 Crores.

The mission of Chola is to enable customers enter a better life. Chola has a growing clientele of over 25 lakh happy customers across the nation. Ever since its inception and all through its growth, the company has kept a clear sight of its values. The basic tenet of these values is a strict adherence to ethics and a responsibility to all those who come within its corporate ambit – customers, shareholders, employees and society.

Cholamandalam Investment and Finance Company Limited (Chola) believes that it has a responsibility to fulfill towards the people and the environment in shaping a better future for the nation and enabling a Better Life. The CSR programs are carried out as a blended activity along with business and covers majority of Indian states. The Focus area of the CSR projects are:



**Health**



**Water and Sanitation**



**Education**



**Art and Culture**



**Sports**

### **CSR KEY FOCUS AREAS**



**Rural Development**



**Environmental Sustainability**



**Research and Development**



**Road Safety**

## PROGRAM BRIEF

### RESEARCH AND DEVELOPMENT ON SUSTAINABLE AGRICULTURAL PRACTICES

Assist small farmers in sustainable agriculture operations to enhance crop production through the use of biological agronomic inputs and biological pesticides or control agents produced from locally available raw materials. Employ advanced knowledge such as soil testing tools and bio inputs to improve soil health management.

The program aims to raise awareness about sustainable agricultural processes and techniques while also providing bio-agricultural inputs and knowledge.

## PROGRAM OBJECTIVES

### Research and development of sustainable agricultural practices

- Crop Production – Development of bio inputs like bio fertilizers and growth promoters
- Crop Protection – Development of bio pesticides, microbial bio control agents, soil health & management

### Research and development on use of enzymes & novel application of natural products for rural India

- Biological water treatment
- Ecological sanitation in rural India
- Safe drinking water for rural communities

**PROGRAM PARTNER** Shri A.M.M. Murugappa Chettiar Research Centre (MCRC)

**PROGRAM LOCATION** Tamil Nadu



# WHY IMPACT ASSESSMENT?

## 1

### Relevance

- **Understanding Context:** Impact Assessment (IA) helps in understanding the social context within which a project or initiative operates. It considers factors such as demographics, culture, and community dynamics, which are essential for effective planning and implementation.
- **Identifying Stakeholders:** It identifies stakeholders who might be affected by the project, ensuring their voices are heard and their needs are considered. This fosters inclusivity and prevents overlooking marginalized or vulnerable groups.
- **Mitigating Risks:** By analyzing potential social risks and conflicts, IA enables proactive measures to mitigate them, ensuring the project's relevance and acceptance within the community.

## 2

### Value creation

- **Maximizing Positive Impact:** IA helps in identifying opportunities to maximize positive impacts. By assessing the potential benefits the project can bring to the community, it enables value creation beyond economic gains, such as improved livelihoods, enhanced well-being, and strengthened social cohesion.
- **Resource Optimization:** It facilitates the efficient allocation of resources by prioritizing interventions that yield the highest social returns. This ensures that investments generate sustainable benefits for both the project and the community.

## 3

### Communication

**Transparency and Trust:** IA fosters transparency by engaging stakeholders throughout the project lifecycle. This builds trust and credibility, as stakeholders are kept informed about assessment findings and involved in decision-making processes.

## 4

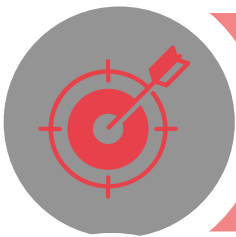
### Improvement

**Learning and Adaptation:** IA facilitates continuous improvement by enabling organizations to learn from past experiences and feedback loops. Monitoring impacts over time allows for adaptation of strategies to address emerging challenges and enhance effectiveness.

# RESEARCH DESIGN

## RESEARCH OBJECTIVES

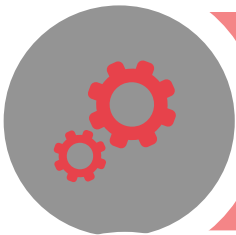
To carry out the Impact Assessment (IA), these specific objectives were chosen for Chola's CSR project in a scientific manner that ensures the validity and reliability of the results.



To consider the extent to which the project objectives and strategies are suited to the needs of the targeted KPIs and to the CSR plan. (Relevance)



To evaluate the outcome indicators in terms of strategic and immediate outcome as per CSR objectives set while initiating the projects (Effectiveness)



To measure the effectiveness of project support structures and evaluate the stakeholders' experience with the various stakeholders providing services. (Effectiveness)



To consider the extent to which the strategies used are suited to reach the desired outcomes and the measure in which these outcomes are suited to local needs. (Adequacy)



To understand the impact of the projects on the stakeholders as mentioned in terms of improvement in well being and quality of life. (Impact)

## QUALITATIVE RESEARCH

For the study we have used qualitative research approach. The qualitative approach delves deep into the nuanced experiences and other stakeholders. This approach is chosen to capture the rich, context-specific insights that may not be fully elucidated through quantitative measures alone. Utilizing methods such as in-depth interviews, the qualitative approach aims to unearth the multifaceted dimensions of the project's impact.

By allowing participants to share their narratives, feelings, and perspectives, this approach ensures a comprehensive understanding of the successes, challenges, and unique learnings of the program. The qualitative data collected is analyzed to identify patterns, themes, and critical insights, thereby contributing to a nuanced and holistic portrayal of outcomes and paving the way for informed recommendations and future program enhancements. The study administered **In-depth Interviews** with

Farmers	MCRC Scientist	Sarpanch, Arangamangalam	MCRC Program Team
30	1. Scientist Grade II	1	1

Table 1: Sample Size for the study

### Limitation of the study

- Beneficiary interactions were facilitated by the team of MCRC. The interactions facilitated were 30 against the planned sample of 40.

# FINDINGS



# DEMOGRAPHICS

The study aimed to understand the impact of the support provided by the AMM Murugappa Chettiar Research Centre (MCRC) to farmers in adopting sustainable farming techniques. 30 farmers (direct beneficiary) were interacted as part of the beneficiary survey. Key informant interviews were undertaken with 1) MCRC Scientist, 2) MCRC program team and 3) Sarpanch of Arangamangalam village. These interactions were done to understand the program qualitatively from the perspectives of different stakeholders and approaches which benefitted farmers the most.

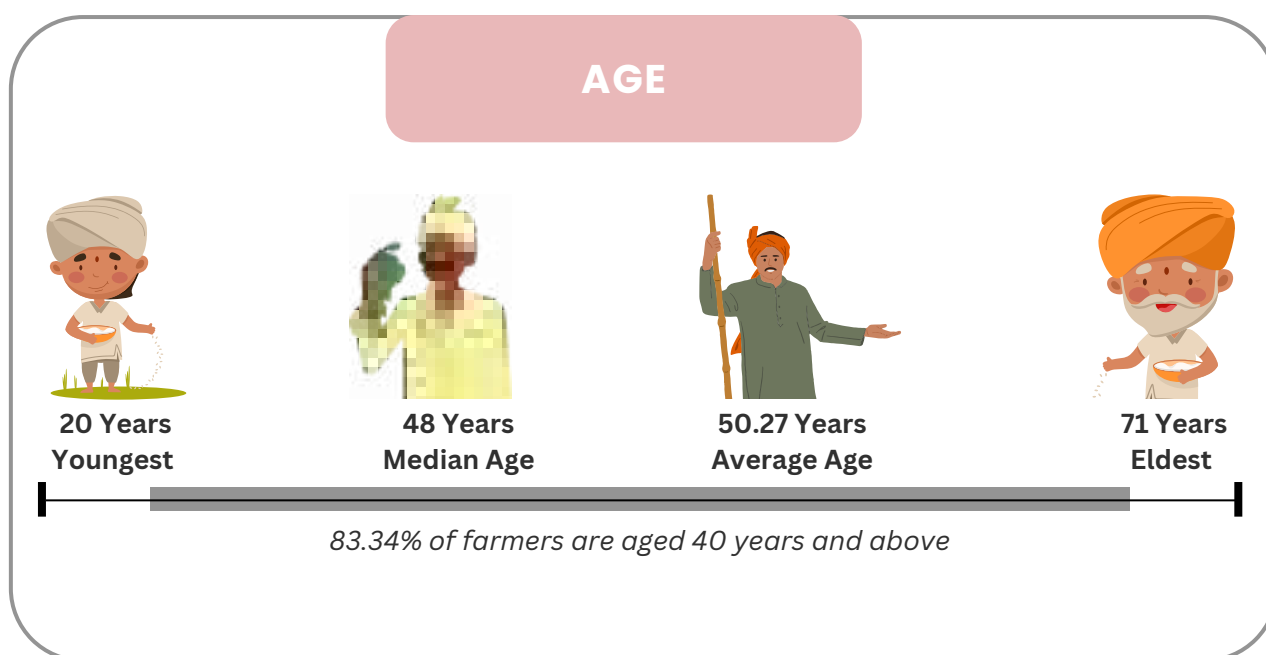


Figure 1: Age of farmers

Age in Years	20-30	31-40	41-50	51-60	60+
Farmers	2	4	13	9	2

Table 2: Age of farmers

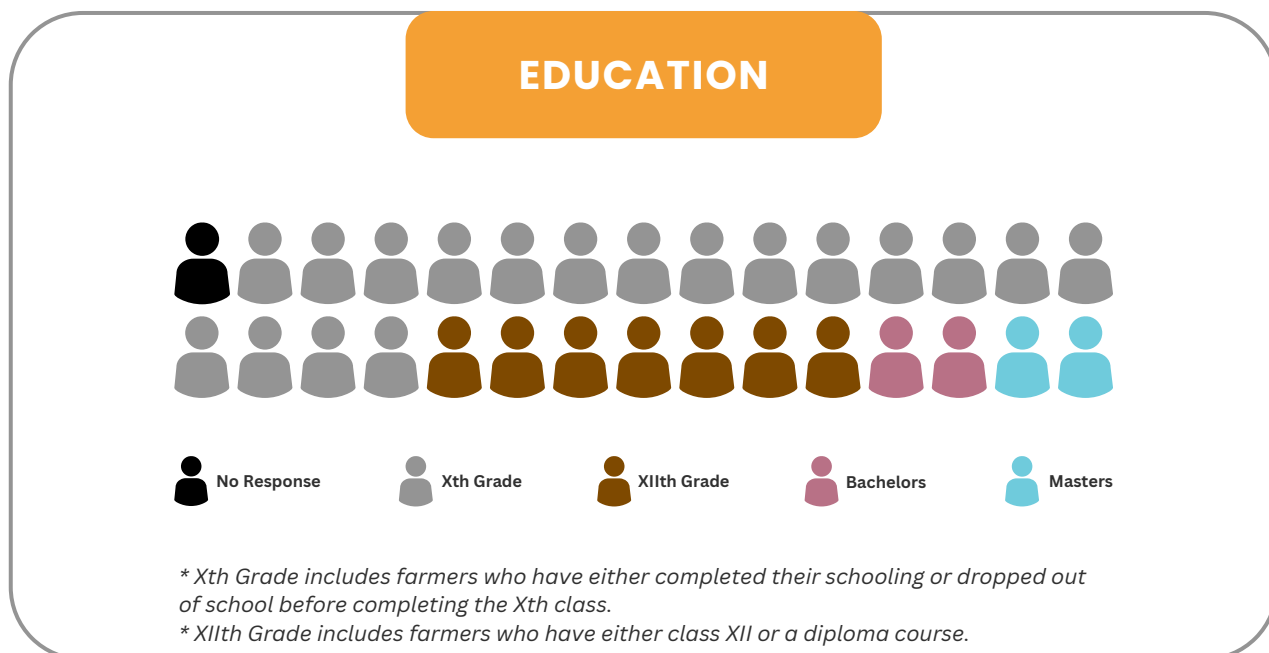


Figure 2: Education of farmers

All the participating farmers are literate and qualified enough to understand the program and the awareness it raises. Their education also helps them become aware of the needs and challenges, and how the program will be helpful in addressing those challenges. The education of the farmers helps to overcome the potential barrier of illiteracy that could have hindered the dissemination of awareness and information. Additionally, it also facilitates smoother communication and coordination within and among farmers.

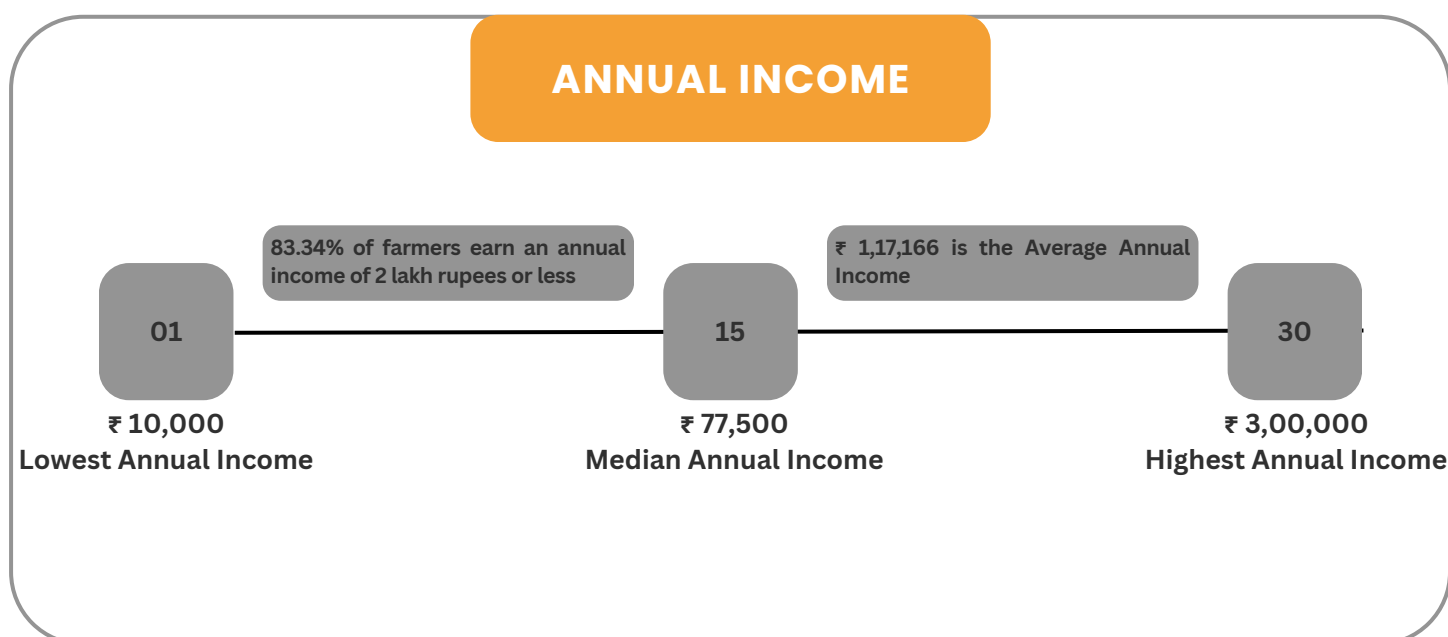


Figure 3: Annual Income of farmers

Annual Income (₹)	Less than 1 Lakh	1 Lakh to 2 Lakh	More than 2 Lakh
Farmers	17	9	4

Table 3: Annual Income of farmers

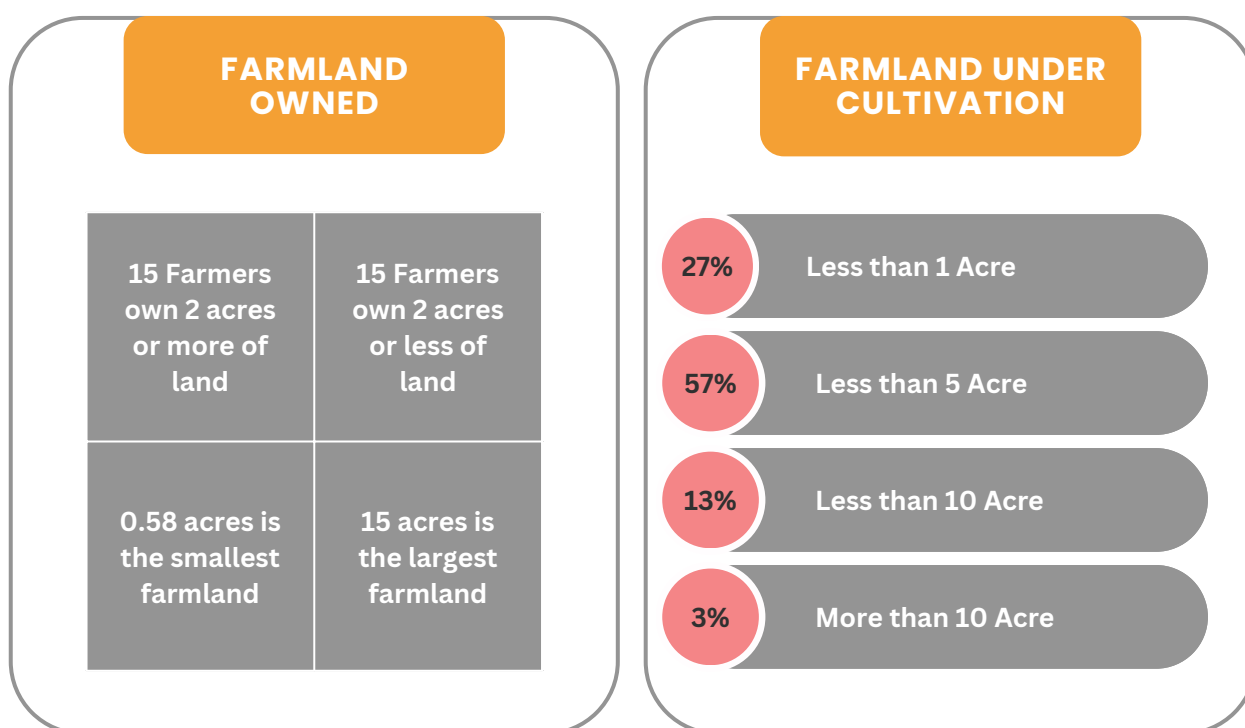


Figure 4: Farmland owned by the farmers

Figure 5: Farmland under cultivation

Mere **4** farmers earn more than two lakhs annually and similarly majority of farmers (**84%**) are small farmers with less than 5 acres of land under cultivation, highlighting their financial vulnerability and possibly limited access to resources for improving agricultural practices. The project aims to support these small, vulnerable farmers by promoting sustainable agricultural practices and reducing reliance on external products. Hence the project itself with the community needs and realities.

Villages	Ayan Kurinjipadi	Theradikuppam	Arangamangalam	Kuruvanpanpettai
Farmers	09	09	08	04

Table 4: Geography - Villages of the farmers

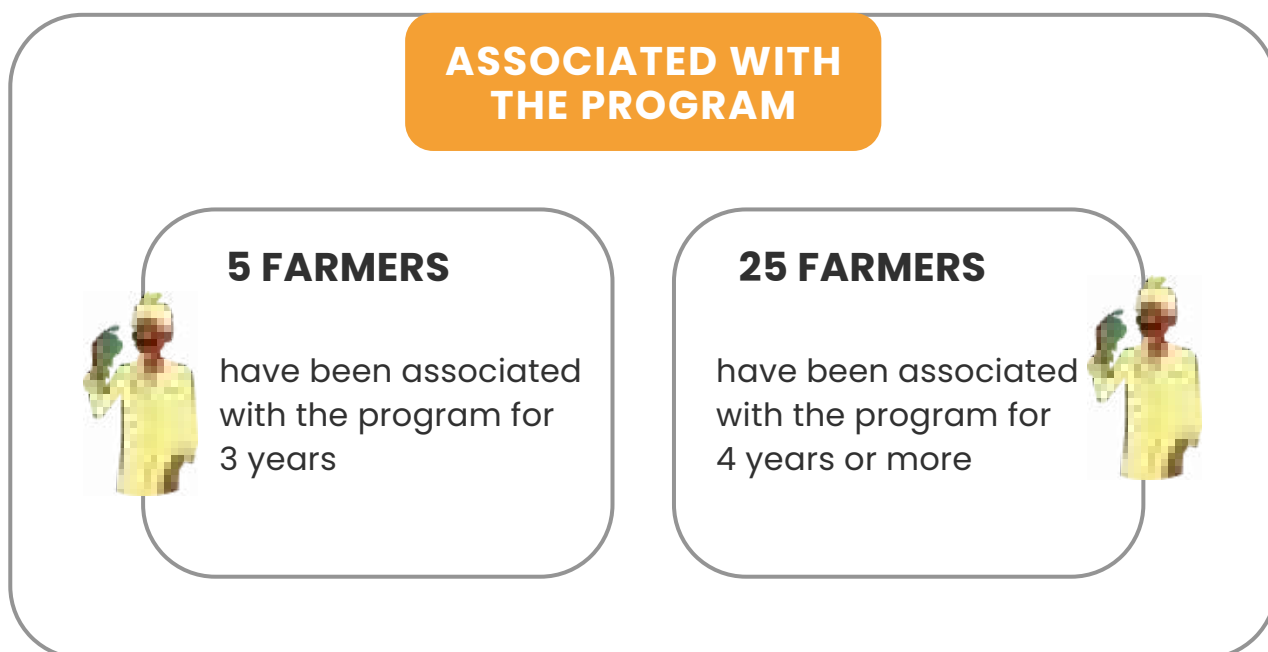


Figure 6: Duration of farmers association with the program

**83%** of the farmers have been associated with the program for 4 years or more. With such extensive and committed participation in the program, farmers gain a wider and deeper understanding of the practices and techniques conveyed through the awareness sessions. Additionally, it ensures the enhancement of agricultural technical skills and the adoption of best practices. Finally, it also strengthens the network and collaborations, ensuring stronger communication and coordination.

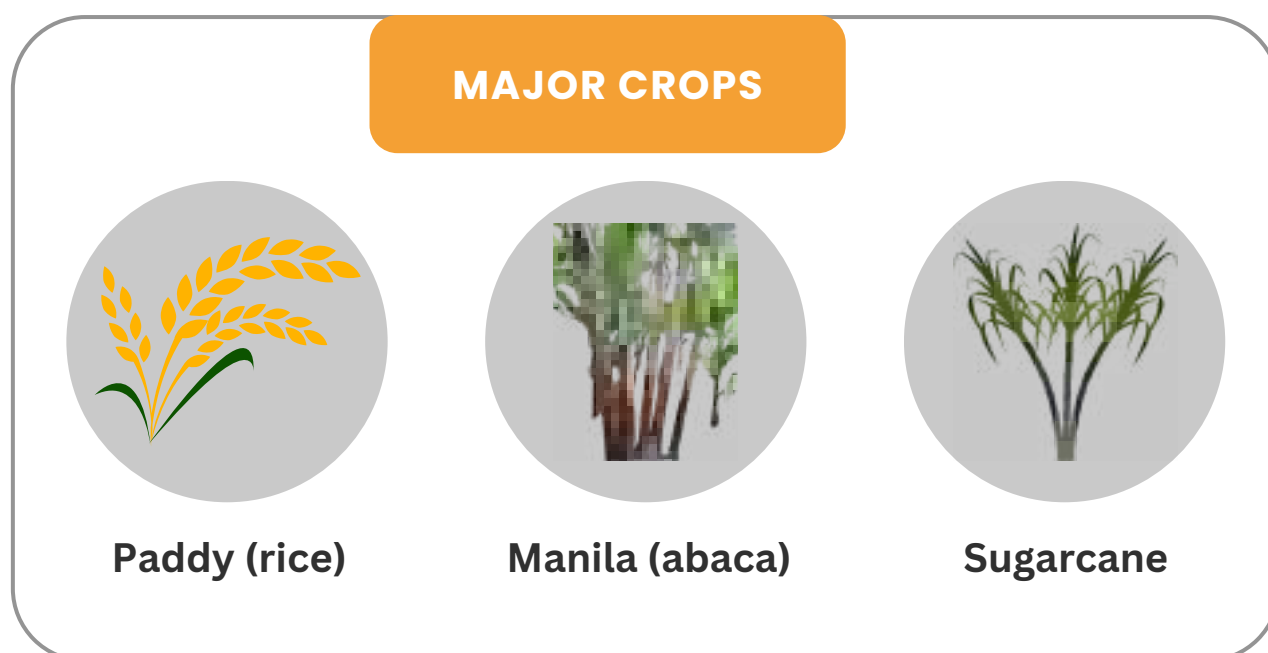
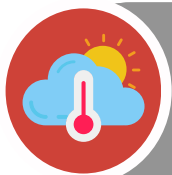


Figure 7: Major crops grown by the farmers

Paddy (rice), Manila (abaca) and Sugarcane are the major crops grown in the villages. These crops require climate suitability, specific soil types, adequate water supply, and attention towards harvesting techniques and pest management. Other crops like Kambu, Watermelon, Cashew, and Black gram are also grown but with lesser frequency. Considering the availability of suitable conditions for the major crops, we infer:



The villages are typically in tropical or subtropical regions with considerable humidity and moisture levels



The soil quality is also fertile with good water retention capabilities



Water is also adequately available through natural resources or irrigation/other facilities



Farmers also pay adequate attention to required harvesting techniques, fertilization, and pest management

# AGRI-INPUTS

The program helps farmers in sustainable agriculture operations to improve crop production by utilizing locally produced biological agricultural inputs. This ensures a reduction in external dependence and the need for credit.

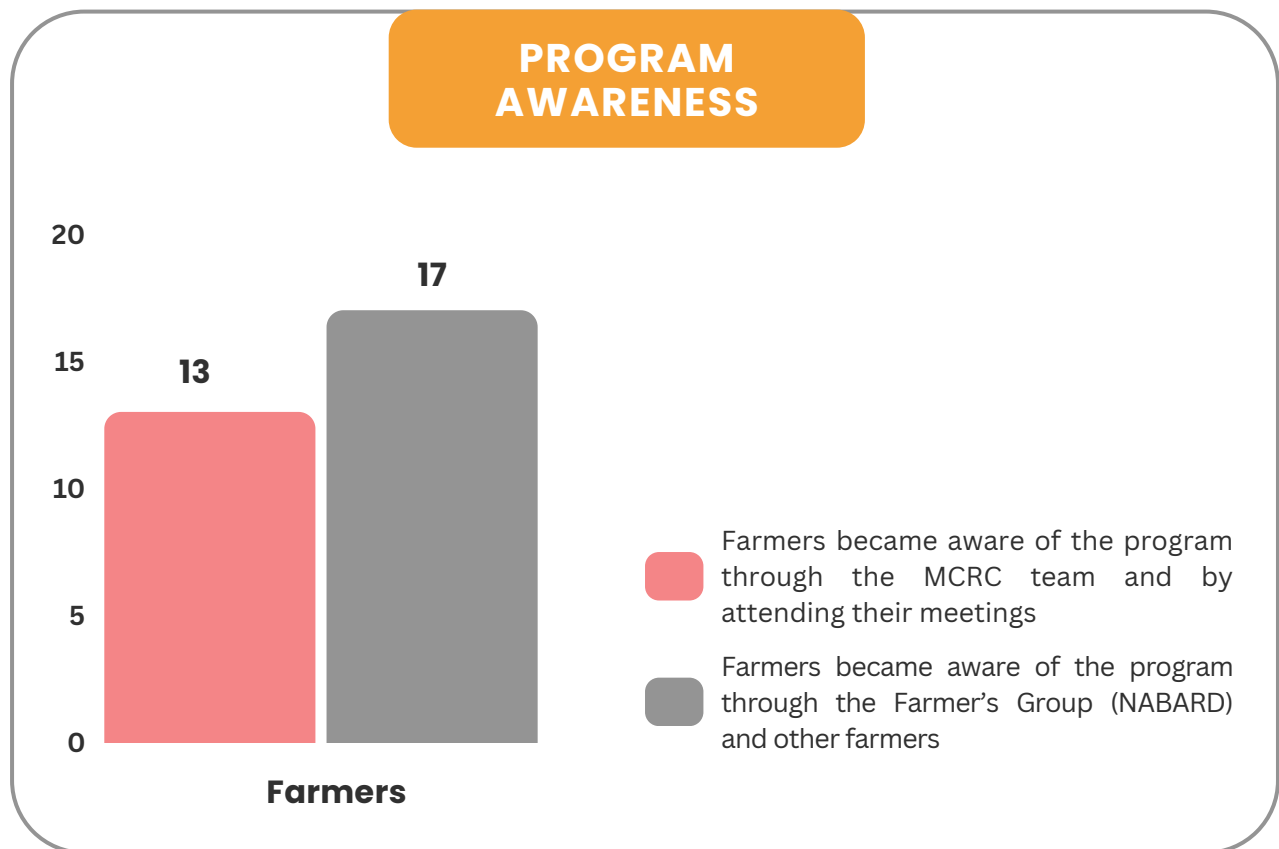


Figure 8: Program awareness methods

**13** of the farmers have come to know about the program through the MCRC team and allied meetings. Farmer's Group (NABARD) and other farmers have also been referring the program to the other **17** farmers, resulting in increased participation. It can be inferred that the program is highly effective since it has built a good image and word-of-mouth publicity among farmers and groups. The MCRC team also shows considerable effort in raising awareness about the program and can systematically explore using individual farmers and farmers' groups to further promote awareness and the program's cause.

The MCRC team reached out to the farmers through their village-level field staff. They primarily organized meetings at the local village level to raise awareness among the farmers. Awareness was particularly conducted with the help of experienced and senior farmers in the village, informing them about new farming practices, organic farming, MCRC/ Bio farm products viz; Panjagavya, Humic acid, Neem oil, and Bio char, and more. In addition to it awareness about usage and distribution of Seed treatment, Pseudomonas and Trichoderma, Panchakavya, Humic acid, Plant oil, Solar water pump, cold boxes and Solar dryer.

The technical staff from the MCRC team helps in conducting timely soil testing of the fields. Such an initial exercise is necessary to ensure productivity and determine soil requirements, pest management, and farming techniques. The field staff and agronomists of the MCRC team engage with farmers once or twice a week, based on the farmers' needs and program requirements. These regular interactions ensure effective learning and implementation of the lessons. They also facilitate timely resolution of queries and help build rapport within the farming community. Farmers also have access to personnel/scientists at Krishi Vigyan Kendra (KVK). This not only helps farmers address their queries but also discuss probable solutions to farm problems. Such interactions keep farmers updated with the right knowledge and techniques.

The farmers had their individual motivations to join the program and participate in the learning and awareness sessions. Learning new farming techniques was an important requirement for the farmers from these awareness sessions. Similarly, farmers showed interest in learning techniques to reduce the usage of chemical fertilizers and adopt organic farming practices.



## FARMERS' MOTIVATION TO PARTICIPATE



23

**23 farmers** have listed the need to learn new farming techniques as their motivation for participating in the program.



12

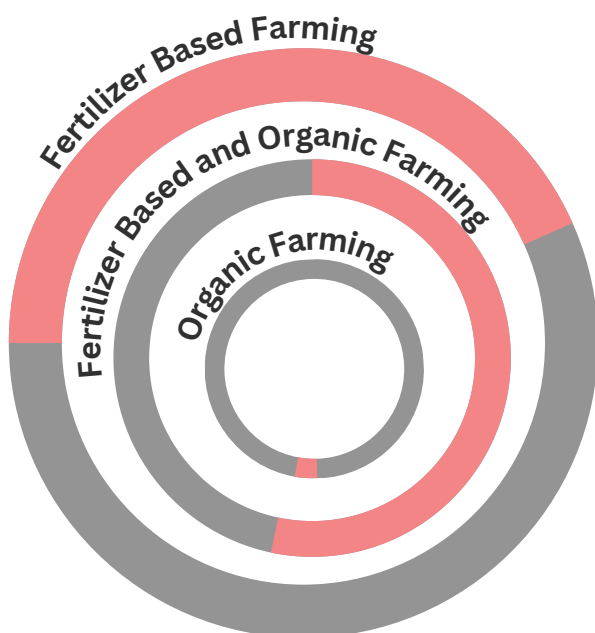
**12 farmers** have listed the need to learn organic farming techniques as their motivation for participating in the program.



08

**08 farmers** have listed the need to learn techniques to reduce usage of pesticides in farming as their motivation for participating in the program.

Figure 9: Farmers motivation to participate in the program



13

Farmers practices fertiliser based farming

16

Farmers practices both fertiliser based and organic farming

1

Farmers practices only organic farming

Fertilizers, Pesticides, Seeds and Manure are the basic agricultural input of the farmers. All the thirty farmers make use of fertilisers, pesticides and seeds in thier respective farms while only seven of the farmers uses manure for their agricultural activities. Manures and fertilizers are both added to increase soil fertility and enhance plant growth. A large number of farmers use fertilizers and pesticides, citing higher dependence on chemical products and increased agricultural input costs. 17 farmers practices organic farming witin their farmlands where all the farmers uses fertilizers in their farm.

Agri-input costs varied as the farmers had different types and suppliers for their requirements. The fertilizers have cost them anyway about ₹4500 to ₹10000 per acre. Similarly, pesticides have cost them ₹1500 to ₹5000 per acre, and for seeds, the farmers have paid about ₹1200 to ₹2500 per acre. Whereas manure involves labor and logistics, which increases its cost, and farmers have to pay about ₹4500 to ₹13000 per acre. The median price per acre for agri-inputs has been listed in the figure below:

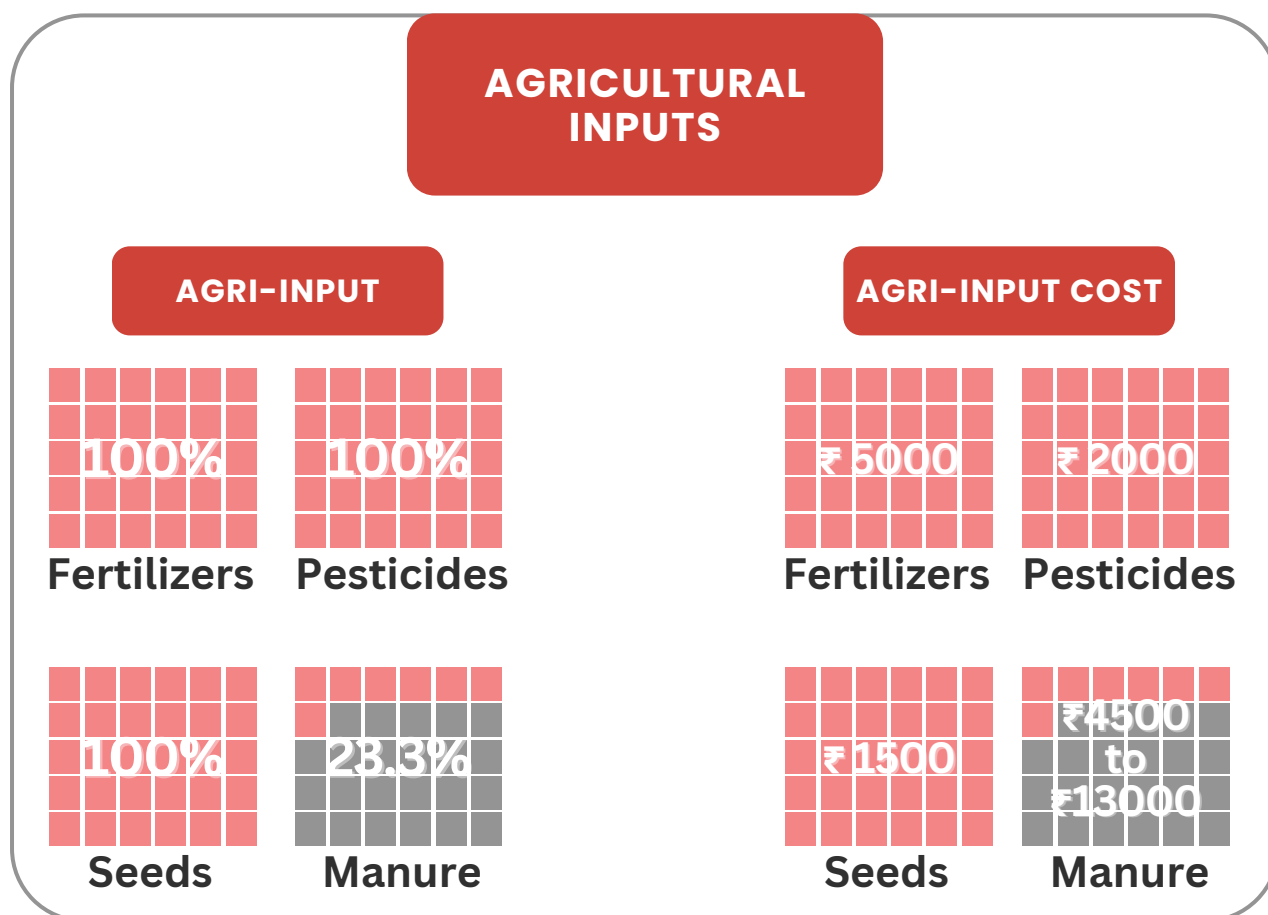


Figure 10: Agri-inputs and their cost

# IMPACT

The **unavailability of labor and unfavorable climatic or natural conditions** have been the most challenging factors for farmers. The major crops are water-intensive, and fluctuations in rainfall and water supply create problems in farming and production. This increases dependence on irrigation facilities external supplies, consequently raising the cost of production. During the cultivation season and post-harvest, farmers face a shortage of labor, which affects production and post-production activities. This lack of labor creates demand for labor and also increases agri-input costs.

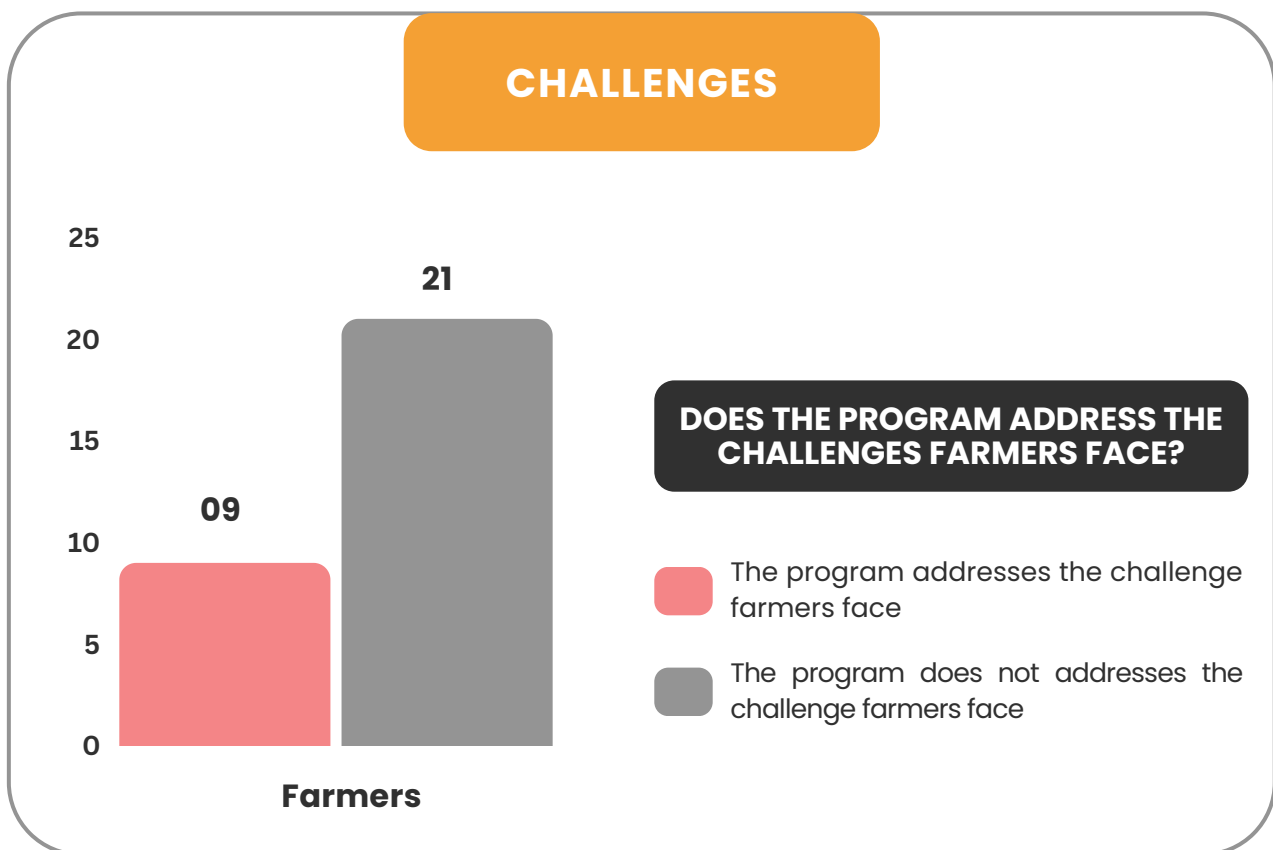


Figure 11: Program addressing field challenges

The MCRC program primarily focuses on reducing the cost of inputs by providing biofertilizers and other farm products and services. However, the program has not been successful in addressing labor shortages and unfavorable climatic or natural conditions. While the program does provide necessary training and awareness regarding these challenges, it lacks effective solutions or mitigation measures.

**Fortified Panchagavya (FP)**, a bio-agri product, helps plants in nutrient uptake and develops tolerance in plants to abiotic/biotic stress. **Vitamate** helps in the replenishment of soil nutrients through enhanced microbial activity and degradation of agricultural residues in the land.

Farmers have been using FP & Vitamate and have seen a considerable impact of the product. They have specially highlighted improvements in soil fertility, leading to an increase in yield and enhanced quality of produce. The crops appear greener and healthier due to improved plant immunity and resistance to microbial diseases. Additionally, with the increase in production, input costs have been reduced and the produce also taste better.

Overall, Fortified Panchagavya (FP) and Vitamate has been a successful addition to farm inputs, with its ability to comprehensively affect the farming practices and various aspects of farming.



- Soil Fertility
- Crop Yield
- Crop Immunity



*The reduction in urea usage not only decreases farmers' purchases but also lowers government subsidies. Moreover, the transition to natural fertilizers like panjagavya underscores a sustainable agricultural shift.*

*- Arun Kumar, MCRC*



All the farmers have used plant oil-based biopesticides in their fields and have observed a considerable change in pest control on their farms. The usage of biopesticides and pest management practices has brought advantages to the farmers and their farms. It has significantly reduced pest occurrence and improved the quality and productivity of the yield. After receiving it from the MCRC team the farmers have also reduced their purchase of pesticides from the local supplier. Here are some of the major impacts of pest management:

- 1 The quality of the crops has improved
- 2 Usage of chemical pesticides is reduced
- 3 Occurrence of insect attacks has decreased
- 4 Crop resistance against insect attacks has improved
- 5 Plants disease, damages and risks were reduced

“

*Introducing our product to communities poses challenges in mobilization and belief. However, we observed success as farmers adopted organic farming, with neighboring villagers showing interest, signaling potential uptake.*

*- Arun Kumar, MCRC*

”

The farmers have also applied *Pseudomonas fluorescens* and *Trichoderma viride* as seed treatments and soil applications from the awareness and allied programs. The usage of these products has been impactful for the farmers since they have helped by:

I  
M  
P  
A  
C  
T

Reducing seed costs

Increasing crop yield

Reduced agri-input cost

Controlling and reducing termite incidents, thereby reducing the usage of pesticides

“The village has achieved an increase in yield, a reduction in pesticide usage, the construction of solar pumps, cost reduction in inputs, and the utilization of cold boxes for selling products.”  
- Panchayat President, Arangamangalam

All the farmers have received Biochar for their paddy crop production. Biochar is a black, carbon-rich charcoal-like porous substance. It enhances the soil fertility by increasing water retention capacity, retaining and increasing soil nutrients and organic matter. Farmers have used it within their field and have witnessed respective improvements within their fields. The major impact Biochar had is

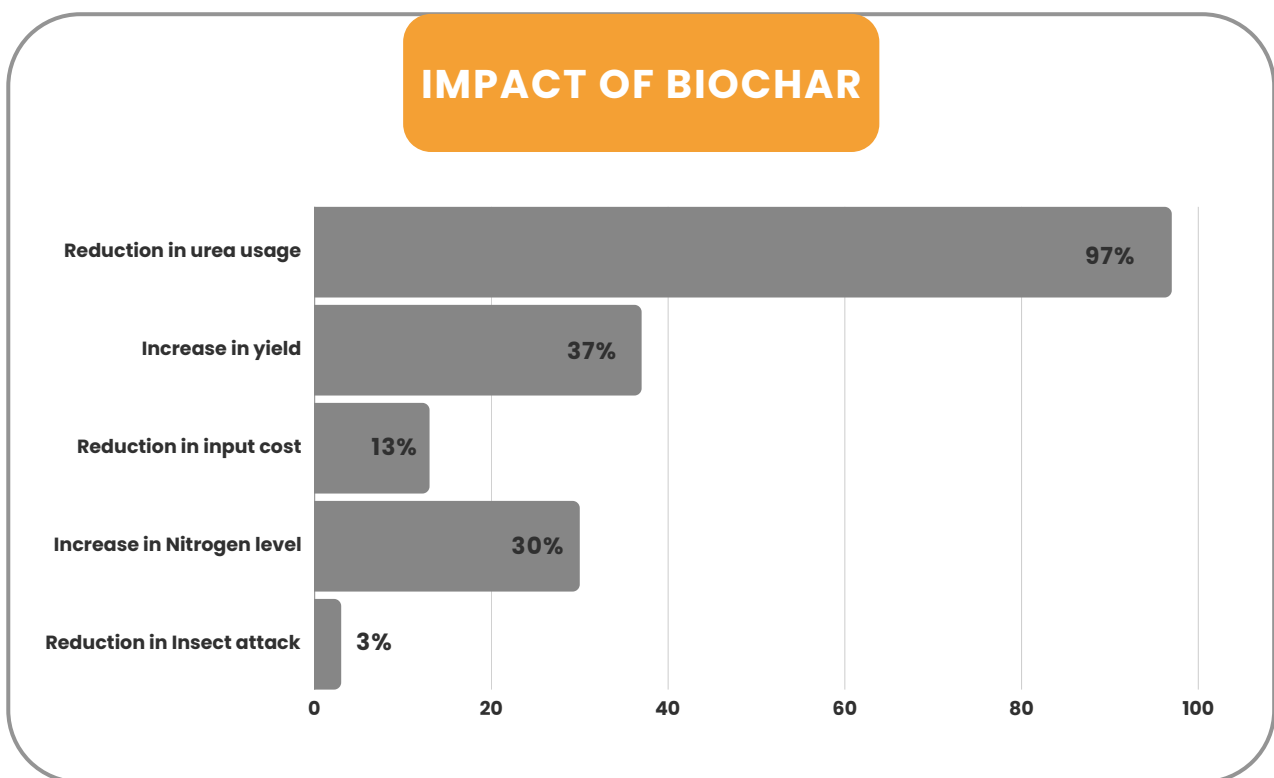


Figure 12: Field impact of using Biochar



All **30** farmers have undergone soil testing or utilized Portable Alternative Analytical Technology (PAAT) to maintain micronutrient levels in the soil, apply fertilizers and other inputs in correct proportions, and plant crops according to soil types. This information is helpful for nutrient management, input application, and crop selection based on soil health.

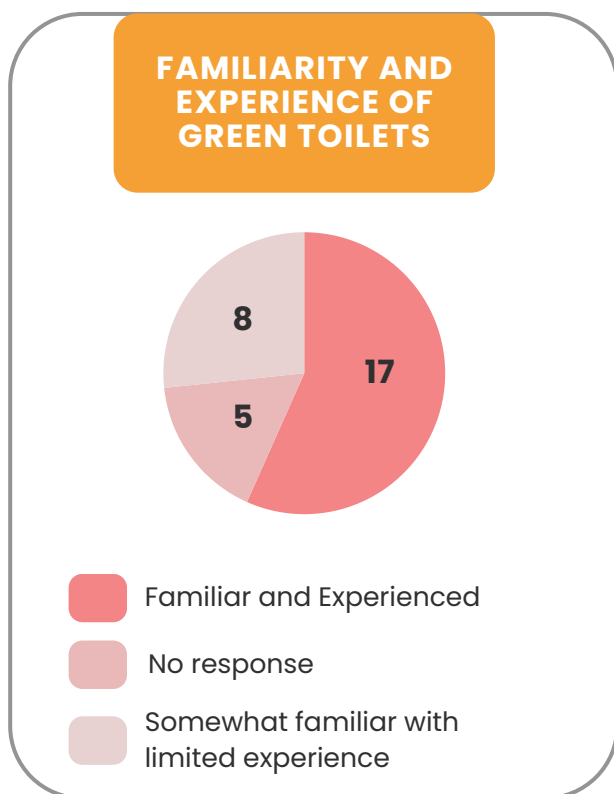


Figure 13: Farmers familiarity and experience of green toilets

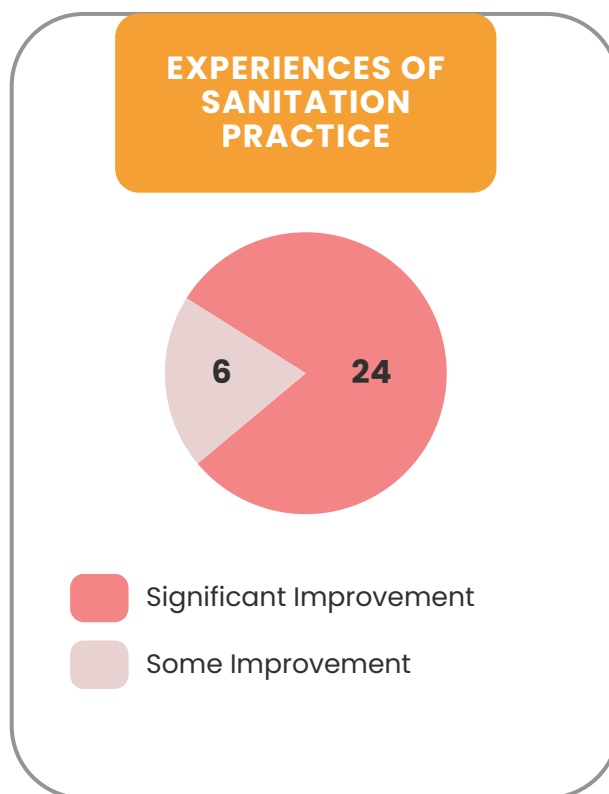


Figure 14: Farmers changes in sanitation practice

The farmers have demonstrated significant awareness and experience with green toilets constructed in villages and schools. Approximately two-thirds of the respondents have confirmed their knowledge and experience with green toilets. Additionally, the utilization of green toilets installed in schools has enhanced sanitation practices in all schools, resulting in schools becoming Open Defecation Free (ODF). **80%** of the respondents have confirmed that there has been a significant improvement in their sanitation practices and the use of toilets. The remaining **20%** of respondents have also agreed that there have been gradual but noticeable improvements in their sanitation practices, indicating that the adoption of toilets is gradually gaining acceptance among farmers and villagers.



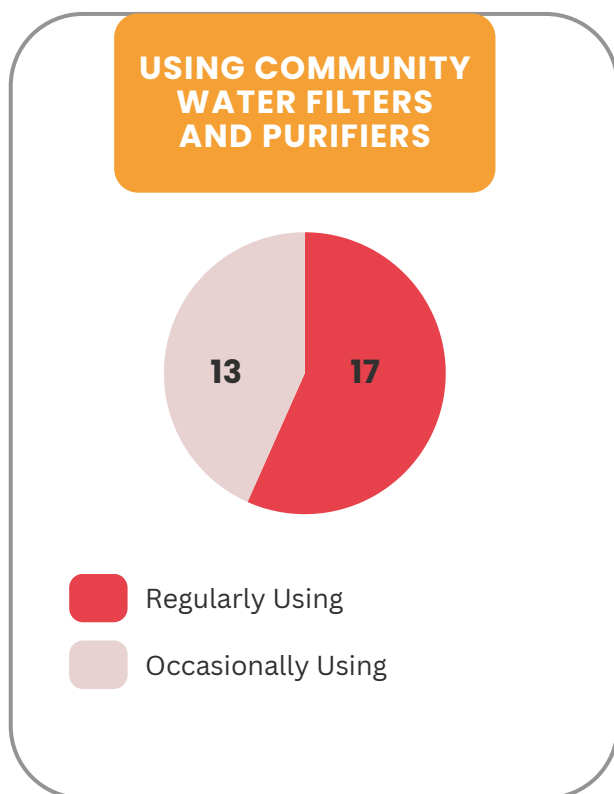


Figure 15: Farmers using community water filters and purifiers

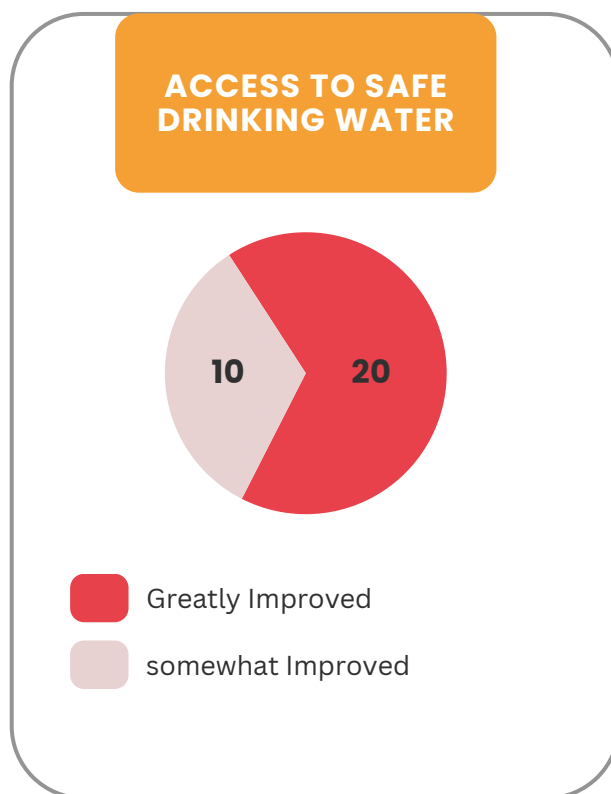


Figure 16: Farmers improved access to safe drinking water

The farmers have shown significant awareness and experience with water filters and purifiers installed in villages to provide potable drinking water for villagers. Nearly all respondents have agreed to using these devices to access drinking water. **17** respondents have confirmed using the installations regularly, while **13** respondents use them occasionally. The project has successfully ensured access to safe drinking water for all community members, with **67%** of respondents noting a significant improvement in access. As a result, farmers have appreciated the installations for making drinking water more accessible to them.

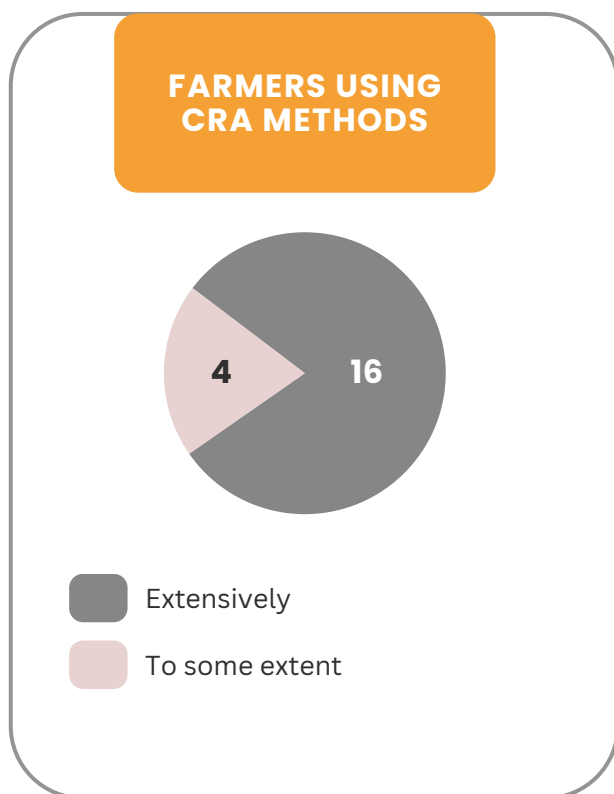


Figure 17: Farmers using CRA method

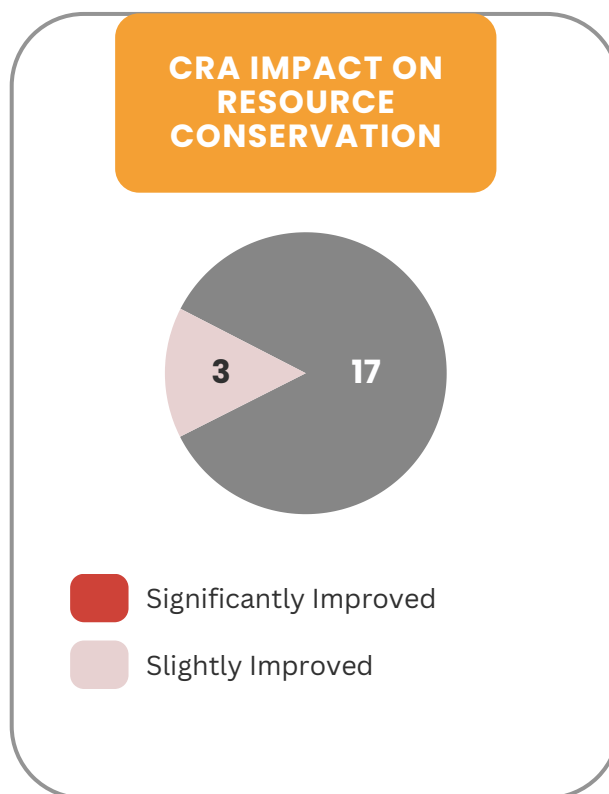


Figure 18: Field impact of CRA method

Climate-resilient agriculture (CRA) is an approach that involves sustainably utilizing existing natural resources to achieve long-term higher productivity and farm incomes amidst climate variabilities. Feed management, water management, soil management, and cultivating tolerant crops are some of the efforts adopted in CRA.

**16** farmers have extensively adopted CRA approaches in their farming techniques, while **4** farmers are gradually adopting these methods. The impact of the approach is evident from farmers' confirmation about CRA's influence on various agri-inputs and resource conservation. **17** farmers have agreed that adopting CRA approaches in farming techniques has significantly contributed to conserving agri-inputs, thereby reducing costs and increasing farm income.



All the **20** farmers have confirmed an increment in crop production, attributing this to the impact of resource conservation and increased farm income.

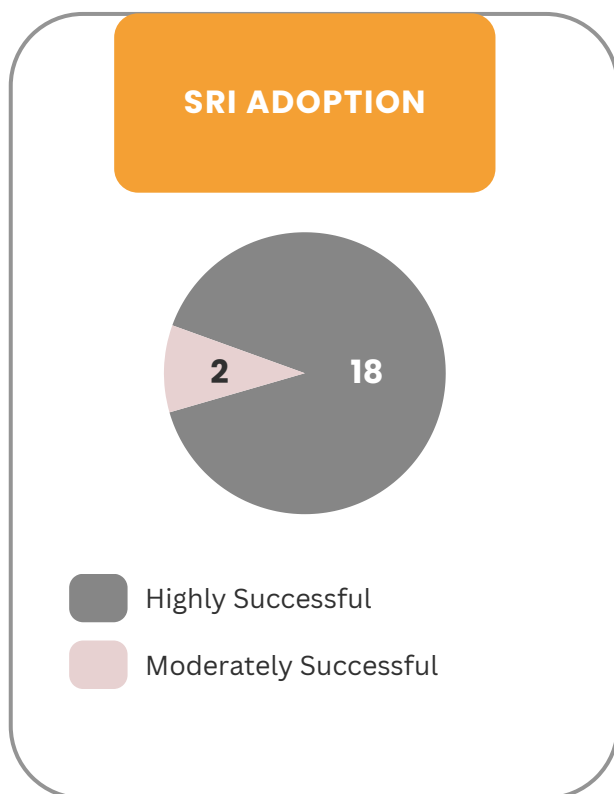


Figure 19: SRI adoption response

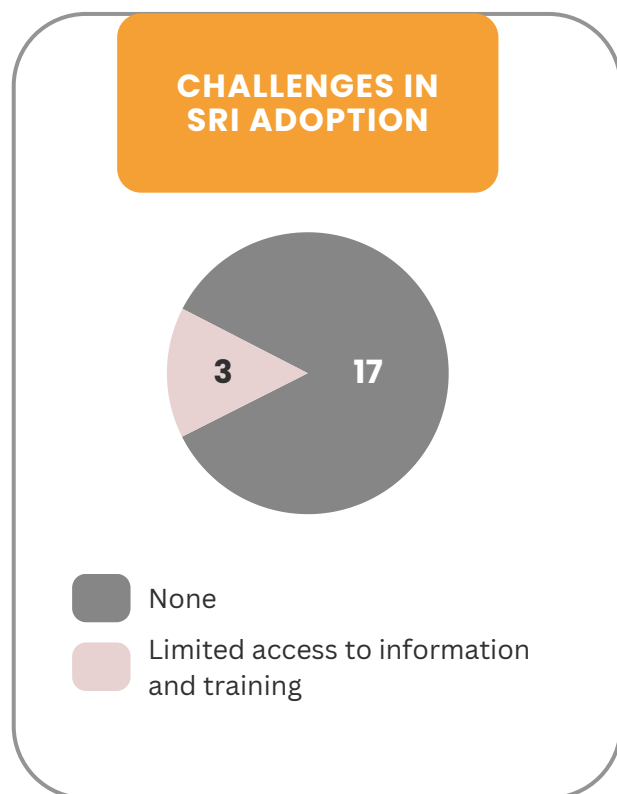


Figure 20: Challenges in SRI adoption

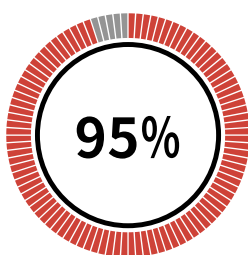
The System of Rice Intensification (SRI) is a methodology aimed at increasing the productivity of irrigated rice by altering plant, soil, water, and nutrient management, particularly by encouraging greater root growth. The program has promoted the SRI technique among farmers, and it has been successfully embraced by them, with **18** farmers agreeing that SRI techniques have been highly effective in rice cultivation. Additionally, **17** farmers have mentioned that adopting and implementing the technique in their fields was relatively easier. This underscores the effectiveness of the awareness and training programs conducted by MCRC in promoting and encouraging farmers to adopt CRA and SRI techniques.

The responses indicate that the majority **(94%) 18** farmers stay informed about the latest developments and best practices related to Climate Resilient Agriculture (CRA) and System of Rice Intensification (SRI) through regular workshops and training programs. This highlights the significance of the workshops and training programs, hands-on, interactive learning experiences in keeping individuals updated and informed about advancements in agricultural techniques and practices. The workshops also give them direct access to the experts and peers fostering networking and exchange of challenges, success, knowledge and ideas. For a few **(6 farmers)** agricultural extension services have also been helpful in providing the farmers with updates and knowledge.

The adoption rate of Climate Resilient Agriculture (CRA) and System of Rice Intensification (SRI) techniques is considerably high among farmers. However, they have also expressed the need for support to effectively and widely adopt, implement, and optimize the usage and impact of these techniques. Out of the 19 respondents surveyed, **18** farmers unanimously agreed on the necessity for better and increased access to training and development workshops. Additionally, **9** farmers highlighted the need for advanced and technique-specific tools and equipment. The need for tools and equipment underscores farmers' dependence on either outdated versions of tools or physical labor. Some farmers have also emphasized the need for financial subsidies to meet farming and agri-input costs, highlighting their challenges in covering farming and allied expenses.



Figure 21: Support required by the farmers



**Nineteen out of twenty (95%)** responding farmers have shown strong appreciation towards the program and desire to recommend (CRA & SRI) it to their peer farmers. This strong recommendation indicates that the program is highly effective, valuable, and beneficial to farmers. It is impactful in addressing the needs and challenges faced by farmers.

# RECOMMENDATIONS

## **Facilitate practical learning Experiences**

Given the emphasis on field exposures, training should incorporate practical, hands-on learning experiences. Field trips, demonstrations, and participatory workshops can enhance the learning experience and facilitate the adoption of new practices.



## **Integration of forward/ market linkages**

MCRC should foster collaborations with Krishi Vigyan Kendras (KVKs), local NGOs for providing market linkage opportunities for small landholder farmers. Farmers' focussed income group (FIG) or Farmers Production Organisation.



## **Increased focus on climate resilient practices and field challenges**

The emphasis on climate-resilient practices needs significant enhancement. Additionally, there should be a focus towards addressing field challenges to ensure the ease of adoption and implementation of farm techniques.



## **Revisit project's scope to include strategies aimed at mitigating labor shortages**

Introduction of labor-saving technologies, training programs, convergence with PRI will be critical to mitigate labor shortages. Utilisation of transplanting of paddy needs to be increased significantly and monitoring of utilization should be done frequently to understand its role in mitigating labor issues.



## **Adoption and enhancement of best practices**

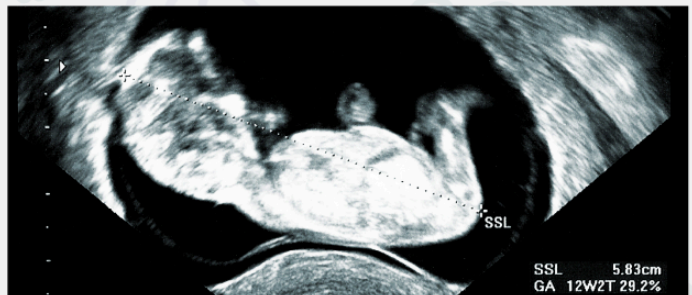
The CRA (Climate Resilient Agriculture) and SRI (System of Rice Intensification) techniques, along with bio inputs, have shown effective results for farmers. It is advisable to check and enhance the scope of their usage and implementation to further benefit agricultural practices.



# IMPACT ASSESSMENT REPORT

## INDIGENOUS STATE OF THE ART

**Ultrasound Scanner  
for Maternal and  
Fetal Healthcare**



IMPLEMENTED BY



SUPPORTED BY



SUBMITTED BY



Impact Assessment Report – Indigenous State of Art Ultrasound Scanner for Maternal and Fetal Healthcare Project

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## **Abbreviations**

1. CSR–Corporate Social Responsibility
2. CIFCL–Cholamandalam Investment Finance Company Limited
3. IITM–Indian Institute of Technology, Madras
4. SDG–Sustainable Development Goals
5. OECD–The Organization for Economic Cooperation and Development
6. ESG–Environmental, Social, and Governance
7. PCB–Printed Circuit Board
8. DB–SAT– Diverging Beam–based Synthetic Aperture Technology
9. ASTRA–Advanced Synthetic Transmit & Receive Aperture Technology
10. R&D–Research & Development
11. ANRF–Anusandhan National Research Foundation
12. GDP–Gross Domestic Product

## Chapter 1: Executive Summary



# EXECUTIVE SUMMARY



### Project Overview

- **Objective:** Develop a prototype ultrasound scanner with an integrated robotic arm for maternal and foetal imaging. Intended for rural areas, utilizing innovative software and hardware solutions, including AI-assisted features
- **Location:** Indian Institute of Technology Madras
- **Project Duration:** FY 2022-23
- **Allocation:** Budget allocation of INR 1,60,00,000/-
- **Donor Name:** Cholamandalam Investment Finance Company Limited (CIFCL)



### Field Visit Summary

- Field visit to IITM campus on January 25th, 2024
- Leadership provided by Dr. Arun K Thittai who is leading the project from the Department of Applied Mechanics & Biomedical Engineering
- Substantial contributions from various departments
- The prototype scanner is ready for field trials



### Impact Assessment

- **Focus Area:** Healthcare & Research and Development
- **Methodologies:** Mixed method approach including Key Informant Interviews and direct observations during the field visit
- **Analysis framework :** OECD, SDG and ESG alignment

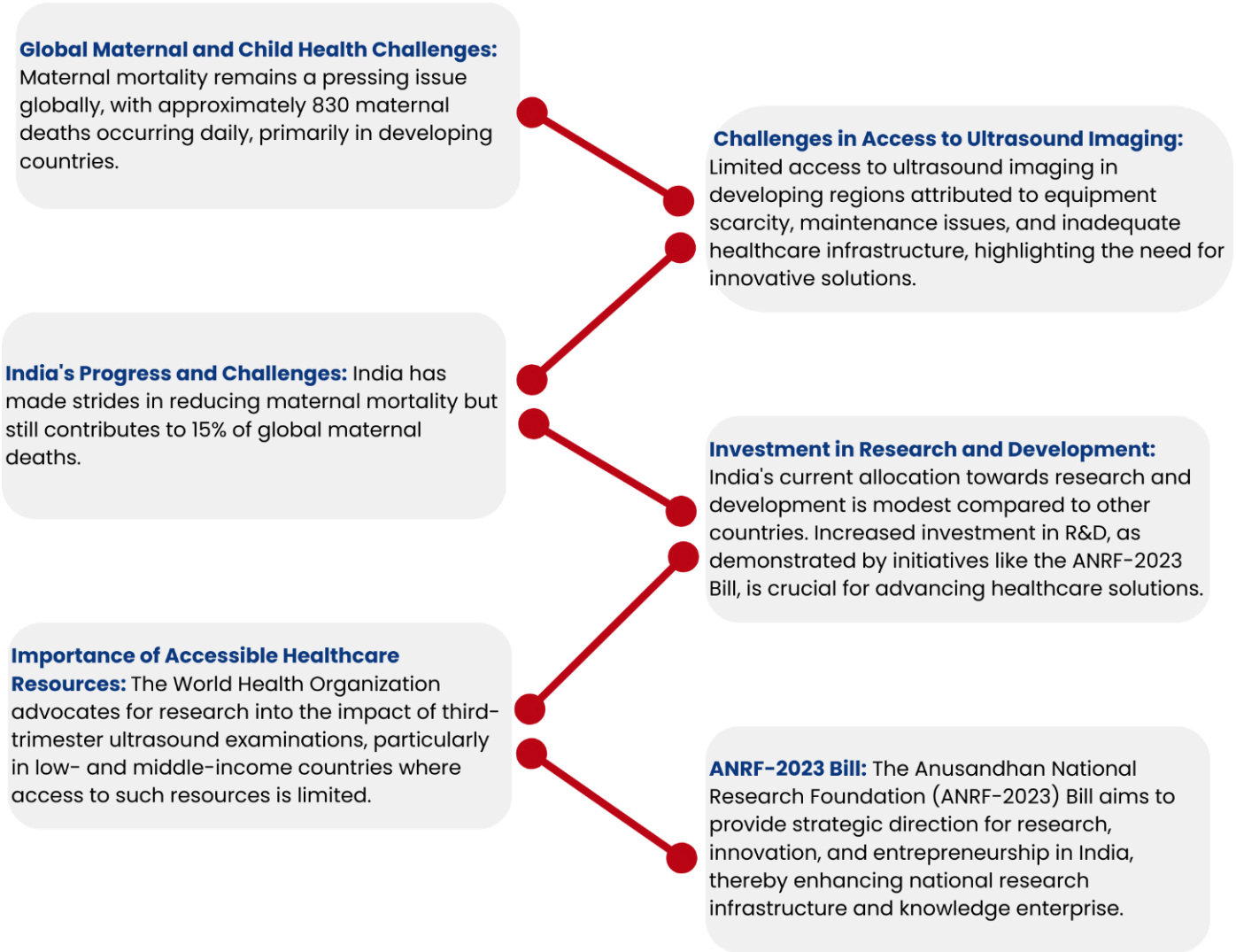


### Project Impact

- Immediate impact through increased trained personnel and positive brand image of "Make in India"
- Indigenous development, reduction of import dependency, and promotion of social, environmental, and economic well-being
- By engaging Indian students, the project capitalizes on their expertise and enthusiasm, fostering a culture of collaboration and knowledge sharing within academia
- Through partnerships with CSR, the project exemplifies collaborative innovation by utilizing corporate CSR funds for research and development.

## Chapter 2: Introduction

### 2.1 Need



1234

<sup>1</sup><https://www.who.int/news-room/fact-sheets/detail/maternal-mortality#:~:text=Every%20day%20in%202020%2C%20almost,dropped%20by%20about%2034%25%20worldwide.>  
<sup>2</sup><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9292773/>  
<sup>3</sup><https://www.thehindu.com/opinion/lead/indias-rd-funding-breaking-down-the-numbers/article67947662.ece>  
<sup>4</sup><https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1947230>

## 2.2 Project Highlights

### PROJECT OVERVIEW



What?

Developing an indigenous state-of-the-art ultrasound scanner tailored specifically for maternal and fetal healthcare in Indian rural settings.



Where?

The project is being carried out at the Indian Institute of Technology Madras.



Who?

Department of Applied Mechanics & Biomedical Engineering, the project involves collaboration with experts from various departments including computer engineering, electrical engineering, and medical robotics.



When?

The project commenced in FY 2022 and is ongoing, with milestones achieved and progress continually monitored.



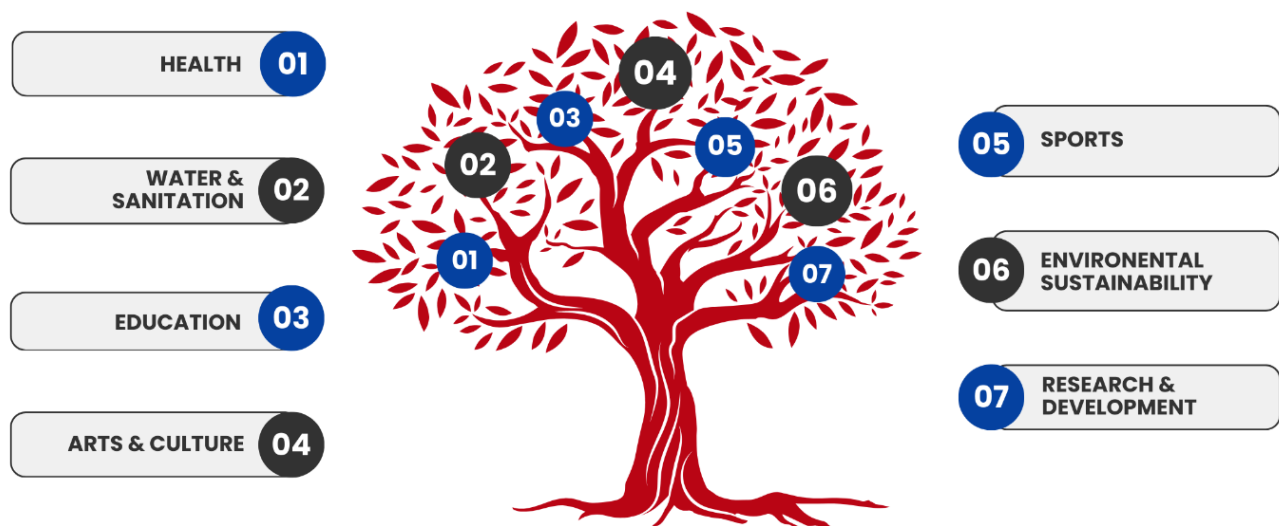
How?

IITM secured a CSR funding from Cholamandalam Investment Finance Company Limited totalling to INR 1,60,00,000/- for FY 22-23.

## 2.3 About the Company and its CSR values

Cholamandalam Investment and Finance Company Limited (CIFCL), a part of the Murugappa Group is a leading Non-Banking Financial Company and is deeply committed to fulfilling its social and environmental responsibilities as a cornerstone of its corporate ethos. Recognizing its pivotal role in shaping a better future for the nation and fostering a better Life, CIFCL integrates CSR initiatives seamlessly with its business activities, reaching neglected and underserved segments of society across 12 states in India.

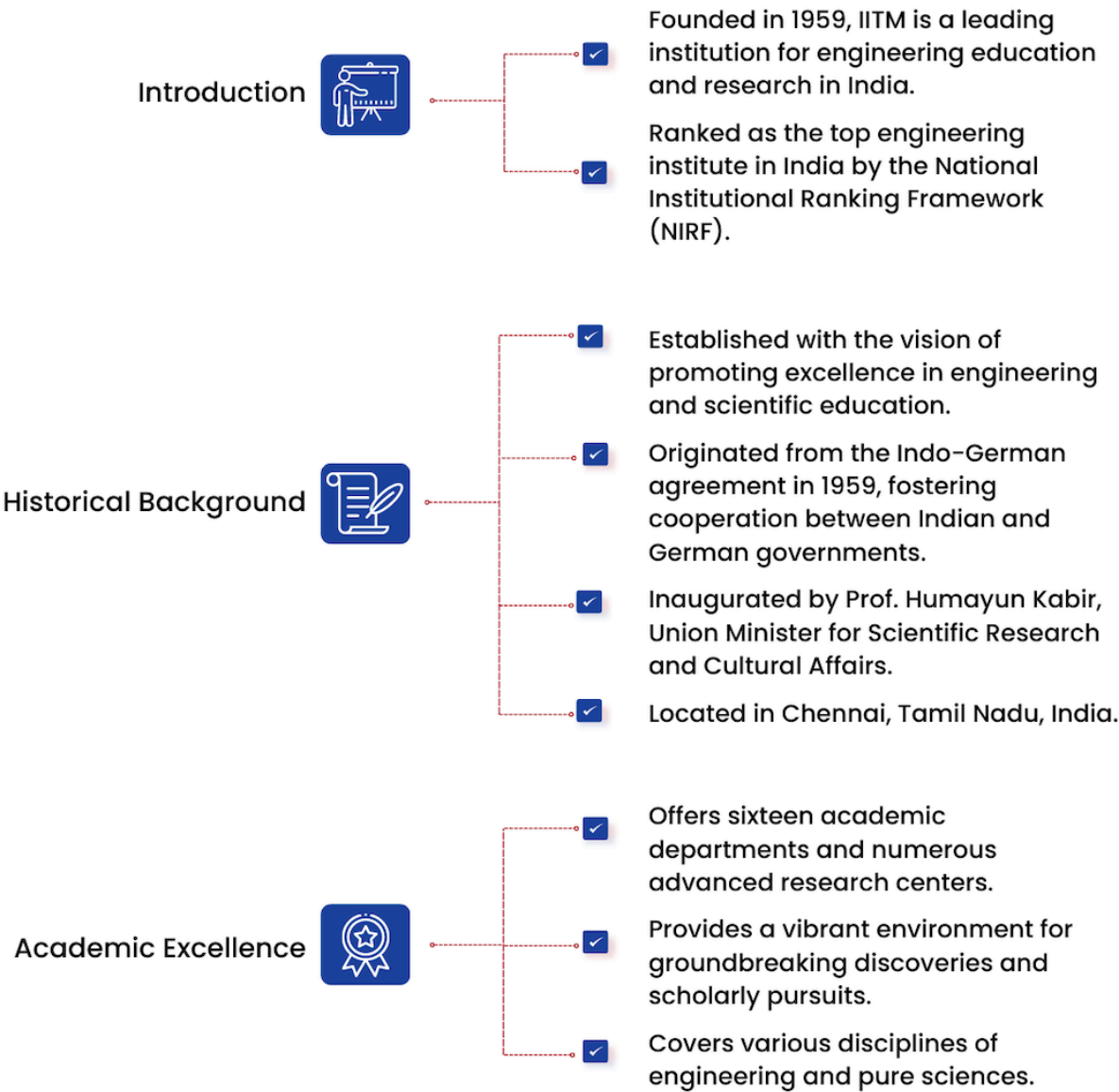
### KEY FOCUS AREAS



In its CSR efforts, Cholamandalam Investment Finance Company Limited (CIFCL) has contributed to India's Research and Development efforts and social imperatives. One such initiative was implemented through the Implementing Partner, Indian Institute of Technology, Madras(IITM). CIFCL supported the projects by IITM in the FY 2022-23. The project was the development Indigenous State of Art Ultrasound prototype Scanner for Maternal and Fetal Healthcare. To evaluate the evolution, progress, challenges, and impacts of this project, Chrysalis Services (Chrysalis Services) was engaged to conduct the Impact Assessment study.

2.4 Implementing Partner

Indian Institute of Technology upholds its legacy of excellence in education and research, contributing significantly to technological advancement in India.







2.5 Scope of Impact Assessment

Chrysalis Services (chrysalis-services. in) was engaged in evaluating the effectiveness of CIFCL’s CSR activity, focusing on the development of the Indigenous State of Art Ultrasound Scanner for Maternal and Fetal Healthcare. It encompassed an understanding of ultrasound scanner development stages, milestones, and challenges faced.

## 2.6 Background to Initiation of the Research & Development Supported through Corporate Social Responsibility

The Biomedical Ultrasound Lab at IITM has been at the forefront of developing a pioneering technology for ultrasound imaging, aiming to revolutionize medical diagnostics. Supported initially by internal funds and later by organizations such as the Department of Biotechnology, Department of Science and Technology, and the Science and Engineering Research Board, among others, the lab has relentlessly pursued its mission.

Up until September 2022, substantial progress had been made in establishing a proof of concept for the novel technology. The next phase of the project involved the preparation of a comprehensive proposal aimed at securing funding to transition the technology prototype into application-specific product prototypes, in this case; the maternal and fetal imaging. In a significant development during FY 2021-2022, the IITM CSR office facilitated engagement with CIFCL, aligning with the vision of promoting "Make-in-India" medical devices. Further conversations, occurring in February 2022, unveiled a notable alignment between the goals of the project and the aspirations of the CIFCL team. Their commitment to supporting the development of an indigenous ultrasound scanner for maternal and fetal healthcare was evident from the outset.

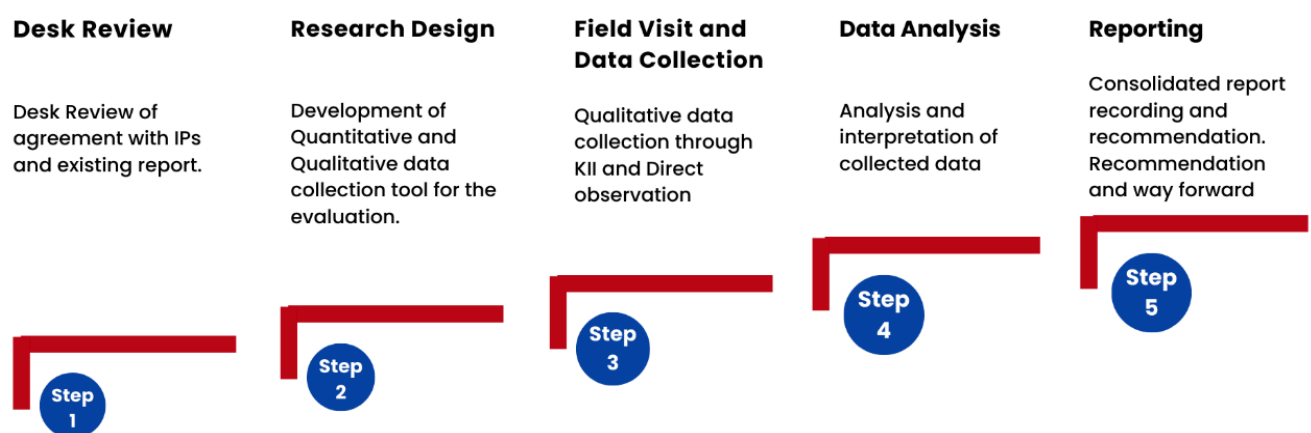
 Duration	The project, spanning FY 22-23 and FY 23-24, is structured with quarterly milestones to ensure timely progress toward deploying a functional prototype. The impact evaluation focused solely on FY 22-23.
 Objective	To develop a fully functional prototype ultrasound scanner with an integrated robotic arm for maternal and fetal imaging in rural settings.
 The Reach	The project aims to extend high-quality ultrasound imaging to rural and remote areas across India.
 Key beneficiaries	The primary beneficiaries are the expectant mothers from rural communities.



## Chapter 3: Impact Assessment

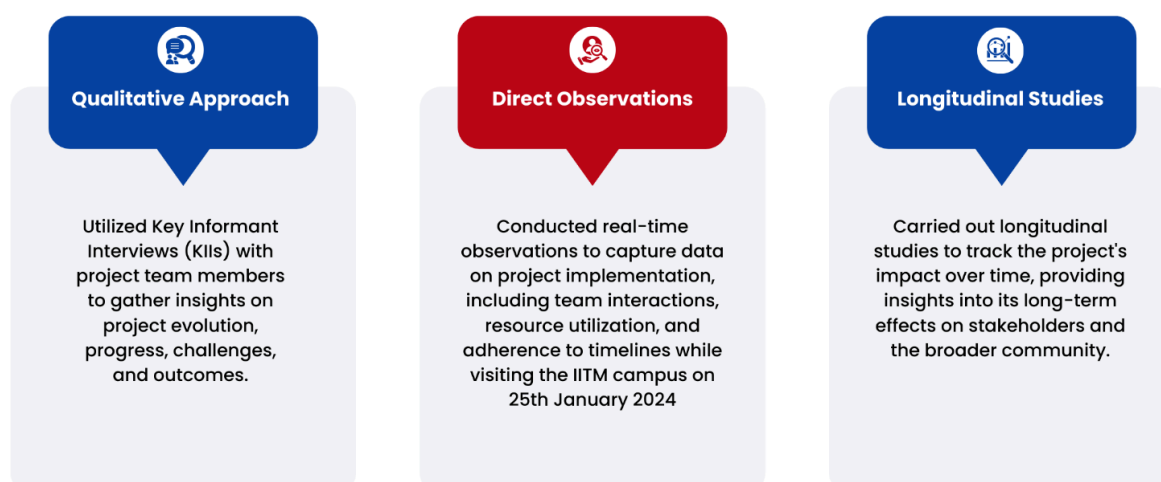
### 3.1 Impact Assessment Study Process

The primary objective of the Impact Assessment is to evaluate the effectiveness and overall impact of the project on its intended beneficiaries. This assessment aims to measure the positive and extended outcomes, identify areas of success, and scope for further improvement, if any. The following are the steps involved in conducting an Impact Assessment:



### 3.2 Methodology & Tools

The methodology employed for this Impact assessment study involved a comprehensive review of the project to assess its performance relative to its stated objectives. A mixed-method approach was adopted, combining qualitative, direct observations, and Longitudinal study techniques to gather and analyze data effectively.



### 3.3 Analysis Framework

#### 1. OECD/REEIS

The analysis framework adopted for evaluating the project was structured around the REEIS framework, which encompasses Relevance, Efficiency, Effectiveness, Coherence, Impact, and Sustainability parameters. Additionally, the framework facilitated an assessment of both intended and extended impacts, providing valuable insights into the project's reach and significance beyond its immediate objectives.

**Relevance:**

This criterion assessed the alignment of the project objectives with the needs and priorities of the stakeholders. It examined whether the project addressed significant challenges and contributed to achieving overarching goals in the relevant sector or context.

**Efficiency:**

Efficiency evaluated how well the project resources were utilized to achieve the intended outcomes. It focused on optimizing resource allocation and minimizing waste to maximize the project's output within the given constraints.

**Effectiveness:**

Effectiveness gauged the extent to which the project objectives were met and whether the desired outcomes were achieved. It analyzed the degree of success in delivering the intended results and whether the project activities were implemented as planned.

**Impact:**

Impact evaluated the tangible and intangible effects of the project on its target beneficiaries, stakeholders, and the broader community. It examined the extent of positive or negative changes resulting from the project implementation, including social, economic, environmental, and institutional impacts.

**Coherence:**

Coherence assessed the consistency and compatibility of the project with other related initiatives, policies, or programs. It examined how well the project integrated with existing frameworks and complemented or reinforced broader development strategies.

**Sustainability:**

Sustainability looked at the project's capacity to maintain its benefits over the long term and its ability to adapt to changing circumstances or evolving needs. It assessed whether the project outcomes were durable, scalable, and replicable beyond the project lifespan, contributing to lasting improvements in the target area or sector.

#### 2. Sustainable Development Goal

The study evaluated how the project contributed to achieving specific Sustainable Development Goals (SDGs). This assessment measured the project's impact by

examining its alignment with and progress toward the relevant SDG targets, providing valuable insights for future sustainable development initiatives.

### **3. Alignment with core values and ESG principles of CIFCL**

The study assessed the project's impact on environmental, social, and governance (ESG) factors, considering its influence on diverse stakeholders. Emphasis was placed on aligning the project's outcomes with CIFCL's ESG pillars, ensuring synergy between its objectives and the company's overarching sustainability principles.

#### **3.4: Ethical considerations**

We followed the following plan for compliance with the ethical standards:

##### **Respect for Dignity and Diversity:**

The evaluation team was mindful of differences in the culture, local customs, religious beliefs and practices, personal interaction, gender roles, disability, age, and ethnicity while conducting the study. The research instruments that were used in the study were ensured to be appropriate to the cultural settings of the study areas. The evaluation team was considerate of the time and privacy of the study participants while administering the study. All the enumerators were trained to keep these factors in mind during the data collection process.

##### **Compliance with Codes for Vulnerable Groups**

The evaluation team adhered to and complied with the existing legal codes (local/international). A consent form was read out and agreed upon by the study participants before administering the study. The study was administered only to those participants who agreed to participate in the study. Written and/or verbal consent was taken from all the participants of the study.

##### **Confidentiality**

The evaluators ensured the confidentiality of any information that was collected from the respondents. The scope and limits of confidentiality were conveyed to the respondents before the administration of the study. The evaluators ensured that the source of sensitive information/critical feedback was not traced back.

### **3.5 Limitations of the Study**

- As the project is currently in the prototype stage and undergoing development, its effectiveness in achieving its objectives remains to be fully assessed. While we acknowledge that progress is underway, we have yet to determine the tangible impact on the end users and beneficiaries it aims to serve. Continued evaluation and testing will be essential to gauge its efficacy and ensure its intended benefits are realized.
- Given the technical nature of the study, requiring involvement from engineers and technical consultants, comprehending the intricacies of software, hardware, and robotics proved challenging. As a result, we encountered difficulty in fully assessing the achievement levels.

## Chapter 4: Study Findings & Analysis

### 4.1 Key Stakeholders met

During the field visit, the team had the opportunity to meet with key respondents who had been directly involved in the development of the project. These key respondents include:



*Image of the Key Stakeholders met*

**Dr. Arun K Thittai:** The project management team overseeing the development of the Indigenous State of Art Ultrasound Scanner for Maternal and Fetal Healthcare project is led by Dr. Arun K Thittai, is a distinguished Professor in the Department of Applied Mechanics & Biomedical Engineering at the Indian Institute of Technology Madras (IITM). Dr. Thittai has played a pivotal role in driving the project forward, leveraging his expertise in

biomedical engineering and ultrasound imaging technology to guide the team toward achieving its objectives. Under his leadership, the project has made significant progress in developing a prototype ultrasound scanner tailored for maternal and fetal healthcare in rural settings.

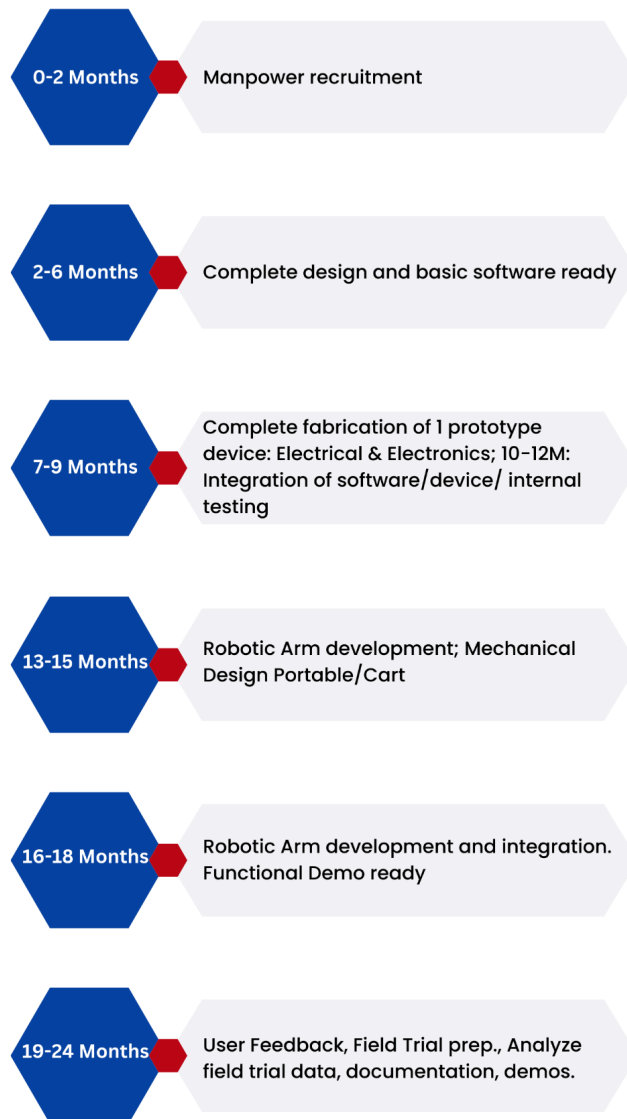
**Dr. Nirav:** Dr. Nirav is a member of the robotics arm team involved in the development of the integrated robotic arm for the ultrasound scanner. His expertise in robotics engineering has been essential in designing and implementing the robotic arm subsystem, which is integral to the functionality of the ultrasound scanner.



*Image of the Integrated Robotic arm developed*

## 4.2 Findings

### PROJECT PHASES



The objective of the project was to translate the state-of-the-art ultrasound imaging technologies developed by the team into tangible product prototypes with real-world applications. The initial focus was on creating a comprehensive ultrasound imaging system tailored specifically for maternal and fetal healthcare, with an emphasis on its viability for deployment in rural and remote health screening settings. The approach entailed the development of an ultrasound scanner designed to address the unique challenges of rural healthcare delivery such as trained medical professionals, and poor health outcomes among others. The scanner design is not only compact and portable but will also incorporate advanced AI-driven software for automated analysis, ensuring accurate and efficient diagnostics even in resource-constrained environments. Furthermore, recognizing the need for reliable screening and remote

scanning capabilities in rural areas, the plan is to integrate the ultrasound scanner with a custom-designed robotic arm. While the prototype is ready, its real-world application is to be initiated. The robotic arm development and incorporation of AI-driven software for automated analysis is also a work in progress.

To streamline the project's diverse activities, the focus areas were categorized into Software, Hardware, and Robotics components, each playing a crucial role in advancing the development of this medical technology.

## Phase wise development



### Components of the Project

#### 1. Hardware

- Complete Electronic System design
- Mechanical Design

#### 2. Software

- Application-specific front end (GUI, etc.)
- Backend (Image reconstruction)

#### 3. AI Tool development

- Robotic Arm for operator expertise independent scanning development and integration



### Support

#### Resource Allocations

- Third-Party Services- Electronic and Mechanical design and Fabrication
- Material cost for 3 systems
- Manpower-3 Core/senior members, 1 recent lab PhD, 1 current senior staff, 1 senior industry-retired technical personnel, 6 software/hardware engineers

#### Collaboration and Consultation

##### 1. Expert Consultation

- Consulting with 3 expert IITM faculty members
- Electronic system design
- Software
- Robotics from EE, CS, and ED departments respectively

##### 2. End-User Input

- Contacting and seeking input from top/reputed clinical experts/leaders
- Conducting a pilot study

### Development and Integration

#### 1. Hardware and Software Development

Implementing designs based on expert consultations and end-user input

#### 2. Robotic Arm Integration

Integrating the robotic arm for operator expertise independent scanning



### Phases

#### Testing and Evaluation

##### 1. Prototype Testing

Conducting rigorous testing of the ultrasound system

##### 2. User Feedback

Gathering feedback from end-users and experts

### Refinement and Finalization

#### 1. Iterative Improvement

Incorporating feedback for refinement

#### 2. Finalization

Finalizing the ultrasound scanner prototype for deployment



## 4.2.1 Relevance

The project is inherently relevant in the context of addressing critical maternal and fetal health challenges prevalent in rural settings, particularly in India. As highlighted by UNICEF, maternal mortality remains a key health indicator, with preventable and treatable causes contributing significantly to maternal deaths.<sup>5</sup> Access to timely and quality maternal healthcare services is paramount, especially for expectant mothers in hard-to-reach and vulnerable communities. By developing an indigenous ultrasound scanner tailored for maternal and fetal healthcare, this project directly aligns with UNICEF's objectives of enhancing the continuum of care at antenatal stages in India.

Furthermore, initiatives such as the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) and Janani Shishu Suraksha Karyakaram (JSSK) talk about the government's commitment to reducing maternal mortality and improving maternal and child health outcomes. By developing an affordable and user-friendly ultrasound scanner, the project aims to extend the benefits of advanced healthcare technology to underserved rural communities. This aligns with the objectives of the PMSMA and JSSK schemes, which seek to provide free maternity services and improve access to emergency obstetric care in India.

In a country with 1.38 billion people, many now equipped with internet connections and smartphones, it is still difficult to find more than a handful of examples of digital technology being widely used to significantly impact healthcare outcomes. Even though there are about 4,308 start-ups officially registered in the health-tech domain, they are unable to scale up due to multiple challenges like regulatory roadblocks, access to appropriate capital and markets, lack of incentives to adopt innovative practices, market inefficiencies, and high barriers to entry, to name just a few.<sup>6</sup> Collaborative research partnerships foster knowledge exchange, facilitate technology transfer, and accelerate scientific breakthroughs. By training personnel at esteemed institutions like IITM, this project not only addresses the pressing healthcare needs but also contributes to building the country's research capacity. Through the development of local expertise and research strategies, it lays a foundation for sustainable healthcare solutions and advances India's position as a leader in healthcare innovation and research. It, in turn, creates employment opportunities, promotes economic growth, and positions India as a hub for healthcare innovation.

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<sup>5</sup><https://www.unicef.org/health/maternal-and-newborn-health#:~:text=Severe%20bleeding%2C%20high%20blood%20pressure,are%20at%20risk%20by%202030.>

<sup>6</sup> <https://www.niti.gov.in/sites/default/files/2022-02/AIM-NITI-IPE-whitepaper-on-Blended-Financing.pdf>

## 4.2.2 Efficiency

### Human resource utilization

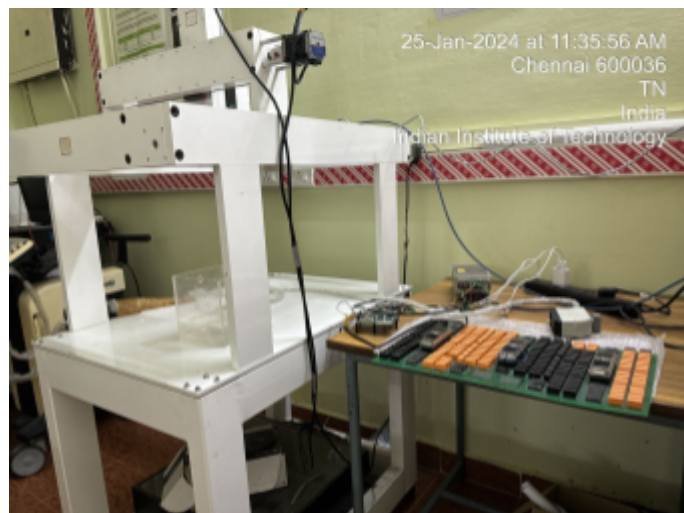
The project has demonstrated remarkable efficiency in several key areas, particularly in human resource utilization and reduction of import dependence. Through targeted engagement and training initiatives, 13 engineering graduates, primarily at the entry-level, have been equipped with essential skills in electronic design, printed circuit board(PCB) design, hardware testing, hardware programming, and application software development. This proactive approach not only **fosters skill development** but also empowers local talent to contribute effectively to the project's objectives.



*Image of the core team*

### Reduction in Import Dependency

The project's focus on indigenous development has led to a significant reduction in import dependency. Upon completion of the design and development phase, only one item(crystal sensor), valued at less than INR 50,000, will need to be imported, compared to the typical cost of a scanner with similar specifications, which is approximately 15 lakhs and often entirely imported and assembled. This streamlined approach contributes to the **nation's self-reliance and economic resilience**.



*Workstation at the Applied Mechanics Department where the Prototype was developed*

### Indigenous After-Sale Service for Product: Cutting Costs

The prototype's local service capability and its potential for enhanced technology upgrades offer significant advantages. Despite the unavailability of the crystal sensor in India necessitating imports, local handling of mechanical or electrical wiring soldering repairs is feasible. Additionally, all other components of the prototype, being indigenous, can also be serviced locally. This emphasis on local servicing greatly contributes to minimizing the expenses involved in indigenous after-sale service for the product.

### Optimal Team Dynamics and Cross-Departmental Collaboration

In terms of team dynamics, the project has maintained an optimal team size, with 17 individuals actively involved in 2022-2023, and a consistent team size ranging between 9-12 members at any given time. Leveraging cross-departmental collaboration, experts from various disciplines, including Computer Science, Electronics, and Engineering Design, have synergized their expertise to address multifaceted challenges. This collaborative approach ensures comprehensive problem-solving and **harnesses the collective strengths of diverse skill sets**. We understood that the manpower costs such

as salaries of the team members/students were being utilized through the CIFCL funding.



*Workstation at the Applied Mechanics Department*

### Monitoring and Evaluation

The project's planning and execution were guided by a clear understanding of technical milestones and resource requirements. Regular monitoring, through daily oversight and periodic team meetings, ensured alignment

with project objectives and timely progress toward milestones. This approach strikes a harmonious blend between **micro-level attention to detail and macro-level strategic direction**, a noteworthy aspect of the project.

### Fund Utilisation

The project was allocated a funding of INR 1,60,00,000/- for the duration of FY 22-23. The funding was received by IITM only after July, resulting in unspent expenses totaling INR



*Image of the Printed Circuit Board developed by the team*

45,00,000/-at the end of the financial year. These unspent funds were subsequently distributed among expenses related to equipment and other listed expenditures. An amended MoU reflecting these changes was shared with us.

However, the implementing team was unable to provide the fund utilization certificate, preventing us from reviewing the expenditure breakdown.

### 4.2.3 Effectiveness

The prototype developed by the project represents a shift in ultrasound imaging technology, offering performance and affordability. By addressing key limitations of existing systems and introducing innovative features, the solution holds the potential to transform diagnostic practices and improve patient outcomes across diverse healthcare settings.



*Image of the prototype developed*

#### **Technological Advancement:**

The prototype introduces cutting-edge technologies such as Diverging Beam-based Synthetic Aperture Technology (DB-SAT) and Advanced Synthetic Transmit & Receive Aperture (ASTRA) Technology. This would mean a reduction in ultrasound system complexity and yet obtaining better Image quality at higher frame rates. These advancements mark a significant departure from conventional ultrasound techniques, promising improved performance and precision in imaging.

#### **Improved Image Quality and Frame Rate:**

By leveraging DB-SAT and ASTRA technologies, the prototype achieves a remarkable enhancement in both image quality and frame rate. Unlike traditional systems that often compromise one for the other, the prototype demonstrates up to an 8x improvement in frame rate without sacrificing image clarity, thus ensuring superior diagnostic accuracy.

#### **Cost-Effectiveness and Competitiveness:**

Despite its advanced features, we were told that the prototype would remain cost-effective and competitive. Indigenous development ensures affordability while local

service capabilities and seamless upgrade options make it a better choice for healthcare providers seeking reliable, high-performance ultrasound systems. The precise cost and competitiveness, however, can only be assessed upon the prototype's release as a product into the market.

**Enhanced Diagnostic Capabilities:**

The prototype offers consistent focus throughout the entire image which sets it apart from existing technologies, which typically have limited focal zones. This feature not only improves diagnostic accuracy but also enhances the overall user experience, enabling comprehensive and detailed examinations.



Image of the Motherboard developed for the prototype

**Potential for Market Penetration:**

With its superior performance, affordability, and versatility, the prototype holds the potential for market penetration in healthcare settings. Its ability to overcome the limitations of current technologies and provide seamless upgrade options ensures long-term relevance and competitiveness in the evolving healthcare landscape.

**Competitive Edge of the Prototype**

Typical Specification	Entry / Lower mid-end	Upper-Mid end	Current Prototype (USP)	High End
Technology	Conventional Focused	Conventional Focused	Proprietary Technology	Conventional Focused
Number of active Transducer elements (Transmit/ Receive)	32/32	64/64	8/64	128/128
No. of Focus (#F)	Limited {1-4}	Limited {1-4}	Auto Focus Through out image	Limited {1-4}
Frame-Rate	1	1	8	1



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(for N x depth)	{{(tdN)*#F}}	{{(tdN)*#F}}	{{(tdN)}}	{{(tdN)*#F}}
<b>Image Quality</b>	Poor	Better	Good	Good
<b>Modes</b>	B&W, Doppler	B&W, Doppler, Duplex	B&W, Doppler, Duplex, elastography	B&W, Doppler, Duplex, elastography
<b>New modes/feature upgrades</b>	Hardware Limited	Hardware limited	Software upgradable	Hardware and software upgrade required

The team actively sought input from medical professionals to gauge the practicality of the prototype. After these consultations, the prototype underwent iterative improvements aimed at enhancing its efficacy. Plans are underway to commence field trials in the upcoming quarter of the next fiscal year, during which medical professionals will be invited to review and provide feedback on the prototype's performance.

### 4.2.4 Coherence

The coherence of the project to the Indian setup is high, considering the current landscape of research and development expenditure, particularly in the medical devices sector. India's comparatively low expenditure on research and development, standing at 0.7% of GDP in 2018, underscores the need for innovative solutions to address healthcare challenges. In contrast, countries like the United States, China, and Israel allocate a significantly higher proportion of their GDP to R&D, reflecting the importance placed on technological advancement in these areas.<sup>7</sup>

The Indian government's prioritization of medical devices under the 'Make in India' program underscores the strategic importance of strengthening the manufacturing ecosystem in this sector. With India ranking as the fourth largest medical devices market in Asia, there exists a clear opportunity to enhance domestic manufacturing capabilities to meet the growing demand for healthcare services.

Despite the growth in the healthcare industry, access to quality and affordable healthcare remains uneven across the country.<sup>8</sup> The medical devices sector, including

<sup>7</sup>

<https://economictimes.indiatimes.com/news/india/indias-rd-spends-amongst-the-lowest-in-the-world-niti-aayog-study/articleshow/93024586.cms?from=mdr>

<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10292032/>

ultrasound scanners, plays a crucial role in addressing these disparities. However, reliance on imports and the dominance of multinational corporations in manufacturing contribute to accessibility and affordability challenges.

In this context, the efforts of the Indian Institute of Technology Madras to develop cost-effective ultrasound scanners tailored for rural primary healthcare centers are highly relevant. Through the support of initiatives like the CIFCL-supported CSR program, the project endeavors to design and fabricate full-body ultrasound scanners with advanced features and AI-assisted capabilities. The additional advantage is the capability of local service capability. By leveraging technological advancements, the project aims to improve access to maternal and fetal healthcare in underserved areas, aligning with the objectives of the 'Make in India' initiative and addressing critical gaps in the healthcare ecosystem.

#### **4.2.5 Impact**

##### **Immediate Impact**

- The successful filing and subsequent awarding of patents for the technology employed in the prototype enhance India's standing as a hub for innovation and technological excellence, thereby advancing the goals of the Make in India initiative. We were informed that numerous patents for the technology utilized in this prototype were filed between 2016 and 2019 by research 'Inventors or Individuals' at IITM, with a significant portion of them having been granted.
- The project's focus on enhancing healthcare accessibility and improving maternal and fetal health outcomes aligns directly with Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being) and SDG 10 (Reduced Inequalities).
- The development of the prototype has resulted in heightened awareness and education regarding advanced diagnostic imaging technologies. We were informed that numerous technological advancements incorporated into the prototype have been documented and published in peer-reviewed journals.
- The introduction of proprietary technology in the prototype drives innovation and progress in the field of diagnostic imaging, contributing to the advancement of healthcare technologies.

##### **Long-Term Impact:**



- Healthcare professionals are empowered with advanced diagnostic capabilities, enabling them to provide better patient care and make informed clinical decisions.
- The prototype's cost-effectiveness and versatility extend access to diagnostic imaging technology in underserved areas, addressing healthcare disparities and improving healthcare delivery.
- The enhanced diagnostic accuracy provided by the prototype will contribute to the early detection and intervention of pregnancy-related complications, ultimately leading to reduced maternal mortality rates.
- Through superior imaging quality and real-time capabilities, the prototype aids in monitoring maternal and fetal health, resulting in improved pregnancy outcomes and maternal-fetal well-being.
- By offering a cost-effective alternative to conventional ultrasound scanners, the prototype reduces the financial burden on healthcare institutions and patients, making advanced diagnostic imaging more accessible and affordable.

#### **4.2.6 Sustainability**

The sustainability of the project is paramount for its long-term effectiveness and enduring contribution to societal welfare. From an impact assessment perspective, the project exhibits strong sustainability across various dimensions.








- Environmentally, its emphasis on indigenous development reduces reliance on imported technologies, consequently lowering carbon footprint and promoting sustainable consumption patterns.
- Socially, the project's focus on enhancing healthcare accessibility in underserved areas fosters social inclusion and equity, addressing healthcare disparities and enhancing community well-being.
- Economically, by offering a cost-effective alternative to conventional ultrasound scanners, the project alleviates the financial burden on healthcare institutions and patients, ensuring continued affordability and accessibility of advanced healthcare services.
- Moreover, its emphasis on indigenous development and local service capabilities supports economic growth and job creation within the healthcare sector, contributing to long-term economic sustainability.
- Technologically, the project's commitment to proprietary technology and continuous innovation ensures that the prototype remains at the forefront of diagnostic imaging, sustaining its relevance and competitiveness in the market.

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- Through regular updates and software enhancements, the project ensures the prototype's adaptability to evolving healthcare needs and technological advancements, thereby maintaining its long-term impact on healthcare delivery.

Ongoing monitoring and evaluation will be essential to address emerging challenges and ensure the sustained impact of the project in the years to come.

### 4.3 SDG Alignment

SDG	Contribution to SDG	SDG Target	SDG	Contribution to SDG	SDG Target
	<p>✓ By enhancing diagnostic capabilities and improving access to quality healthcare services, the project contributes to SDG 3, ensuring healthy lives and promoting well-being for all.</p>	<p><b>TARGET 3-1</b></p>  <p>REDUCE MATERNAL MORTALITY</p> <p><b>TARGET 3-2</b></p>  <p>END ALL PREVENTABLE DEATHS UNDER 5 YEARS OF AGE</p> <p><b>TARGET 3-7</b></p>  <p>UNIVERSAL ACCESS TO SEXUAL AND REPRODUCTIVE CARE, FAMILY PLANNING AND EDUCATION</p> <p><b>TARGET 3-8</b></p>  <p>ACHIEVE UNIVERSAL HEALTH COVERAGE</p>		<p>✓ By focusing on maternal and fetal healthcare in underserved areas, the project addresses inequalities in healthcare access, supporting SDG 10's goal of reducing disparities within and among countries.</p>	<p><b>TARGET 10-2</b></p>  <p>PROMOTE UNIVERSAL SOCIAL, ECONOMIC AND POLITICAL INCLUSION</p>

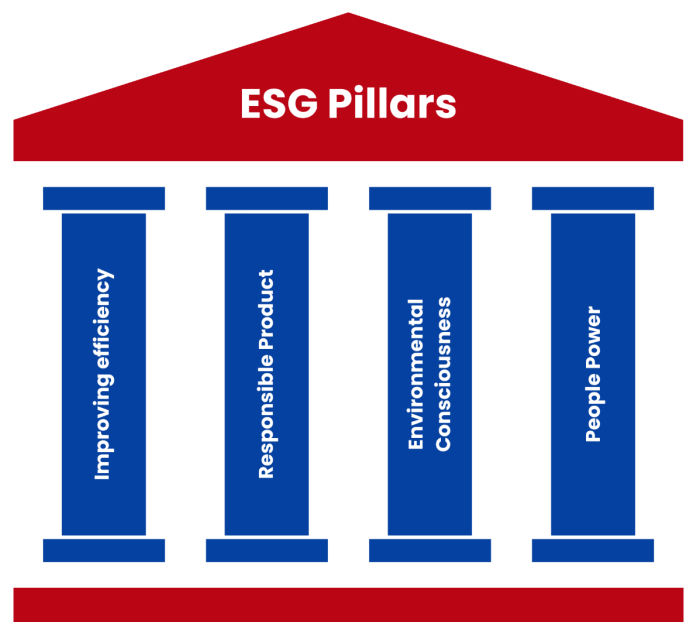
# Impact Assessment Report – Indigenous State of Art Ultrasound Scanner for Maternal and Fetal Healthcare Project

	<p>✓ The development of indigenous ultrasound technology represents a significant stride towards advancing innovation and building resilient infrastructure, aligning with SDG 9 objectives.</p>	<p><b>TARGET 9-2</b></p>  <p>PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION</p> <p><b>TARGET 9-4</b></p>  <p>UPGRADE ALL INDUSTRIES AND INFRASTRUCTURES FOR SUSTAINABILITY</p> <p><b>TARGET 9-5</b></p>  <p>ENHANCE RESEARCH AND UPGRADE INDUSTRIAL TECHNOLOGIES</p> <p><b>TARGET 9-A</b></p>  <p>FACILITATE SUSTAINABLE INFRASTRUCTURE DEVELOPMENT FOR DEVELOPING COUNTRIES</p> <p><b>TARGET 9-B</b></p>  <p>SUPPORT DOMESTIC TECHNOLOGY DEVELOPMENT AND INDUSTRIAL DIVERSIFICATION</p>		<p>✓ Collaborations with medical professionals, governmental bodies, and corporate partners demonstrate a commitment to fostering partnerships for sustainable development, in line with SDG 17 principles.</p>	<p><b>TARGET 17-17</b></p>  <p>ENCOURAGE EFFECTIVE PARTNERSHIPS</p>
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#### 4.4 ESG Integration

CIFCL, as a leading non-banking finance company, recognizes the importance of integrating sustainability practices into its operations and promoting a more equal and sustainable world.

The ESG pillars are supported by the ESG goals. It emphasizes the aim to address global challenges, foster innovation, and promote responsible business practices.



ESG Pillars	ESG Goals	Alignment with the Project
Improving efficiency	<ul style="list-style-type: none"> <li>Implement best-in-class data protection tools and IT governance to ensure 0% data breaches in customer data protection</li> </ul>	-
Responsible Product	<ul style="list-style-type: none"> <li>Chola will continue to focus on providing credit to transport entrepreneurs, new-to-credit customers, and first-time buyers and users</li> <li>Support a greener environment through Electric Vehicle (EV) financing</li> </ul>	-
Environmental Consciousness	<ul style="list-style-type: none"> <li>Establish green operational measures across all the office branches and raise awareness among employees and key stakeholders including customers, visitors, CSR recipients, etc</li> </ul>	✓

People Power	<ul style="list-style-type: none"><li>• Enabling Chola's people workforce through continuous learning and development programs</li><li>• Dedicated focus on environmental sustainability CSR projects towards contributing to the global cause</li></ul>	
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## Chapter 5: Challenges Faced by the Project:

### Manpower Acquisition and Retention:

- Difficulty in finding and retaining skilled manpower due to the high demand for the required technology skill set.
- Many trained individuals left for private sector jobs after gaining skills, leading to manpower shortages and turnover.

### Financial Constraints:

- Limited funds during the initial project research phase posed a significant challenge, hindering the project's progress and ability to execute various activities.

### Technical Hurdles:

- Technical challenges emerged throughout the project phase, requiring innovative solutions and expertise to overcome.

### Time Constraints:

- Tight timelines necessitated efficient project management and prioritization of tasks to ensure timely completion despite constraints.

### Skill Upgradation Efforts:

- Significant personal hours were dedicated to training activities, reflecting the project's struggle with skill retention and development.
- Efforts to upskill individuals and provide necessary training were essential but time-consuming, diverting resources from other project activities.

## Chapter 6: Best Practices

- From the study, it became apparent that the institute does not receive funding specifically designated for translation work. Instead, government funding agencies support the Proof-of-Concept and technology development phases. However, when the product prototype for a specific application reaches the invoicing or product stage, it receives support from private investors, venture capitalists, and other funding sources. It is challenging to secure funding for prototype development, especially for expensive devices, particularly when multinational corporations are dominating the market. This project has been instrumental in facilitating this translation process.
- The project leverages Indian students as knowledge bearers, tapping into their expertise and enthusiasm to drive innovation forward. Involving students in the project, not only enhances their practical skills but also fosters a culture of collaboration and knowledge-sharing within the academic community.
- The project aligns with the Make in India initiative, emphasizing indigenous development and manufacturing of advanced technologies. By prioritizing local innovation, production, and servicing capability, the project contributes to the growth of India's economy and technological capabilities, while reducing dependency on imported technologies and contributes to minimizing the expenses involved in indigenous after-sale service for the product.
- The project receives support from CIFCL, aligning with the new clause allowing companies to invest CSR funds in research and development initiatives. This partnership between academia and industry demonstrates a collaborative approach to innovation, leveraging corporate resources to support research initiatives that benefit society and align with national development goals.
- Through training programs, workshops, and collaborative initiatives, the project fosters skill development and knowledge dissemination, empowering individuals and organizations to contribute to technological advancement.
- The project actively engages with the community and collaborates with various stakeholders to ensure alignment with societal needs and priorities. By soliciting feedback, evaluating outcomes, and incorporating lessons learned into iterations, the project remains agile and responsive to evolving challenges and opportunities.

## Conclusions

As we conclude the evaluation of the Indigenous State of Art Ultrasound Scanner for Maternal and Fetal Healthcare project, it becomes clear that the transition from prototype development to product implementation offers substantial promise in tackling critical healthcare obstacles. With a focus on indigenous research and development, this initiative seamlessly aligns with the objectives of the Make in India initiative, aiming to drive innovation, bolster economic growth, and enhance healthcare accessibility.

Looking forward, it's imperative to conduct another impact assessment once the prototype evolves into a market-ready product. This evaluation will be vital in determining whether the anticipated impact is indeed materializing in real-world healthcare scenarios. It will consider factors such as evaluating actual healthcare impact, assessing market penetration, leveraging Make in India potential, monitoring long-term sustainability, fostering stakeholder collaboration, and evaluating cost reduction benefits. Given the substantial investment in R&D and the strategic importance of the project, such an assessment holds significant potential to guide future policy decisions, investment strategies, and healthcare interventions.

## Acknowledgment

We would like to express our gratitude to and appreciation to the Implementing partner Indian Institute of Technology, Madras whose inputs have made it possible to understand the project, and its phases involved and complete the report. This study would not have been possible without their cooperation and facilitation of discussions.

We would like to express our gratitude to the leadership and team at Cholamandalam Investment Finance Company Limited who trusted us with the project and guided us with all the initial discussions. Their continuous encouragement and patience have been a great morale to us through the implementation of the study.

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# SOCIAL IMPACT ASSESSMENT 2023



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# ISHA'S SADHANAPADA Program

A CSR Initiative of Cholamandalam  
investments & finance ltd.

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# 1. Introduction

In India, young people confront a multitude of obstacles, spanning academic pressures and career uncertainties to societal demands. Achieving inner balance is essential for their mental health, providing the foundation for resilience amidst pressures. Inner equilibrium enables youth to adeptly tackle challenges, exercise sound judgment, and foster meaningful connections. Additionally, it fosters the growth of emotional intelligence, a critical element for both personal and career achievements. Amidst the rapid evolution of society, the quest for inner harmony plays a pivotal role in shaping a generation capable of making positive contributions to India's social and economic landscape.

To support the youth in exploring their potential, aligning with their values, and leading purpose-driven lives, Cholamandalam Investment and Finance Company Limited has been championing the Sadhanapada program initiated by the Isha Foundation. The core objective of this program is to inspire individuals to live consciously and harmoniously, fostering a deep sense of connection with the world around them.

## About Chola

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Cholamandalam Investment and Finance Company Limited (CIFCL) is a prominent financial institution of the Murugappa Group in India, specializing in vehicle finance, home loans, and SME loans. As part of its commitment to Corporate Social Responsibility (CSR), CIFCL engages in various initiatives aimed at community development, individual empowerment, and social welfare. Through its varied CSR activities, CIFCL actively contributes to the holistic development of the communities it serves, fostering a positive impact on education, healthcare, environment, and the overall well-being of society. One of its flagship programs is to support the Sadhanapada program offered by Isha Foundation.

## About Isha Foundation

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Isha Foundation is a non-profit spiritual organization founded by Sadhguru Jaggi Vasudev in 1992. Headquartered in Coimbatore, India, the foundation is dedicated to promoting spiritual well-being and fostering global harmony. Sadhguru, a mystic and spiritual teacher, envisioned Isha Foundation as a space for individuals to explore and experience their inner dimensions.

One of the foundation's notable initiatives is the Inner Engineering program, designed to provide tools and techniques for personal transformation and self-realization. The program encompasses yoga and meditation practices, aiming to enhance mental clarity, emotional balance, and overall well-being.

Isha Foundation is also renowned for its iconic Dhyanalunga, a unique meditative space and energy center located at the Isha Yoga Center in Coimbatore. The center attracts people from around the world, offering a meditative atmosphere and hosting various programs and events to support spiritual growth.

The foundation is actively involved in environmental and social initiatives, including tree planting campaigns and rural development projects. Through its diverse activities, Isha Foundation strives to inspire individuals to live consciously and harmoniously, fostering a sense of interconnectedness with all of existence.



## 2. Need for the program

The quest for inner harmony is essential in navigating the complexities of modern life. In a fast-paced and often demanding world, individuals face numerous stressors, from work pressures to personal challenges, that can disrupt mental and emotional balance. Finding inner harmony becomes a crucial need for overall well-being. Emotional and mental well-being significantly influences physical health. Chronic stress and emotional turmoil can contribute to various health issues, including cardiovascular problems, weakened immune systems, and mental health disorders. Therefore, the pursuit of inner balance serves as a preventive measure, enhancing resilience and reducing the risk of stress-related ailments. When individuals are grounded and at peace within themselves, they are better equipped to connect authentically with others, fostering empathy, understanding, and positive communication. The Sadhanapada program was thus created to foster individual well-being which further ripples through communities, promoting a collective sense of peace, understanding, and interconnectedness.

## 3. About Chola – ISHA Sadhanapada Project

Understanding that the Sadhanapada program extends beyond individual wellness and contributes to the creation of harmonious and a more compassionate society, Chola CSR have been supporting this program since the last two years. The Chola – ISHA Sadhanapada program offered at the Isha Yoga Centre in Coimbatore, India, is a seven-month residential programme for inner transformation offered to individuals above 20 years of age. This life-transforming programme, which is offered free of cost to the participants, has attracted approximately 1,200 seekers from 42 different countries, most of them in their early 20s. Whether one is looking to take a sabbatical from work, a gap year from studies, seeking spiritual growth or time away for oneself, their time at the consecrated space within ISHA Foundation, is an investment towards finding inner balance, clarity and intensity within oneself.

For the year 2022-23, a cost of Five Crore Fifty Lakhs was allocated for the program which was totally supported by Chola. This money was used to support the program expenses for **1026 Indian participants** who underwent the 7 month residential program during this period.



The cost breakup of the program is as follows:

Expenses	Amount in Rs.	
Capital Expenses		
Purchase of Hardware & Software	31,01,250	67,60,423
Building Sadhanapada Seva Stations	36,59,173	
Program Expenses		
Conducting Awareness Programs	7,05,363	4,82,39,577
Infrastructure Maintenance Cost	16,67,500	
Program Operations	57,04,367	
Food Expenses (Rs.190/day /participant)	4,01,62,347	
TOTAL		5,50,00,000

Only 12% of the money was utilized for the Capital expenses and 88% of the money supported by Chola was utilized for the running of the Sadhanapada program.

## 4. Objective & Scope

Social Audit Network (SAN) India was approached by Chola to conduct Social Impact Assessment of the Sadhanapada program implemented by Isha Foundation. The SAN India team comprising of Ms. Latha Suresh and Ms. Karuna Luthar, social auditors of SAN India, conducted the assessment during the period January to March 2024. They were assisted by their IT backend team for online data collection and analysis.

The main objective of the assessment was to provide Chola with sufficient information about the Sadhanapada project in terms of its Relevance, Efficiency & Effectiveness, Sustainability of the project and the Social Impact it had on the participants who underwent the program in 2022-23. Suggesting recommendations for effective and sustainable strategies for future implementation were also part of the objective behind the assessment.

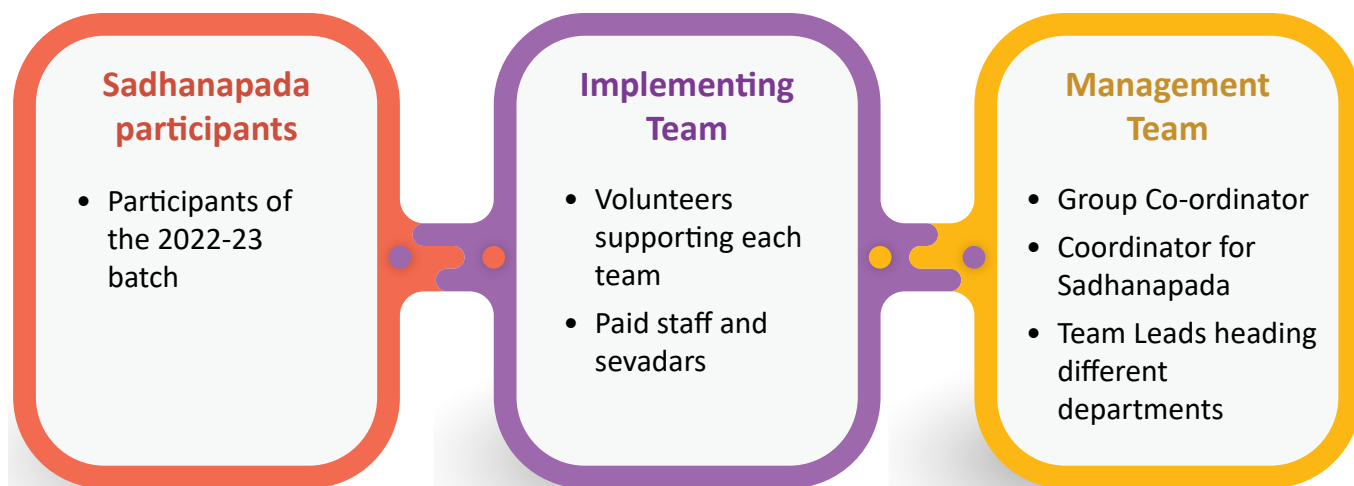
The scope of the study was for the period July 2022 to March 2023.

## 5. Stakeholders

The Sadhanapada program is held within the Isha Foundation campus at Velliangiri hills. The stakeholders of the Sadhanapada project supported in 2022-23 include the **Management team** who overlooks every aspect of the program and the **Isha volunteers** who implement the program within the campus. The **80 person team** consists of long-term volunteers who have been there for at least 3 years (Poornangas), long-term volunteers who are there for at least a month or more, **paid staff** who look after essential administrative tasks and **sevadars** for cleaning and maintenance. A maximum of 1200 participants are enrolled in the program

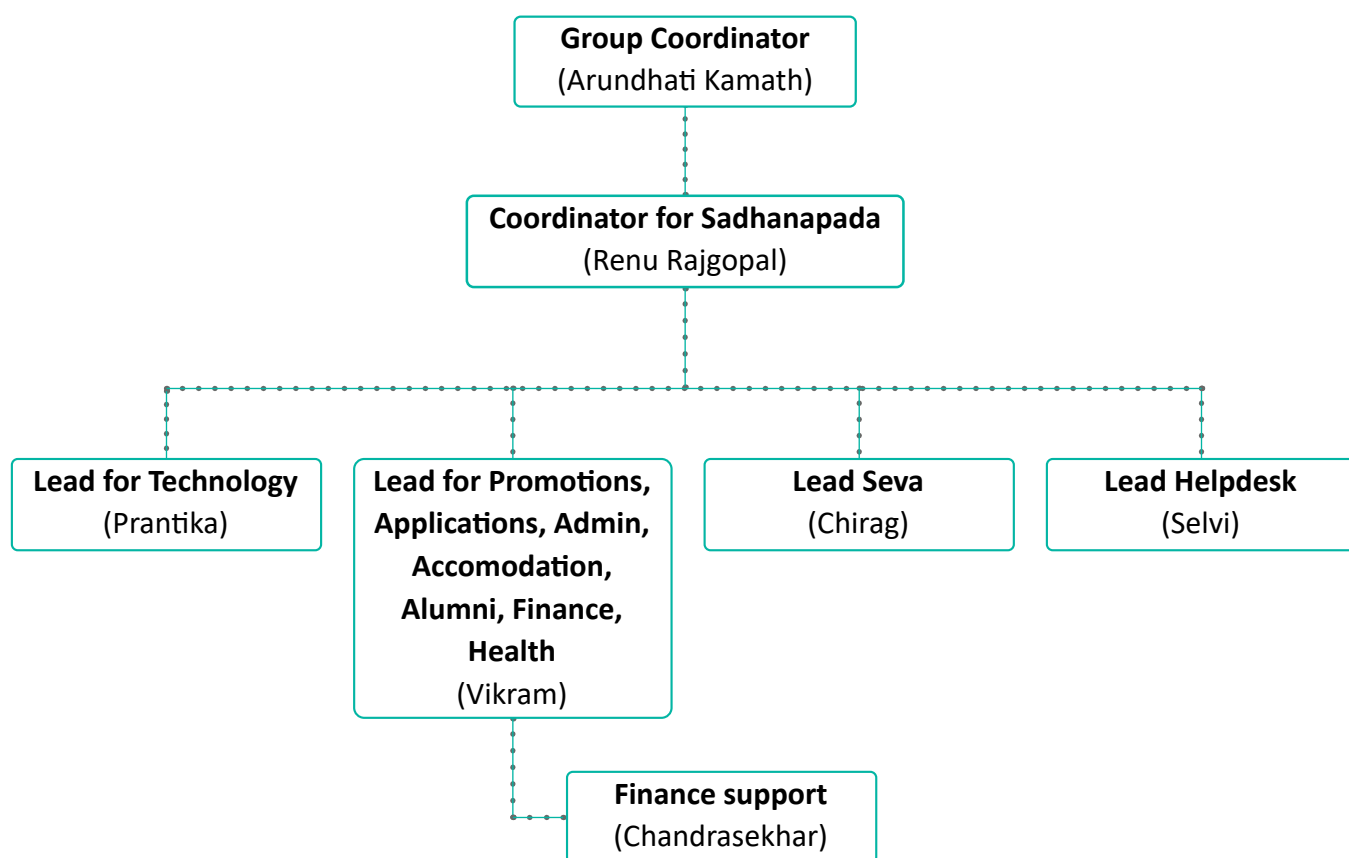






*Categories of stakeholders*

**Direction and guidance for the program is provided by Sadhguru** and the management team who strive to fulfill the vision of bringing clarity and balance to in the minds of people.



*Organogram of the Sadhanapada program*

## 6. Methodology for Stakeholder Consultation

The SAN team spent two days, January 29<sup>th</sup> and 30<sup>th</sup> 2024, at the Isha Foundation to interact with the team delivering the program and to validate the overall process followed by the program. The methodology used for the assessment was a blend of qualitative and quantitative techniques.

S.No	Stakeholder	Methodology	No. Consulted
1	Participants of Sadhanapada program held in 2022-23	Online Questionnaire	310 responses
2	Sadhanapada participants of 2022-23 working at Isha Foundation, CBE	Focus Group Discussions	16
3	Isha Management team / Sadhanapada implementing Team	Focus Group Discussions (FGD) / Personal Interviews	10

The qualitative assessment included a mix of in-depth interviews, semi-structured and un-structured interviews with the Sadhanapada team and participants.

The SAN team interacted with the participants who attended the program in the year 2002-23. A structured interview guide was used to elicit relevant data from the stakeholders. FGD participants who were comfortable assigning a quantitative number to certain aspects of their experience and benefits gained provided scores, while others gave qualitative responses to respond to the assessment.

The quantitative assessment was administered through an online survey covering topics about the various modules of the Sadhanapada program, its effectiveness and its intended outcomes and impact

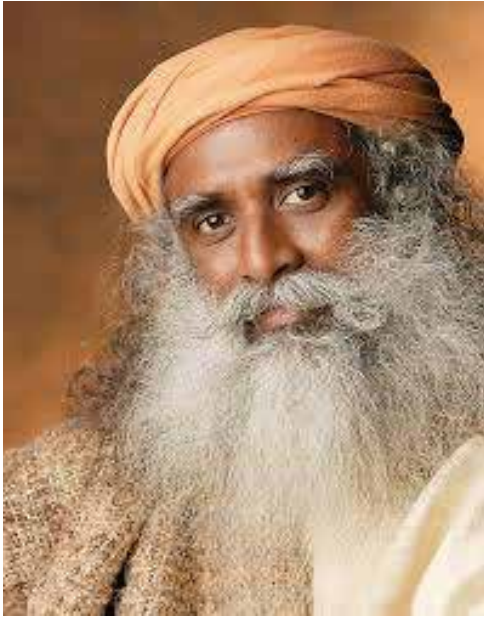
Key informants such as project head, project coordinators and field staff formed another integral part of the data collection process.

The tools used to elicit information from the stakeholders included:

- **Online Questionnaire:** An online questionnaire (using SurveyMonkey app) was sent to all the 1026 Sadhanapada participants to obtain feedback.
- **Direct Interviews:** Personal Interviews were conducted with a structured interview guide
- **Observation:** The SAN team interacted with the key stakeholders to understand the program design and observed classroom sessions and Seva programs to understand a 'Day in the Life of a Sadhanapada participant'.
- **Secondary Data Analysis:** Data provided by the Sadhanapada team was used for analysis. Information was also sourced from Isha's social media posts and from the Isha website (<https://isha.sadhguru.org/in/en/volunteer/sadhanapada>).



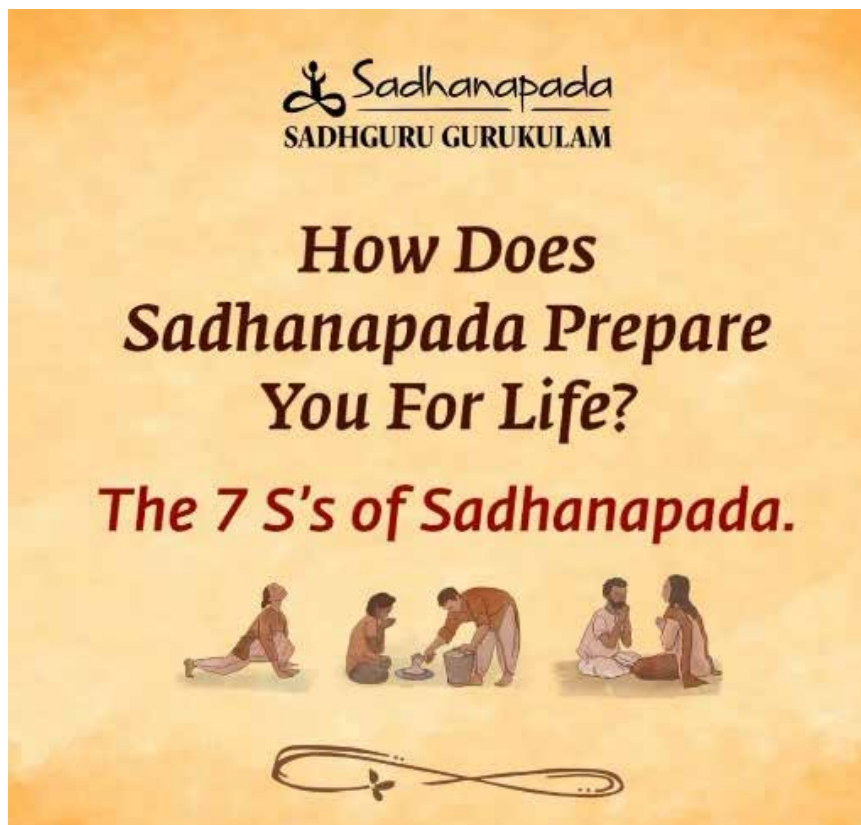
## 7. Report on Performance



*How effective a life you will lead is essentially determined by what is the level of clarity you have and how much balance you have. This will allow you the freedom to traverse life as you wish.*

**- Sadhguru**

Finding inner harmony is intrinsic to personal growth, allowing individuals to explore their potential, align with values, and lead purposeful lives. It is a personal journey, and different approaches may resonate with different individuals. It often involves a combination of various practices, patience, and a commitment to self-discovery and growth.



The residential Sadhanapada program evolved by the Isha Foundation is designed to **help participants enhance their physical, mental and emotional health and well-being**. The objective is for people to retain the balance and clarity they achieve through the program once they go back to their day to day lives.

The 7-month program, which is free for participants, is designed to support these objectives.

The **7 S's of Sadhanapada** include:

- a) Sadhana: Guided yoga and meditation practices
- b) Seva: Supporting Isha's activities across various departments, areas and events
- c) Space : Experiencing living in consecrated spaces
- d) Sadhguru Darshan: Opportunity to be in Sadhguru's Presence
- e) Schedule : A long-lasting consistent schedule of activities for sadhana, seva, self-reflection, sharing thoughts, sports and personal time contributes to building the foundation for lifelong physical and mental strength
- f) Support : Mechanisms for seeking support from the implementation team is provided through one-on-one and group meetings.
- g) Spiritually significant time: the activities are conducted between the summer solstice and winter solstice, a time of new beginnings and growth throughout the Northern Hemisphere.

Sadhguru's vision is for 10,000 people to undergo the program every year. At present, this residential program is offered for about 1200 people including those from India and overseas.

## Commencement of the Program

---

Promotions start in November- December for the following July intake. The duration of the programme is from Guru Purnima day (in July) every year to Mahashivratri (February/March), approximately around 7 months.

The application process is rigorous and detailed, and takes into account various aspects such as their life situations, family background, health, financial situation. This is intentionally a lengthy and in-depth process, with the objective of gauging participants' ability to successfully complete the program.

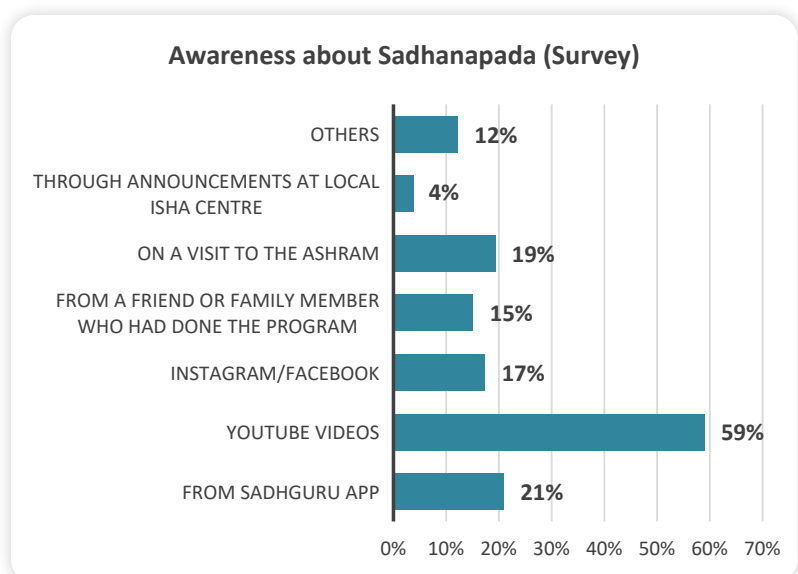




*Sadhanapada Application Process*

## Awareness of the program

Participants learn about the Sadhanapada program from **online media, the Sadhguru app and roadshows**. From the personal interviews of 16 alumni, 8 people had initially heard about the programme from social media, 4 from earlier participants, 2 when they had visited the Ashram for an event and 2 from their local centres.



**Referrals and word of mouth play an important part in creating awareness.** In the current batch, 93% of the participants had spoken to an alumnus before applying for the program.

**Social media played a vital role** in creating awareness about the Sadhanapada program. 76% of the participants who responded to the survey knew about the program through this channel, 59% from YouTube videos and 17% from Facebook/ Instagram posts. 21% learned of the programme from the Sadhguru app.

During the FGD, 93% of the Sadhanapada participants said they had spoken to an alumnus of the program before enrolling.

## Who can apply

---

Those aged **18 years and above**, who have completed the Inner Engineering program and have been initiated into the Shambhavi Mahamudra Kriya, are eligible to apply.

A **pre-requisite is the Inner Engineering program** of 4 to 7 days duration which introduces participants to various yogic practices, including asanas (physical postures), pranayama (breath control), and kriyas (specific energy-enhancing movements), promoting physical health and vitality. The Shambhavi Mahamudra Kriya is a powerful, 21-minute energy technique aimed at aligning the body, mind, and inner energy, fostering mental clarity and emotional balance. The program also incorporates guided meditations to help participants develop a regular meditation practice, enhancing focus, relaxation, and inner peace.

## Assessment and confirmation

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The application forms are available online throughout the year at the Isha website, <https://isha.sadhguru.org/in/en/volunteer/sadhanapada> Annually, over 30,000 application forms are received but in general, only about 10% of applicants fulfill the main criteria for the program. All the applicants are contacted and those who have not completed the Inner Engineering program or need to fulfill certain requirements for health or personal reasons, are asked to reapply. A unique id is given to each applicant.

*3 of the alumni interviewed had to complete Inner Engineering before re-applying.*

The Sadhanapada applications team conducts **detailed phone calls with** short-listed participants which can go up to several rounds (5 to 10 calls) before final selection. This is an ongoing process as the team receives new applications every day.

**Health is an important factor** in assessment of the participants. Any serious medical conditions, such as asthma, chronic ailments, allergies, heart conditions, physical disabilities, injuries, and history of mental imbalances/disorders, are disclosed in the profile form and further discussed in the video call to understand whether they would limit participation. About 1600 approvals are sent, expecting a certain number of dropouts. The capacity of the Ashram currently to host people is up to 1200 people.



In the 2022-23 batch, 1026 Indian participants were selected after rigorous screening. The residential Sadhanapada program commenced on July 13<sup>th</sup>, 2022 and was completed on February 18, 2023. The program was held for 220 days.

*In the Yogic culture, the time between the summer solstice and the winter solstice is referred to as Sadhana pada. That is when the natural forces of the planet are supportive for one's growth and sadhana yields maximum results. A focused, dedicated, and consistent effort is needed to transform one's life. The impact of these 7 months stays with you as an insurance for life, building a strong foundation for you to remain unwavering on the path of growth.*

- Sadhguru

90 of the selected participants did not join the course. 185 of them left the course midway. (Refer Annexure 1 for the State-wise list of participants who exited and did not join the program)

**73% of the selected participants successfully completed the course.**

Status	Female	Male	Total	%
No Show	22	68	90	9%
Successfully Completed Program	264	487	751	73%
Exited	66	119	185	18%
<b>Grand Total</b>	<b>352</b>	<b>674</b>	<b>1026</b>	

## Arrival at the Ashram

The participants come to the Isha Foundation campus some time between mid-May to early June for orientation to the powerfully consecrated and energized space of the Isha Yoga Center amid the natural surroundings. On arrival, they are given a tour of the Ashram explaining about the different spaces and guidelines on how to be in each space.





## Feedback on the Recruitment process

*Applicants are generally in three stages of life situations. They have either achieved a great deal but feel unfulfilled, are doing well in various aspects of their life but are looking for the next step or have witnessed difficult situations. Each of these groups of people benefit from the Sadhanapada process, whether it is through moving towards spirituality, getting clarity on what they would wish to do next in their lives and careers or learning how to deal with life situations and flourish. - Prantika, Tech Lead*

*Applicants do not always keep the appointments for video calls. We also have to chase them for data and forms. Each applicant is called a minimum of 6 times before we stop calling. From the 30,000 applicants, almost 70% have not done Inner Engineering which is a pre-requisite. - Application Team Facilitator*

*The preparatory webinars were extremely helpful. I was able to understand what to expect and this helped me to adapt quickly. - Participant*

## Participant profile

**92% were less than 40 years of age**, 6% between 40-50 and 2% were above 50 years of age

Age category	Number	%
Below 21 years	16	2%
21 - 25	282	27%
26 - 30	359	35%
31 - 35	190	19%
36 - 40	101	10%
41 - 45	37	4%
46 - 50	22	2%
Above 50 years	19	2%
<b>Total</b>	<b>1026</b>	

The participants were a diverse group, **belonging to 30 Indian states**. Around 40% of the participants were from South India and around 25% from Western India.

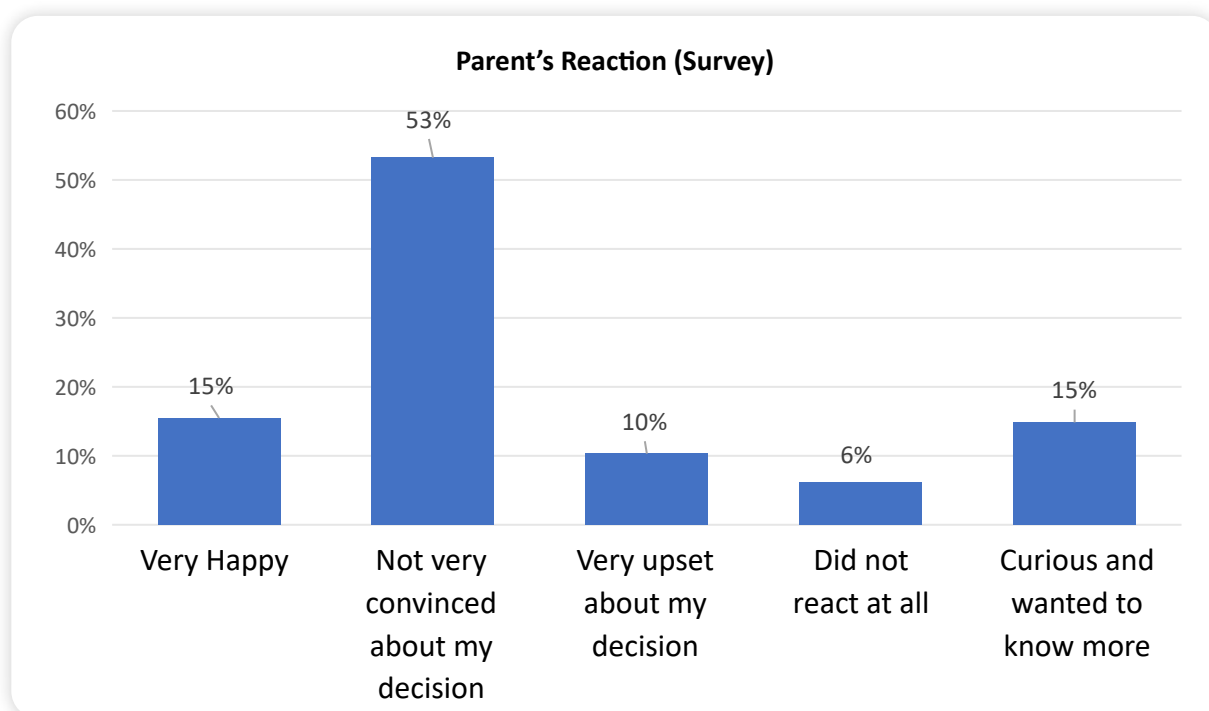


## State wise profile of participants

S.No	State	Number	%
1	Karnataka	184	17.9%
2	Maharashtra	169	16.5%
3	Telangana	97	9.5%
4	Uttar Pradesh	67	6.5%
5	Andhra Pradesh	55	5.4%
6	Tamil Nadu	52	5.1%
7	Gujarat	50	4.9%
8	Madhya Pradesh	48	4.7%
9	Delhi	40	3.9%
10	West Bengal	36	3.5%
11	Rajasthan	35	3.4%
12	Haryana	33	3.2%
13	Bihar	24	2.3%
14	Kerala	24	2.3%
15	Uttarakhand	20	1.9%
16	Jharkhand	15	1.5%
17	Chhattisgarh	13	1.3%
18	Assam	10	1.0%
19	Orissa	10	1.0%
20	Punjab	10	1.0%
21	Himachal Pradesh	7	0.7%
22	Jammu and Kashmir	7	0.7%
23	Goa	6	0.6%
24	Manipur	4	0.4%
25	Chandigarh	3	0.3%
26	Arunachal Pradesh	2	0.2%
27	Tripura	2	0.2%
28	New Delhi	1	0.1%
29	Puducherry	1	0.1%
30	Sikkim	1	0.1%
<b>TOTAL</b>		<b>1026</b>	



Only 15% of the parents of the respondents were happy about their ward joining the program and 15% were curious to know what the program was about. Nearly 63% were not happy with their ward's decision to join Sadhanapada.



## Facilities provided during the course.

**Accommodation** comprises of dormitory-style rooms and bathroom facilities. Separate accommodation is provided for men and women. Accommodation for couples attending the program is provided, subject to availability. Specific **bedding** and **journals** meant only for Sadhanapada participants are provided to everyone.



*Dormitory- style bedroom*



*Bathroom facilities*



The Ashram provides the participants with a **consecrated space** where the natural elements and constant **togetherness with a group of committed seekers** facilitates their spiritual growth. A number of participants hence chose to stay on for an **additional two-month course, Sadhana Intensive**.

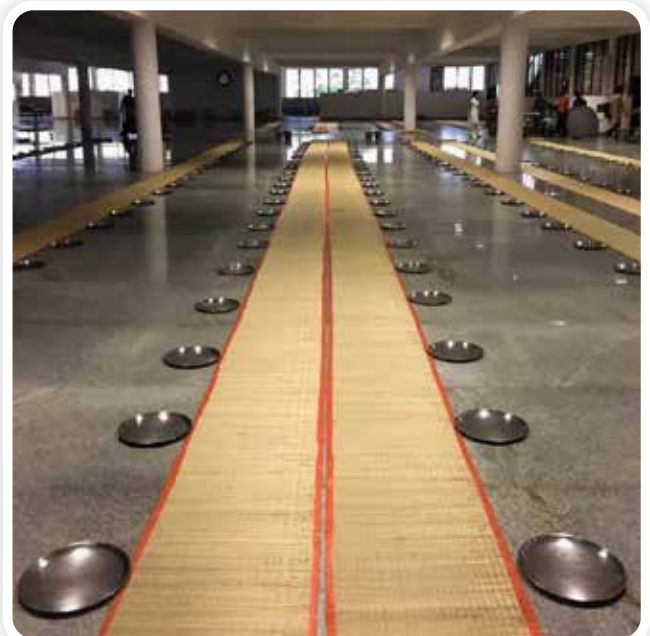
*A consecrated space is created to ensure that, no matter whether you are awake or asleep, whether you are eating food or sitting in the toilet, your spiritual process is still always on. It should not rest. Rest is only for the body, but the rest of it should be on all the time.*

**- Sadhguru**

The Sadhanapada program has introduced a **Sahaya** or Helpdesk system, where participants can log their queries through an app and these are attended by the relevant team lead. Requests may relate to practice corrections or to day-to-day issues, such as the stay area, health issues etc.

The participants are given a list of a limited set of items they can bring, which includes personal essentials. A **department store** is available within the Ashram and online deliveries can be requested if additional supplies are needed.

Two wholesome, vegetarian **meals** are provided, as well as a juice or hot drink or kanji in the afternoon. The first meal is at 10:00 am and the evening meal is at 7:00 pm. The food is served in the Bhiksha Hall and is prepared in the centralized **kitchen**, Akshaya. All the ingredients are **organic** in nature and are **procured locally**. Every meal is freshly prepared and cooked to serve a minimum of 3000 people who eat every day at the Isha campus. The meals are sattvic in nature and do not contain onion, garlic, or green chilli.



*Bhiksha Hall at Isha Foundation*



### The morning meal comprises of the following -

- A seasonal Fruit
- Soaked Groundnuts
- Fresh Salad
- Sundal
- Poriyal or Kootu
- Different varieties of rice (Mixed Rice or Millet or Plain rice) for lunch
- Sambar (if there is no mixed rice)
- Rasam Rice or Curd Rice
- Pickles
- Payasam (on special occasions)

### The evening meal comprises of Tiffin item like dosa, idli, upma etc

- Sambar / Chutney
- Fresh Salad
- Sundal
- Poriyal or Kootu
- One variety rice
- Kanji
- Hot beverages like Tea or coffee are not served at the Bhiksha Hall.

### Participant speak...

*The way the food is prepared and served is so wonderful*

*When I go home for a few days, I have different meals from the family, more like Isha food.*

*I have influenced my family to change the diet.*

## A Day in the Life of a Sadhanapada participant

The daily schedule incorporates specific aspects to further the goals of the program. Each day is filled with activities that enhance stability and health in physical, mental, and emotional aspects as described below.

### a) Yoga practices

Starting with Guru Pooja at 5.30 am, Guided **Hatha Yoga** sessions are held until 7.15 am. Regular attendance is encouraged, and absence of participants is tracked by using a fingerprint device. In case anyone is found missing, the facilitators speak to them personally to offer help and guidance, in order that they can address any needs that are impeding their progress.





*Guided Yoga Session*



*Attendance tracking device*

## b) Temple and consecrated spaces

Participants are given time from 7.30 am to 9.30 am to visit the **Dhyanalinga temple** and complete their personal sadhana (practices) in the various spaces around the Ashram.

## c) Meals

After practices, the morning meal is served in the **Bhiksha Hall**. Food is served in three batches at 10am, 10.30 am and 11 am. Once concluded, participants go to work in their assigned department or area, from approximately 11 am to 5 pm. The evening meal is provided at 7 pm.

## d) Seva

“Seva” is a Sanskrit word meaning *“selfless service” or work performed without any thought of reward or repayment*. A **critical aspect of the program** is that participants learn to perform every task willingly and with total involvement. This element refers to the random assignment of a task to the volunteers.

All Isha departments, approximately 80 in number, give their requirements on the number of volunteers needed to the Sadhanapada team and participants are assigned to these areas. Each department has a **Seva mentor** who communicates with the Sadhanapada team once in two months to provide input on the participants’ engagement. Participants facing any challenges can bring this to the notice of the department Seva mentor or the Sadhanapada team through an app designated for requesting such meetings.



## Departments where Sadhanapada participants volunteered

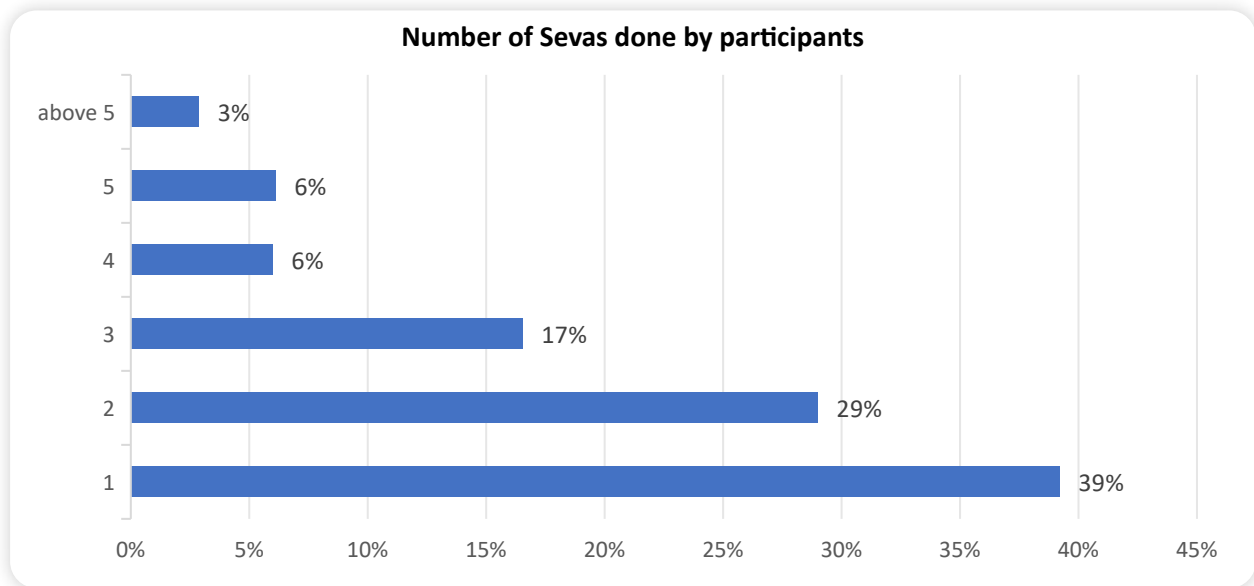
S.no	Seva Dept	Number	%
1	Akshaya Kitchen	121	13.4%
2	Dhyanalinga	92	10.2%
3	Land Maintenance	61	6.8%
4	Sadhanapada	57	6.3%
5	IT / IT - Applications	54	6.0%
6	IPC	50	5.5%
7	Temple - Linga Bhairavi	35	3.9%
8	Archives	29	3.2%
9	Medical (Ashram Clinic)	23	2.5%
10	Isha Health Solutions	21	2.3%
11	E-Media Panel / Emedia Operations	20	2.2%
12	Indian Language Publications	19	2.1%
13	Farmer Producer Organisation (FPO)	17	1.9%
14	Isha Biksha	17	1.9%
15	Ashram Administration	16	1.8%
16	IYC Programs / Ashram Programs	15	1.7%
17	Isha Samskriti	12	1.3%
18	Cottage Accomodation	10	1.1%
19	Finance / Project Finance	10	1.1%
20	Construction	9	1.0%
21	Isha Programs and Communications / NP (Back Office)	9	1.0%
22	IT / IT - Infrastructure	9	1.0%
23	Legal	9	1.0%
24	Shivanga	9	1.0%

52 other departments within Isha had less than 1% each from the participants (*Refer details in Annexure 2*).

The Seva activities help in **physical activity, mental stimulation, and spiritual growth**. 39% of the participants were placed in one Seva activity only during the entire 7 months. 29% in 2 activities and 32% in 3+ activities







Participants had a **mixed reaction** about the Seva component that was allocated to them. This was because the Seva opportunity was given based on the need at the ashram and not based on the skillset of the participants. This was explained by the Sadhanapada team, who mentioned that the key component of the program was that **participants learn to do what is needed** at a given point in time, putting their personal preferences to the side.

*The program is process-oriented and not outcome-oriented. The Sadhana involves a practical aspect of doing whatever is needed, in other words whatever is asked to be done.*

**- Swami Nadija, Program Lead**

The participants who could match their skills with the Seva assigned to them did not complain, but others who had to do things which they were not comfortable with had some issues.

### Participants Feedback...

*The purpose of seva is to overcome limitations in us and to contribute to the ashram functioning, therefore instead of forcing a seva on a participant maybe the opinion and interest of the participant could also be looked into and given some importance as he/she would be better aware of his/her limitations/compulsions in other such fields of seva where he/she can contribute in, so that both parties can benefit via the process*

*I feel that it would be better if participants get a chance to do seva in different departments. It will give them exposure to more diverse situations and people.*

*I feel Seva should change after some time to experience other types of seva and to see how do I apply myself to different conditions and requirements*

*Two aspects of the program that should be enhanced are Weekly and monthly meetings can be more individually introspective and seva departments can offer and enhance skills so that a sense of learning something new keeps it fulfilling and interesting even after the sadhanapada program.*



## Seva hours

The Seva hours start by 11 am after the morning meal and conclude at around 5 pm. After this time, participants are given a break to do their Sadhana, daily tasks such as washing clothes or soak in the atmosphere of the Ashram. Some participants may wish to continue their Seva activities after the evening meal as well.

## Seva Activities

**Deskwork** is required to be done by the Sadhanapada team and participants for different program activities, for which they use **Seva Stations and laptops**. Chola had provided Rs 67.6 lakhs for purchasing laptops and building the stations. The Seva stations are individual floor-based workspaces with a desk and a chair at floor level. The volunteers generally sit cross legged at the workspaces and are free to meditate whenever they want during the working hours to recharge themselves.



*Sadhanapada team using laptops*



*Seva Stations in one of the departments*

Other Seva activities may be at different stations such as **luggage counter and at the farm**. At the luggage counters, they accept deposits of valuables, ensure they are recorded correctly and return them after confirming the identity of the person providing the receipt token. At the farm, Sadhanapada participants help in picking fruit, preparing the natural fertilizer, and putting it in the plants.

While Seva is allocated largely for the entire 7-month period, there are some seva that everyone must experience. One of them is the 10-day Pranadhanam, which incorporates 1 day of silence and 9 days of working in Akshaya kitchen, Bhiksha dining hall or farm. The second requirement is a period of volunteering for Linga seva or for any of the spiritual programs held at Isha Foundation.





*Seva at Luggage counter*



*Seva at Isha farm*

With the concurrence of their main Seva departments, participants may also opt to volunteer to help in the many festivals and events celebrated at Isha as support teams or even as performers. The various major events that are held during the year include: **Guru Purnima, Janmashtami, Navratri, Diwali, Karthikai, Margazhi festivities, Saptarishi aarti, Pongal, Thai Poosam and Mahasivarathri**. Some sadhanapada participants also perform the arduous Aarti performance with fire during Mahasivaratri.

In October or November each year, participants come together to hold a **Seva Mela**, putting up stalls to share about the activities at each department at Isha. This is a festive, colorful event with all participants attending and getting to know about the other Seva activities within Isha campus.

## Participants Speak... Initial Struggles

*It was difficult for me to adjust to the food initially.*

*I did not want to work in Tree Care as it was very hot, but I came to peace with it.*

*I am a doctor and did not want to work in the clinic. But it is not about what you want, it is about what is needed.*

*My biggest challenge was waking up at 4 am! Also, the weather was a challenge for me to get used to. But the growth is continuous here because of the support. I am always able to push myself.*



## Unique elements of Sadhanapada

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The Sadhanapada course has certain unique elements that help participants to grow in all aspects as well as to retain their learning. Each participant attends **over 200 guided yoga sessions** with support from experienced Hatha Yoga teachers and volunteers who provide individual attention to demonstrate correct postures.

**Rotation of rooms** in the accommodation happens once in two months, to encourage the ability to adapt quickly. As there are 22 window rooms and 44 non-window, it also helps to ensure participants get an opportunity to live in rooms with different configurations.

**Mega- cleaning** of the stay areas is done by the participants once in two months, to **imbibe good practices** and to remove unnecessary accumulation of belongings.

Participants are encouraged to write a **journal** which is provided to them at the beginning of their stay, **reflecting on their growth** in all aspects: physical, mental, emotional and energy.

**Monthly meetings** are held with participants. Due to lack of availability of a large space, these are held in three groups, each lasting one and a half days. At the meetings, the Sadhanapada team from the Ashram support the review of Inner Engineering and Hatha Yoga practices, encourage participants to share from their journals, facilitate outdoor and indoor games and activities, provide information about events and programs to be held at the Ashram, facilitate a meditation guided by Sadhguru and play Sadhguru videos explaining relevant aspects of the course. Weekly meetings of a few hours each are also held when the Sadhanapada team feel this is required, to share specific videos and make announcements such as cleaning schedule etc.

**Sadhguru Darshan**, a specific session for Sadhanapada participants to receive wisdom and ask their questions, is held at least once or twice during the course. In addition, they may attend any other discourses being held in the Ashram.

**Individual attention** is provided to participants if they request it or if they are observed to need it. A request to clarify doubts can be created on a specific application which is immediately addressed by the Sadhanapada team, and a meeting set up with the relevant teachers for Hatha Yoga and Inner Engineering.

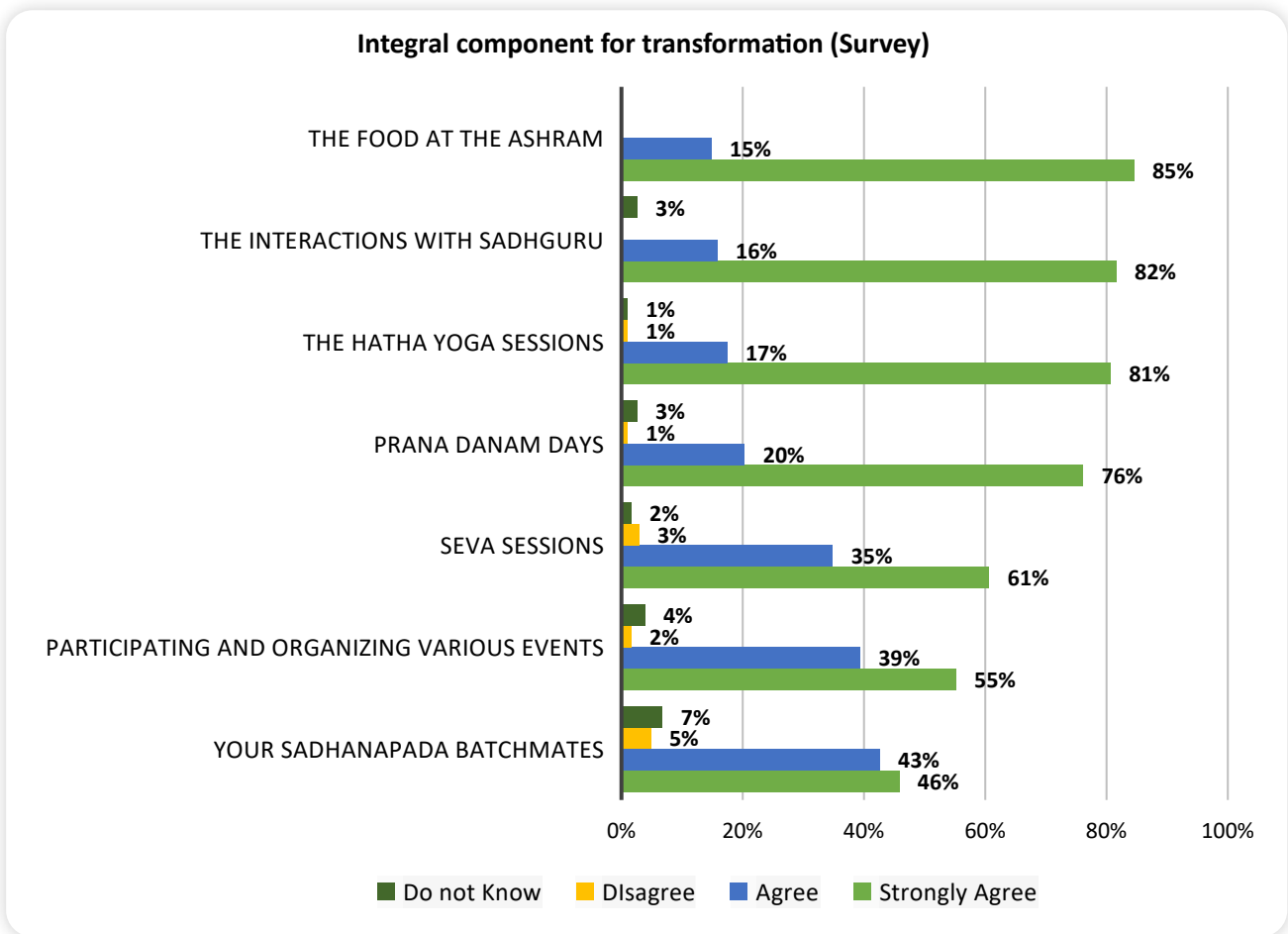
Each year, the course is adapted to **include new elements** that would enhance the experience. For example, in the current year participants are given access to learn Kalari and Music from the Isha Samskriti school and to volunteer in newly established Sadhguru Sannidhi in Bangalore.

The Sadhanapada program is designed to **ensure long-term sustainability of the benefits** gained. To facilitate this, the team members provide a Sadhana Intensive course for two months after completing the program. Those who wish can stay as long-term volunteers. It was observed that about 10% of every batch stay at Isha as volunteers. The team leads keep in regular contact with the alumni through 'nurturing calls' and Alumni retreats.

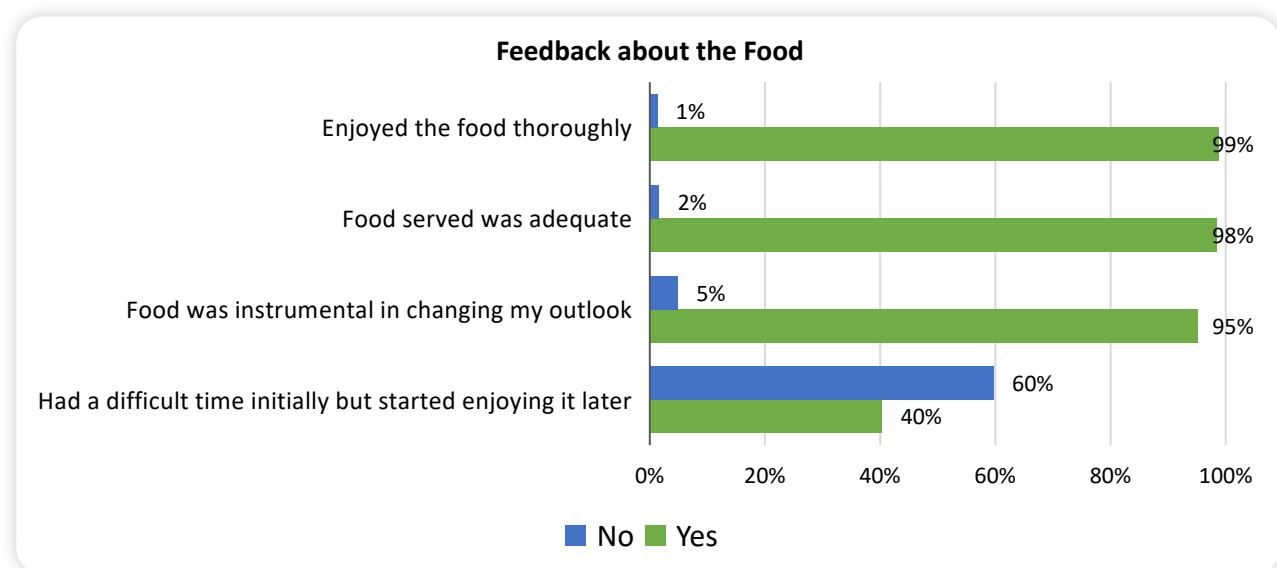


## Feedback on the Program components by the Participants

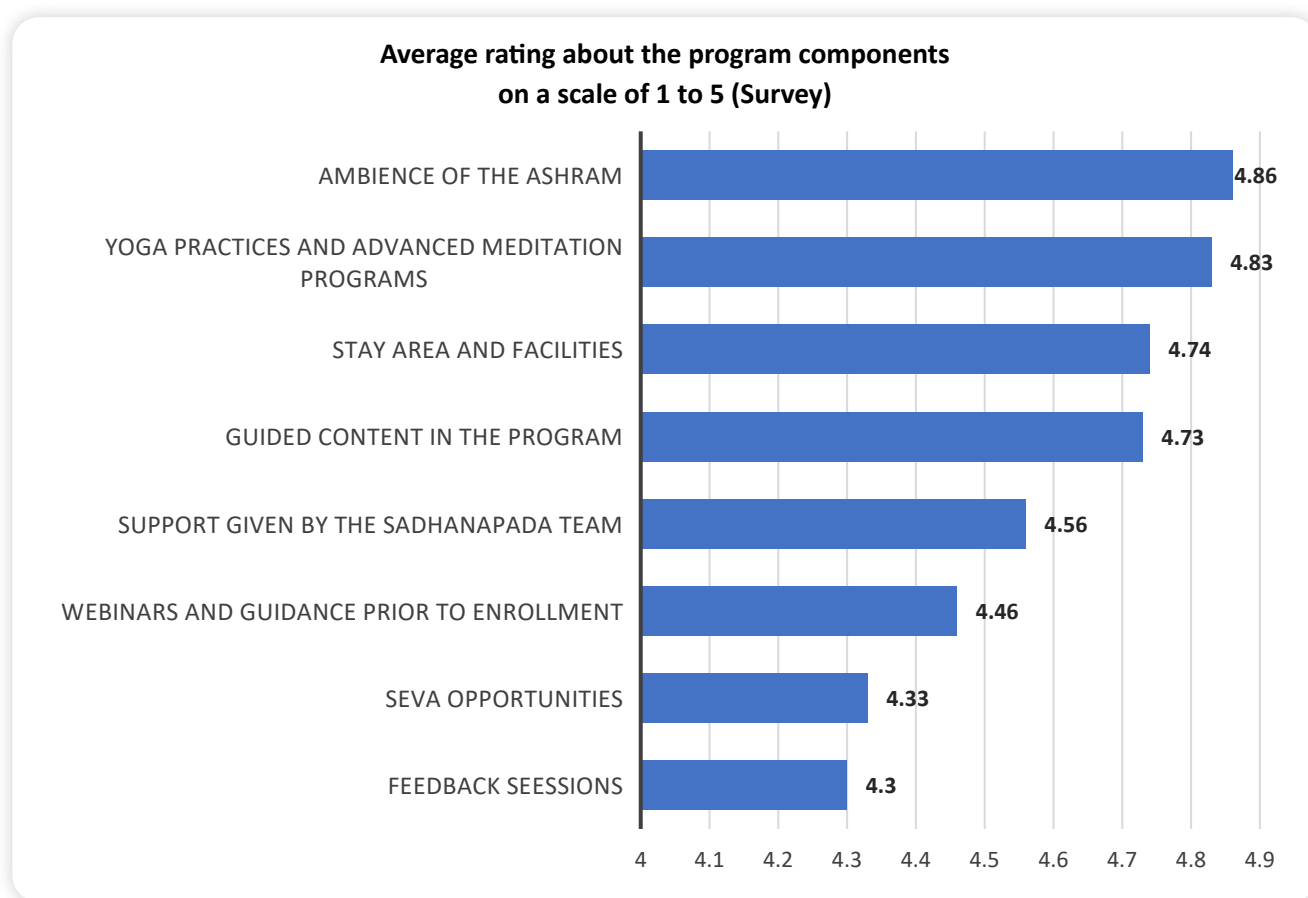
A major role in participants' transformation was from the Sattvic food, followed by the interactions with Sadhguru and the Hatha yoga sessions.



All the participants enjoyed the food served and **95% of the participants agreed that it was instrumental in bringing about a transformation** within them.



The participants were **very happy with the overall program**. When asked to rate a few components on a scale of 1 to 5, it was found that **all the components received a score of 4+.**



### Participants Speak...

*I was a long-term volunteer before joining Sadhanapada. I was able to have a deeper connection with Ashram and practices only after joining in the program. Overall the program was very beneficial and I could see a lot a difference within myself and I am very grateful*

*Sadhanapada is a very powerful program to transform yourself. I swear it helped me completely and am living my life very joyfully*

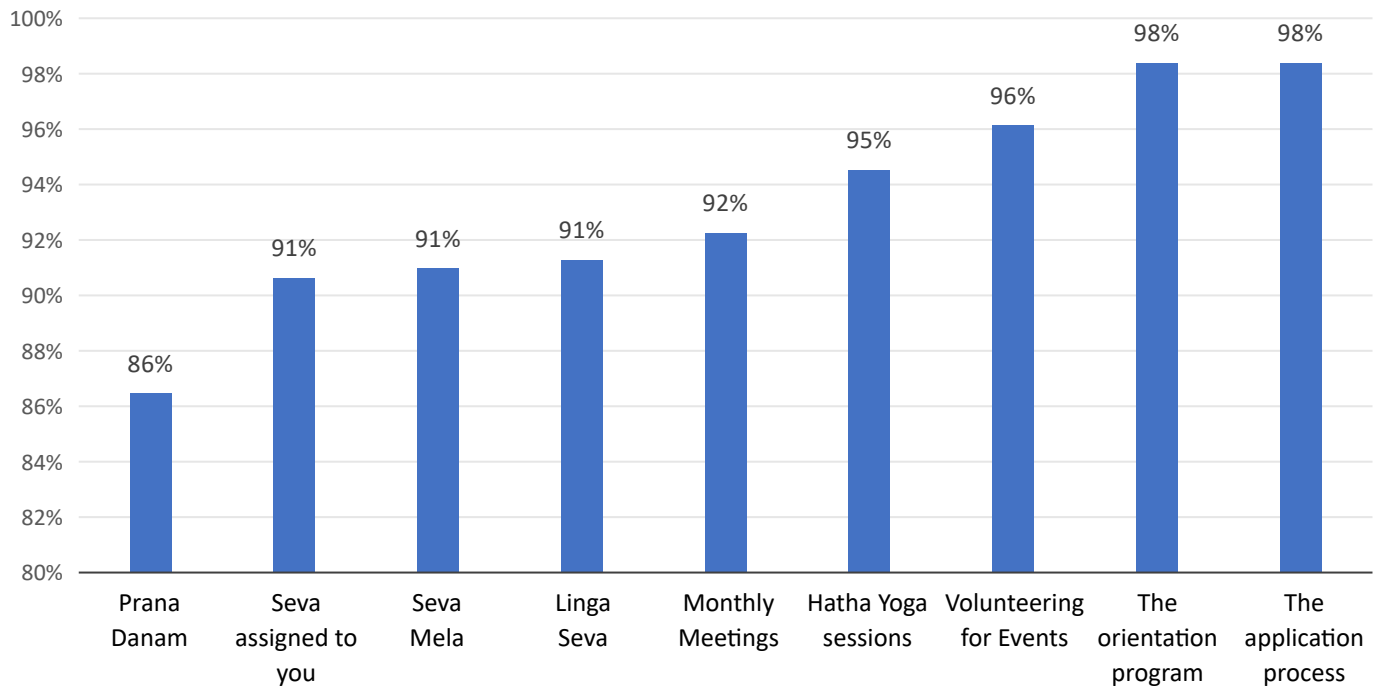
*Loved the program and has been an amazing experience. A life insurance for me*

*Am so grateful for the opportunity. It really has transformed me in every aspect of my life. Am eternally grateful to both Sadhguru and every Sadhanapada team volunteer who took care of us and assisted in every step of the program!*





### Postivie experience of the program components



The **Application process** and the **Orientation program** received a lot of positive appreciation (98% each) from the participants who responded to the survey, followed by **volunteering at events** and **Hatha yoga sessions**.

### Participants Speak...

*For me Sadhanapada isn't just a program it has transformed my life in a way I could never have imagined. I am grateful to my Guru and every single person who is a part of this program. Thank you so much from the bottom of my heart.*

*I'm forever fortunate to have taken some time to do Sadhanapada during budding stages of my life. It's the insurance to whole life and truly transformative in its best possible way. Couldn't have asked for anything better. Forever grateful to everyone who made it possible.*

*Sadhanapada is one of the best program or way to reach and touch your inner being deeply.*





## 8. Evaluation of Program Objectives

The objectives of the Sadhanapada program were evaluated using the REESS framework. REESS framework measures the performance of a project on five parameters – Relevance, Effectiveness, Efficiency, Social Impact and Sustainability. Various indicators were developed for the project based on the REESS framework.

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### Relevance:

#### Is the intervention doing the right things?

The extent to which the objectives of a development intervention are consistent with institutional and beneficiary's requirements, alignment with partner organization, donor's mission, and country's need.

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### Effectiveness:

#### Is the intervention achieving its objectives?

The extent to which the development intervention's objectives were achieved, or are expected to be achieved, considering their relative importance.

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### Efficiency:

#### How well are the resources being used?

The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.

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### Sustainability:

#### Will the benefits (financial, economic, social, environmental, and institutional capacities) sustain over time

The continuation of benefits from a development intervention after major development assistance has been completed.

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### Social Impact:

#### What difference does the intervention make?

The extent to which the intervention has generated or is expected to generate significant positive or negative, intended, or unintended, higher-level effects.

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## 8a. Relevance

In the current world where mental health concerns among youth are a growing issue, programs that help to achieve mental well-being and self-awareness are extremely beneficial.

### Need to increase joy and resilience

The absence of genuine happiness among individuals can be attributed to various factors, such as economic hardships, societal pressures, and personal struggles. In such an environment, the vibrancy of life diminishes, leaving a void where laughter and positive energy should prevail. The consequences extend beyond individuals, affecting the collective spirit and hampering social cohesion. Cultivating joy becomes essential for fostering resilience and well-being.

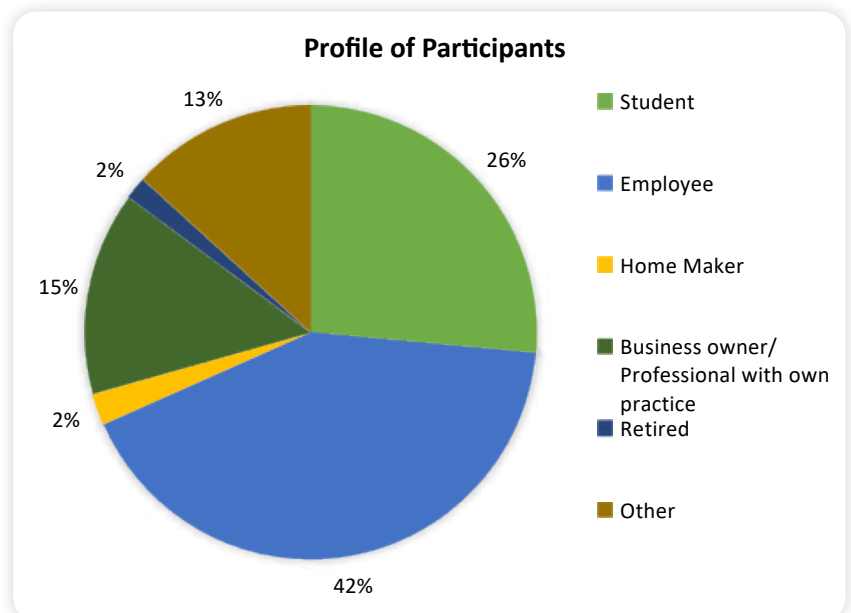
### Addressing high stress levels at work

According to the India Fit report 2022 -2023, 26% of Indians are stressed due to their current work situation and 17% due to financial instability. 14% are stressed due to relationship troubles. The current work environment has become stressful with long working hours, lack of job security, low wages, and growing competition.

57% of the participants who responded to the survey were either running their own business or were working professionals prior to enrolling in Sadhanapada.

26% of them had just finished their college education.

*65% of the respondents had enrolled in Sadhanapada to improve their psychological and mental balance.*



### Improving work-life balance

This can have detrimental effects on individuals, leading to heightened stress, burnout, and compromised well-being. In this unbalanced state, individuals often find it challenging to manage personal responsibilities alongside professional demands. The blurred boundaries between work and personal life can result in fatigue, strained relationships, and diminished overall satisfaction. Chronic imbalance may contribute to physical and mental health issues, negatively impacting productivity and job performance.

*73% of the participants were from the age group 25 to 40. Their main stressors in life before joining the course was work-life balance. 76% of them had enrolled to learn to handle any situation in life.*



## Dealing with depression

As per the recent National Mental Health Survey, nearly 1 in 40 and 1 in 20 people suffer from past and current depression, respectively. Depression among youth can stem from a complex interplay of biological, psychological, and environmental factors. Traumatic experiences, bullying, academic pressures, and family dysfunction amplify the risk. Social media influence, cyberbullying, and societal expectations add to the stress. Substance abuse and lack of coping skills intensify the vulnerability among them. Addressing depression and preventing it requires a comprehensive approach, involving support systems and education on mental health. Early intervention strategies are required to mitigate these multifaceted causes and promote overall well-being in young individuals. Programs like Sadhanapada, is a holistic module that strengthens the inner coping mechanism of the youth that helps them to develop a sustainable emotional resilience and physical well-being, are the need of the hour.

*73% of the participants were from the age group 25 to 40. Their main stressors in life before joining the course was work-life balance. 76% of them had enrolled to learn to handle any situation in life.*

## Supplementing wellness initiatives in schools and colleges

The primary focus of schools and colleges is education. While there is recognition of the importance of student well-being, academic priorities overshadow the implementation of comprehensive wellness programs. There is also a lack of specialized staff or resources dedicated to implementing wellness programs within schools and colleges. Hence, there is a decline in their coping skills and resilience when they are exposed to a competitive work environment.

### Participants Speak... Why does the world need Sadhanapada

*It gears you up and helps you handle any situation.*

*It gives you the mindset to deal with multiple challenges. Earlier jobs were more settled but now we need to engage in various activities and remain balanced.*

*The world needs people who can see what needs to be done, attend to issues from grassroot level and build a better society.*

*The world is becoming more challenging. Sadhanapada encourages people to go through all aspects of their lives with ease.*

*It is a life transforming program. I wish I could have got this when I was in school or just after school.*



## Alignment with Chola's goal

Chola believes that it has a responsibility to fulfill towards the people and the environment in shaping a better future for the nation and enabling a Better Life. The objectives of Sadhanapada synchronize with Chola's ethos thereby making this a relevant initiative to support.

## Alignment with the National Goals

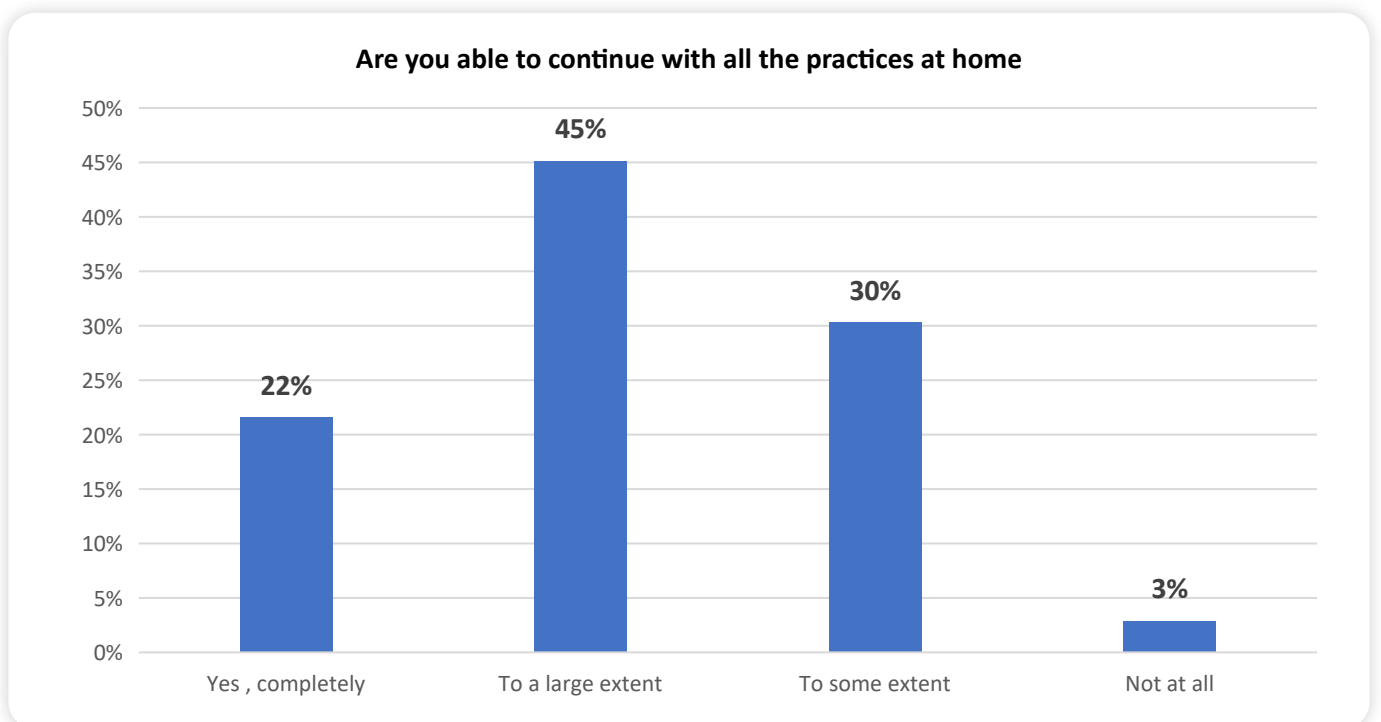
The Sadhanapada program is in line with the National Mental Health Policy which advocates for a holistic approach to health and recognizes the relationship with mind, body and soul as being more effective in dealing with Mental health problems.

## 8b. Effectiveness

Spiritual growth is often subjective and personal. The effectiveness of the Sadhanapada program is influenced by factors such as personal commitment, openness to the teachings, and the consistency with which individuals practice the techniques provided. This program was effective to the participants in the following ways-

### Self-Reflection and Awareness:

All the participants opined that the Sadhanapada program **increased their self-awareness** as they were given an opportunity to reflect on their personal actions, beliefs, and purpose. This further led to an improved ability to understand and manage their emotions effectively. Many of them felt that there was a **greater alignment between their personal actions and decision-making** after completion of the course. All the aspects of the program received a high rating.



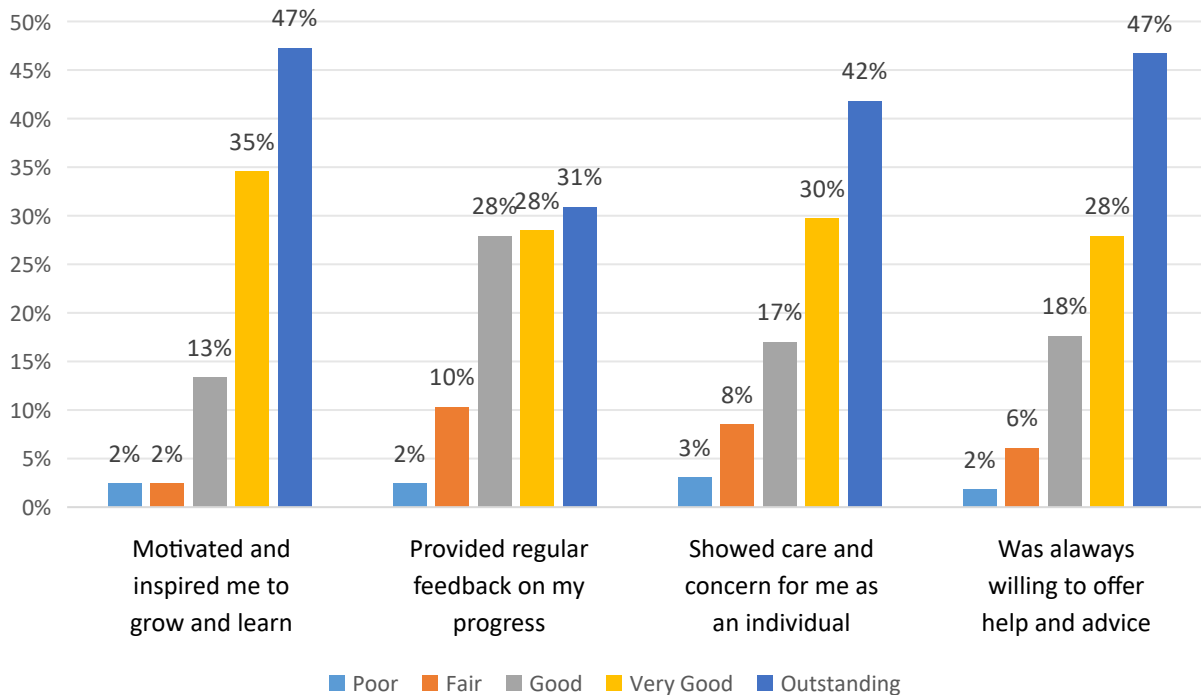
Only 3% of the respondents were not able to continue the practices but all the others were able to continue with their learnings to varied degrees.



## Experience of the Sadhanapada team

The Sadhanapada team that handles the entire program consist of dedicated trainers and coordinators who are able to inspire the participants and mentor them in the right direction needed for the participants' spiritual and physical growth during their stay at the ashram. **96% of the participants surveyed opined that the team motivated and inspired them to grow and learn during the program, 92% appreciated the help and advice they received** anytime they approached the program coordinators or trainers.

Rating of the Sadhanapada team



## Participant Speak..

*I bow down before the Sadhnapada team. Even now they are taking care of us in so many different ways.*

*The Sadhanapada team is utterly dedicated to making Sadhguru's vision a reality and working hard for our well-being. Still, I sometimes felt that their care and support became more like a possessive mother's rather than an understanding friend's. I understand that no one can care for like a mother but if you live at your home for 7 continuous months following a fixed schedule you sometimes need a friend's lenient and understanding care along with the adamant care of your mother. I thoroughly enjoyed and cherished the 7 months as a Sadhanapada participant, and I personally felt that this is the only thing that could be worked upon. Grateful that I could spend 7 months so close to Sadhguru living under his guidance.*

*The first 2 months was very difficult for me ,my health was not supportive and was difficult to get used to doing the Seva. But everywhere, Swamis and the full timers supported us in those initial months. Also the Sadhanapada team is always focused on continually improving the participants experience through various activities and seva opportunities. This is so amazing.*

*Very Thankful to Sadhguru and Sadhanapada team for providing this opportunity, it was a life transforming experience!*



## Behavioral Changes

Behavioral changes involve shifts in actions or reactions, driven by internal or external factors. Influences may include new habits, environmental stimuli, or altered perspectives. Understanding triggers setting goals, and embracing positive reinforcement, contributes to effective behavioral change. It encompasses adapting attitudes, habits, and responses for personal development and improved well-being.

The residential program created a **space for the participants to adopt positive behaviors** that were aligned with the program's teachings or vision. These ranged from a lack of fitness to feeling troubled about many aspects of day-to-day life and volunteering.

A **consistent positive change was seen as the months progressed**, by the trainers, in the abilities and behaviour of the participants. The participants surveyed were asked to rate certain aspects related to inner stability before and after completing Sadhanapada program on a scale of 1 to 10 (1 being lowest and 10 being highest) *as applicable to them*, before joining the course and on the current day. The responses were analysed and the weighted average of each parameter before and after were calculated to understand the impact of the program.

Aspects of Inner stability	Before	After	% of growth
Focus and concentration	4.7	8.0	69%
Capacity to cope with stress or change	4.5	8.3	84%
A sense of balance	4.3	8.2	88%
Communication with family, colleagues, and friends	4.8	7.9	66%
Willingness to do what is needed at home, in work or studies, or in other aspects of life	4.5	8.3	84%
Freedom to choose your own actions	4.8	8.2	72%
Being alive and pleased with yourself	4.8	8.4	77%
Expectations about others	5.5	5.8	5%
Understanding your personal likes and dislikes	4.7	8.1	73%

There was above **80% increase in the capacity to cope with stress, a sense of balance and willingness to do what was needed** and around 70- 76% in around 6 aspects like attitude of let go, being happy with oneself etc.



## Participants Speak...

*The daily schedule encourages us to practice yoga and other sadhana regularly. We are consistently provided with other support such as Sadhguru Darshan, guided meditations, being in natural surroundings, physical activities, wholesome meals and individual help when needed.*

*I am blessed to have the opportunity to participate in Sadhanapada. My life has changed its course and I am eternally grateful to all those who made this possible.*

*Being in the program has brought immense benefits to my health, diet, and mental well-being. It has inculcated adherence to a routine that we continue to follow once we have completed the course. My friend who has left the Ashram used to be upset at not having a child, but she is now fine with it. Another friend had many personal issues to deal with his family members' illness, but he is able to deal with it effortlessly now. Both are also keeping up with their practices.*

*Sadhanapada has change my life completely, how I was before and how I am now, I can see my growth in all aspects of my life*

*Before I was very fearful about life but after Sadhanapada there is no fear about anything. I got clarity about life and know how to live best way.*

## Physical wellbeing

Physical well-being encompasses overall health and fitness. **Regular physical activity strengthens the body and mind, while balanced nutrition provides essential nutrients.** Maintaining a healthy weight, managing stress, and avoiding harmful habits contribute to optimal physical well-being, fostering energy, resilience, and a positive quality of life.

Physical Well being	Before	After	% of Growth
Energy level and activeness throughout the day	4.7	8.5	81%
Eating healthier food	4.9	8.4	71%
Body Flexibility or strength	4.9	8.2	69%
Optimizing body weight	5.7	7.9	39%

## Trainer speak..

*Many participants could not even sit through the orientation module of 8 hours, requesting back support and cushions. But by the end of the program they could sit for longer hours and had the capability of joyfully helping with the many arduous tasks that need to be undertaken every day.*





## Spiritual growth

Spiritual growth encompasses **self-awareness, mindfulness, compassion, and connection with a higher power or inner self**. It involves cultivating virtues like gratitude, forgiveness, and humility. Exploring personal beliefs, engaging in reflective practices, and fostering a sense of purpose contribute to a profound spiritual journey, promoting inner peace and fulfillment. Higher levels of life satisfaction and fulfillment. Many participants agreed that they developed enhanced coping mechanisms for dealing with life challenges.

Spiritual Growth	Before	After	Growth %
Practice of meditation / yoga	4.2	8.3	98%
A sense of Awareness	4.4	8.1	84%
Attitude of let go	4.7	8.2	76%
Ability to introspect	4.8	8.3	72%
Gratefulness to others	5.0	8.5	71%
Ability to learn from any person or situation	4.9	8.3	70%
Joyfulness and gratitude	5.0	8.4	67%
Inclusiveness and empathy	5.0	8.2	63%

All the participants agreed that they were practicing yoga/meditation regularly. Their ability to introspect and develop an attitude of let go had also seen a marked improvement (above 70%).

### Participants Speak...

*Thank you for providing this opportunity to look within ourselves. Sadhguru and the volunteers through Sadhanapada have planted a powerful seed that is guiding me on to the paths that we need to walk on in life. It shows me what is essential in life - to seek and to help others in our journey.*

*No words for anything just blessed to part of the program and best time of my life and best decision of my life.*

*I just wish that I could have gone through this program in a much earlier stage of my life, that would have been phenomenal.*

*Embarking on a journey of self-discovery, my batchmates and I uncovered a profound connection to music and dance. Despite the absence of support, we yearn for at least 3-4 sessions per year dedicated to these arts, providing an avenue to explore and express our inner selves.*



## Mindfulness and Presence

The participants observed that they were able to stay in the present and had become increasingly mindful of their day to day activities. They owed this to the **meditation practices** that they had cultivated during the program.

### Participants Speak...

*Before joining I was bothered about my past or worried about the future. But now I most of the time I live for the moment. I feel really light and calm, it brings a smile and even tears also. Life is beautiful. Let's live life with love. I bow down to all of you who supported me in all the possible ways to nurture my life... Pranams*

## Sense of Purpose

One of the major outcome of the program for the participants was the clarification or **enhancement of one's sense of purpose and meaning in life**. This led to the adoption and regular practice of spiritual disciplines taught in the program. The Seva work done at the ashram led to an increased motivation to contribute positively to the world. **80% of the participants who responded to the survey, were very happy with the Seva assigned to them.**

### Participants Speak...

*The purpose of seva being to overcome limitations in us and to contribute to the ashram functioning, therefore instead of forcing a seva on a participant maybe the opinion and interest of the participant could also be looked into and given some importance as he/she would be better aware of his/her limitations/compulsions in other such fields of seva where he/she can contribute in so that both parties can benefit via the process*

## Continued Learning

The participants were consistently engaged in prayer, meditation, or other contemplative practices. This triggered an **ongoing interest in spiritual learning beyond the program**. Many of them expressed a desire to participate in additional workshops, classes, or study groups. The 2- month Sadhana intensive course offered after the Sadhanapada program was meant for continued learning.

### Participants Speak...

*If sadhana Intensive can be done twice will be good. Since in May and June most people have vacations and holidays, we would love to attend.*

*There should be chance to repeat Sadhanapada, may be after a gap of 5 years*



## 8c. Efficiency

Efficiency indicators for a program like Sadhanapada assess how well the program is being implemented and whether resources are being utilized optimally to achieve its goals.

### Accounting and controls

The Sadhanapada program is underpinned by a **robust budgeting and accounting process**. Budgeting starts in January with the Sadhanapada management team planning activities for the subsequent batch and costing each activity. The capacity of the Ashram for this residential program is about 1200 participants and each element of the cost is worked out. The Budget Panel studies each line item of cost and once they are approved, details are entered into the accounting system with a Budget Code. Expenditure is controlled by using the same codes for quotations as well as purchases. Vouchers are prepared for each purchase transaction, with the relevant budget code and name of the donor mentioned on each.

### Cost efficiency

Of the total amount of Rs.5.5 crores 83% was used for providing food to the participants. The **cost of the food provided for one day is Rs.190/-**. This amount covers the cost of the morning as well as the evening meals for the participants. The quantity and quality of food both were complimented b.

However, it is to be noted that most of the food was organic in nature and traditional rice and millets were frequently used, which are costlier than the normal ponni rice consumed by most people. The **SAN team observed that the market price of the food served could be in the range of Rs.275 – 300 per participant each day**. Hence the expenses for food were very cost effective.

As the number of participants for the program was increasing every year, there was always an increase in the number of volunteers / coordinators for the program. Hence, there was a constant need to purchase laptops and create more Seva spaces for the new team members. The need for budgeting capital expense towards this was imperative.

### Money spent vs Money given

It has also been found that Rs. 4,01,62,347/- was budgeted as food expenses for 1026 participants by Isha. But it was noted that 90 selected candidates did not join the course and 185 left the course mid-way without completing the course. Only 751 participants completed the course.

Participants	No. of participants	No. of days	Cost @Rs 190/- per day
Completed the course	751	220	3,13,91,800
Left midway	185	125	43,93,750
Actual Cost incurred			3,57,85,550
Amount given as per the Budget			4,01,62,347
Difference			43,76,797



The difference in amount was utilized towards the cost of additional food for the participants. At times ingredients may cost more than the amount budgeted or special meals may be given, such as at festivals or at the end of the course. The Utilization Certificate for the program provided by the auditor notes that the total cost of food was Rs 4,02,55,403.

## Time Management

The Sadhanapada program adhered very efficiently to scheduled timelines for program activities and events. It worked to a clockwork precision and enabled the participants to value the time they spent at Isha. This taught them real life lessons on allocating time strategically, avoiding procrastination, and how to maintain a healthy work-life balance. This practice when followed enables individuals to **enhance productivity, reduce stress, and achieve their goals more efficiently.**

Timely work completion hinges on effective time management. The volunteers prioritize their tasks, set realistic deadlines, and minimize distractions which are key to promoting their efficiency.

### Volunteer Speak..

*All the work at Isha happens on time. Having done the Sadhanapada course, I know how to balance my work with my prayers, meditation, yoga and my other interests. It is a joyful experience working here as compared to the stress I had for five years while I was a consultant in a big five firm.*

## Staff and Volunteer Productivity

Volunteer productivity thrives on passion and purpose. All the volunteers at Isha were highly passionate about the work they had been given or undertaken. Due to **clear communication** among the team members a supportive environment is created for them to carry out their meaningful tasks. This gives them a **high motivation and enhances efficiency**, thereby improving productivity. **Flexible schedules** to continue with their meditations and prayers foster a sense of accomplishment, optimizing the productivity of volunteers in any endeavor.

### Volunteer Speak..

*We enjoy the work we do and do not carry any stress. Even if we were to work late nights on some days, we do it with a sense of purpose and are always charged with energy*

## Communication Efficiency

The Sadhanapada team and the participants had an **open communication channel**. The team regularly collected **feedback** from the participants and would help them to **sort out issues** as and when it arose. The team leveraged technology efficiently and had **digital platforms to communicate** with the participants which enhanced the participant experience.

### Participant Speak..

*I thank all the volunteers - accommodation team, back-end team for taking efforts and extra steps to make it a smooth experience for the participants. The app for Sadhanapada participants is hugely appreciable and was very helpful.*



## Program Flexibility

The Sadhanapada program **evolves every year based on the reflection forms and feedback** from the participants. This ability to adapt to changing circumstances reflects the open mindset of the team to provide a program that will be acceptable to the different groups of participants.

### Volunteer Speak..

*There are lot of changes in the program now, than what it was before. We now have LED displays explaining certain elements, Korappai (mats) have been given to all the participants, keeping a journal has been introduced a year ago and all participants get a Sadhanapada t shirt. Each year new changes are introduced.*

## 8d. Social Impact

Leading a life with balance, clarity, and intensity can have a profound impact on various aspects of an individual's well-being and overall satisfaction. The positive impact of the Sadhanapada program include-

### Enhanced Well-being

The participants experienced a balanced lifestyle that includes regular exercise, a healthy diet, and adequate sleep which contributed to their **improved physical health**. There was a **69% improvement in the flexibility of the participants and 81% improvement in their energy levels** throughout the day.

All participants felt they developed **clarity of purpose**. Their mindfulness practices, and their pursuit of passion has positively impacted their mental health, reduced stress and promoting emotional well-being. There was an **84% growth rate among the participants in their capacity to handle stress**.

### Increased Productivity and work life balance

Participants were able to **balance priorities and maintain their clarity about goals** which enhanced their productivity. The intensity in their efforts, coupled with focus, allowed them for more effective and efficient work. **56% of the participants felt that their work life balance was much better than before doing the program and 38% felt that they were completely able to handle the work life balance**.

### Positive Relationships

A balanced life provides time and energy for **meaningful connections** with others. Clarity in communication and a commitment to nurturing relationships can lead to stronger bonds.

### Personal Growth

A life with clarity allowed them for a deep understanding of their purpose and goals, fostering **continuous self-improvement and personal growth**. Pursuing challenges and pushing themselves beyond comfort zones during the 7 months stay leads to transformative experiences and accelerated development within themselves. This becomes a habit and hence lives through life.



## Increased Resilience

Clarity of purpose provided a sense of direction and meaning and contributed to increased resilience in the face of adversity among the participants. The program was able to foster a mindset that views setbacks as opportunities for learning and growth. At the end of the program, participants had **clarity in understanding their personal emotions** and those of others. The Seva program helped them to cultivate **empathy and emotional intelligence**, and thereby strengthened their interpersonal relationships. Balancing various aspects of life ensured that decisions they were taking were **aligned with their long-term goals and values**. This leads to a greater sense of accomplishment.

## Increased Energy and Passion

Most of the participants felt they had gained the ability to lead a balanced life that includes self-care and ensures **high energy levels**. As their intensity in pursuing passions and purpose increased, this fueled their energy and enthusiasm.

## Mindful Living

Incorporating mindfulness practices has fostered a more present and aware way of living among the participants. This mindfulness contributes to their better decision-making skills and an **increased appreciation** for life's moments.

## Improved Focus

By being able to balance various responsibilities and managing priorities, participants felt that it would help **avoid burnout** in their lives. They attributed it to the clarity of purpose which enabled them to focus attention on important tasks.

## Reduced Stress and Anxiety

Mindfulness practices and intense focus on positive activities has contributed to **stress reduction** among the participants. A balanced, clear, and intense approach to life has led to a sense of **long-term satisfaction and contentment** among them.

## 8e. Sustainability

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Spirituality is the key to a healthy society and it is the engine of sustainability. Spiritual growth leads to being conscious. All the participants had a definite increase in their levels of consciousness and have started to be aware of the inner and outside worlds. They have begun to accept and empathize with the surrounding environments. From spirituality results intelligence, progress, innovation, self-protection, quality, preservation, and conservation of things. Hence all the aspects of the Sadhanapada program focuses on **strengthening the inner peace among individuals thereby creating a sustained interest among each participant** to live joyfully and be purpose driven.

The **connection between spirituality and sustainability** is facilitating the road towards creating a healthy society. Spiritual growth makes people more attentive and observant in general regarding their inner and outside worlds. Spiritual individuals are more sensitive and willing to make positive transformations in



order to perceive the environment as their inner reflection. It is important to accept spirituality's existence in life at every level. Teaching such practices in schools, colleges and organizations would facilitate **spiritual thought and action**, thus helping to build a society **focused towards sustainable and inclusive outcomes**.

## 9. Alignment with SDGs

The Sadhanapada program aligns with the following 10 SDGs





## 10. Recommendations

- a) The Sadhanapada team has an effective computerized system in place to record applications and track participants' progress. It may be useful to use this data to generate reports tracking how many alumni have completed other Isha programs. An effective Monitoring & Evaluation tool can be created to capture regular feedback from participants who have completed the course. This would track whether they were following the practices and capture impact internally and also help in conducting research on wellbeing and spiritual growth.
- b) Sadhguru envisions the program to cater to 10,000 participants every year, so plans need to be made to increase the infrastructure that has to be developed within the campus to accommodate the increased intake. Currently, stay areas can only accommodate 1200 people and monthly meetings and yogasanas are held in different locations.
- c) More trainers are needed to support the participants if the program is scaled. The team's current ability will not be able to respond to larger participants and more trainers need to be trained. Regular Train the Trainers' programs need to be organized to groom and increase the number of Trainers.
- d) Better medical facilities could be provided, and a few specialist doctors could be appointed for consultations. As most of the young participants were away from their homes for the first time, they often fell sick in the initial days. A dedicated doctor, nurses and counsellor can be appointed for Sadhanapada participants
- e) Many of the participants complained about not being able to be involved in more Seva opportunities. The Seva component could be revisited and made more meaningful and inspiring for the participants. There could be more mix and match of desk job and field job, going for temple visits outside the Ashram etc.
- f) Sports activities could be included as a regular feature within the Sadhanapada program as the youngsters missed having some games in the routine.
- g) Similarly participants interested in music and dance could be linked with the Samskriti classes and they could hone their talent during their stay at Isha.
- h) Washing of clothes was a major issue among the participants, especially during rainy season. Currently there are a few drying machines. **Laundromats could be purchased** to solve this issue.



## Annexure 1

### State wise count of participants who exited and did not join

State	Exited	No Show
Andhra Pradesh	9	9
Assam	2	2
Bihar	4	1
Chattisgarh	1	
Delhi	6	7
Goa	3	
Gujarat	5	3
Haryana	7	4
Himachal Pradesh	2	1
Jammu and Kashmir	2	
Jharkhand	1	1
Karnataka	28	20
Kerala	6	1
Madhya Pradesh	6	4
Maharashtra	34	14
Punjab	2	
Rajasthan	10	3
Tamil Nadu	12	2
Telangana	15	9
Tripura	1	
Uttar Pradesh	15	7
Uttarakhand	4	
West Bengal	10	2
<b>Total</b>	<b>185</b>	<b>90</b>



## Gender / Age wise count of participants who did not join / exited the course

Age group	No Show			Exited		
	Female	Male	Total	Female	Male	Total
Less than 21		3	3		2	2
21 - 25	6	21	27	9	29	38
26 -30	5	19	24	25	36	61
31 - 35	9	13	22	19	17	36
36 - 40	2	7	9	5	16	21
Above 40		5	5	8	19	27
<b>Total</b>	<b>22</b>	<b>68</b>	<b>90</b>	<b>66</b>	<b>119</b>	<b>185</b>

## Annexure 2 – Seva Departments allocated to all participants

S.no	Seva Dept	Number	%
1	Akshaya	121	13.4%
2	Dhyanalinga	92	10.2%
3	Land Maintenance	61	6.8%
4	Sadhanapada	57	6.3%
5	IT / IT - Applications	54	6.0%
6	IPC	50	5.5%
7	Temple - Linga Bhairavi	35	3.9%
8	Archives	29	3.2%
9	Medical (Ashram Clinic)	23	2.5%
10	Isha Health Solutions	21	2.3%
11	E-Media Panel / Emedia Operations	20	2.2%
12	Indian Language Publications	19	2.1%
13	Farmer Producer Organisation (FPO)	17	1.9%
14	Isha Biksha	17	1.9%
15	Ashram Administration	16	1.8%
16	IYC Programs / Ashram Programs	15	1.7%
17	Isha Samskriti	12	1.3%
18	Cottage Accomodation	10	1.1%



S.no	Seva Dept	Number	%
19	Finance / Project Finance	10	1.1%
20	Construction	9	1.0%
21	Isha Programs and Communications / NP (Back Office)	9	1.0%
22	IT / IT - Infrastructure	9	1.0%
23	Legal	9	1.0%
24	Shivanga	9	1.0%
25	Human Possibilities	7	0.8%
26	Isha Agro Movement	7	0.8%
27	Isha Impressions	7	0.8%
28	Isha Vidhya	7	0.8%
29	Laundry	7	0.8%
30	Electrical	6	0.7%
31	Fabrication	6	0.7%
32	Garden	6	0.7%
33	IYC Communications / Outside Tamil Nadu and Global media	6	0.7%
34	Rally for Rivers / Cauvery Calling / Back office	6	0.7%
35	Volunteers Reception Office	6	0.7%
36	Audio	5	0.6%
37	Isha Goushala	5	0.6%
38	Isha Leadership Academy	5	0.6%
S.no	Seva Dept	Number	%
39	IYC Communications / Guest care	5	0.6%
40	IYC Communications / TN Media	5	0.6%
41	Maintenance	5	0.6%
42	Data Sciences	4	0.4%
43	Earthworks	4	0.4%
44	Finance / Foundation Finance	4	0.4%
45	ILPL - Marketing	4	0.4%
46	Isha Home School	4	0.4%
47	Outreach / Action For Rural Rejuvenation	4	0.4%



S.no	Seva Dept	Number	%
48	Outreach / Isha Rural Health Clinic	4	0.4%
49	Rally for Rivers / Cauvery Calling / Communications	4	0.4%
50	Video Publications	4	0.4%
51	Volunteers Coordination Department	4	0.4%
52	Specialist Food-health products	3	0.3%
53	Transport	3	0.3%
54	Carpentry	2	0.2%
55	ILPL-Business Purchase	2	0.2%
56	Isha Sacred Walks	2	0.2%
57	Photo Publication	2	0.2%
58	Plumbing	2	0.2%
59	Pooja Materials	2	0.2%
60	Shoppe	2	0.2%
61	Vehicle Maintenance	2	0.2%
62	Accommodations Residential	1	0.1%
63	Adhiyogi Alayam Maintenance	1	0.1%
64	Ashram Aesthetics	1	0.1%
65	English Publications	1	0.1%
66	Global Languages Publications	1	0.1%
67	Isha Home School / Admin - IHS	1	0.1%
68	Isha Home School / IT - IHS	1	0.1%
69	Isha Programs and Communications / Training and Isha Program Archives	1	0.1%
70	Isha shoppe	1	0.1%
71	Kayantha Sthanam	1	0.1%
72	Learning & Development	1	0.1%
73	Rally for Rivers / Cauvery Calling / Agroforestry Karnataka	1	0.1%
74	Sounds of Isha	1	0.1%
75	Spanda Hall Maintenance	1	0.1%
76	Telecom	1	0.1%
		902	





# FPO Management Resource Centre Implemented **by Isha Outreach**

A CSR Initiative of Cholamandalam  
investments & finance ltd.

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# 1. Introduction

Farmers in India comprise a significant portion of the population, with agriculture serving as a primary livelihood for millions. Smallholding farmers constitute a majority, managing modest landholdings and often practicing subsistence farming. Despite their vital role in ensuring food security and contributing to the economy, farmers face various challenges, including limited access to resources, market uncertainties, and climate-related risks. The concept of Farmer Producer Organizations (FPOs) emerged to address these challenges faced by smallholder farmers. Small farmers often lacked bargaining power, access to markets, and resources for adopting modern agricultural practices. FPOs were introduced to empower farmers by fostering collective action, enabling them to negotiate better prices for their produce, access markets more efficiently, and benefit from shared resources and knowledge. FPOs aim to strengthen the socio-economic conditions of farmers, promote sustainable agricultural practices, and contribute to rural development.

Understanding that FPOs serve as a mechanism to enhance the overall well-being and resilience of the agricultural community, Cholamandalam Investment and Finance Company Limited, has been supporting the capacity building of FPOs for the last few years. The need of the hour is to support farmers with initiatives to improve market access and financial inclusion.

## 2. About the Organisations

### Cholamandalam Investment and Finance Company

The Murugappa Group headquartered in Chennai, Tamil Nadu, India, is a conglomerate with diverse business interests spanning financial services, insurance, manufacturing, and healthcare. Cholamandalam Investment and Finance Company Limited (Chola), established in 1964 is the financial services arm of the Murugappa Group, and stands out as one of its flagship entities. Renowned for its customer-centric approach, innovation, and commitment to sustainable practices, the Murugappa Group holds a prominent position in India's corporate landscape, contributing significantly to economic progress and societal advancement. Demonstrating a steadfast dedication to Corporate Social Responsibility (CSR), the Chola has initiated various programs aimed at uplifting communities and promoting sustainable development. The CSR initiatives encompass a broad spectrum of focus areas, with a particular emphasis on agriculture, education, healthcare, environmental conservation, and community development.

Chola plays a vital role in agricultural financing. It provides tailored financial solutions to farmers and agribusinesses, facilitating access to credit for farm inputs, equipment, and working capital. Through its extensive network of branches in rural areas, Chola offers loans for crop cultivation, livestock, and farm infrastructure development. By leveraging technology and innovative financial products, it empowers farmers to enhance productivity and income. The company's commitment to agricultural finance strengthens the backbone of rural economies, fostering growth and sustainability in the agriculture sector while contributing to overall rural development.



## ISHA Outreach

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The Isha Foundation, led by Sadhguru Jaggi Vasudev, is a non-profit organization dedicated to spiritual well-being and environmental conservation, with its headquarters situated in Coimbatore, India. It offers a range of programs focused on yoga, meditation, and holistic living to promote inner peace. Furthermore, the foundation actively engages in rural development initiatives, particularly through its social outreach arm, Isha Outreach (IO). One notable project is the Veliangiri Uzhavan Farmer Producer Organisation, established in November 2013 with support from the Small Farmer Agribusiness Consortium (SFAC) and the Department of Agriculture. This organization, based in the Thondamuthur Block of Coimbatore district, assists local farmers of that Block, by providing them with technical, financial, and marketing assistance to foster sustainable agricultural practices and enhance their livelihoods.

This FPO has showcased its ability to positively impact farmers' livelihoods by granting them access to markets, technology, and training. Recognized by the Government of India as a model FPO, it follows a standard operational model of uniting farmers, providing them with training and skill development, facilitating access to credit and agricultural resources, coordinating marketing efforts, and furnishing essential support services like storage and processing facilities. During the fiscal year 2022-23, the Government of India and NABARD acknowledged ISHA Outreach as a collaborator tasked with mentoring and guiding 24 Farmer Producer Organisations (FPOs) in Tamil Nadu and Karnataka. They decided on the locations where the FPOs were to be started and appointed ISHA outreach to launch and mentor the FPOs. The objective was to integrate the best practices learned from the Veliangiri Uzhavan Farmer Producer Group, into these FPOs.

## Collaboration between ISHA Outreach and Chola

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Cholamandalam Investment and Finance Company Limited partnered with ISHA Outreach as a financial supporter to establish a Farmer Producer Organization Management Resource Centre (FMRC) as a centre of excellence. This collaboration aimed to advance the objectives of the program by empowering the 24 FPOs, enhancing their operational efficiency, fostering skill development, and ultimately increasing their income and productivity.

During the fiscal year 2022-23, Chola earmarked funds for the ISHA Farmer Producer Organization MRC initiative coordinated by ISHA Outreach, as part of its corporate social responsibility initiatives. The objective was to expand the program's reach to 12 Taluks in Coimbatore. A total sum of Rs 1,00,00,000 (Rupees One crore) was allocated for this purpose. This collaboration provided logistical support for establishing the FMRC drawing from the insights gained from ISHA's exemplary model FPO, the Veliangiri Uzhavan Farmer Producer Group. The overarching vision of the project was to mobilize farming communities to establish profitable enterprises and secure sustained increases in income.

## 3. Need for the project

The majority of India's agricultural sector comprises small and marginal farmers who face numerous challenges such as limited access to markets, credit, inputs, and technology. FPOs provide a platform for these farmers to collectively address these challenges by pooling their resources, leveraging economies of scale, and accessing support services efficiently. FPOs also promote inclusivity and empowerment by giving



marginalized farmers, including women and tribal communities, a voice in decision-making processes, access to training and capacity-building programs, and opportunities for collective action and bargaining power.

Handholding FPOs in India during their launch stage is essential due to various challenges they face initially. Many FPOs, especially those formed by small and marginal farmers, lack the necessary skills, knowledge, and resources to effectively manage their operations and navigate the complexities of modern markets. Handholding programs provide vital support in capacity building, offering training in areas such as management, marketing, financial literacy, and technology adoption.

Additionally, FPOs often encounter difficulties in accessing credit, markets, and government schemes, hindering their growth and sustainability. Handholding initiatives assist FPOs in overcoming these barriers by facilitating linkages with financial institutions, markets, and relevant government agencies. Moreover, handholding helps FPOs strengthen their organizational structure, governance practices, and compliance with regulatory requirements, enhancing their credibility and viability as business entities.

By providing tailored support and guidance, handholding empowers FPOs to improve productivity, increase incomes, and contribute to rural development and poverty alleviation. It also fosters collaboration and networking among FPOs, enabling them to share knowledge, experiences, and resources for mutual benefit thereby enabling them to realize their potential as agents of positive change in India's agricultural landscape.

## 4. Objective & Scope of the Assessment

Social Audit Network, India was approached by Chola to conduct a social impact assessment of the FMRC created by ISHA Outreach. The objective of the assessment was to evaluate the impact of the FMRC in enabling 24 FPOs in Tamil Nadu and Karnataka to function, through its training and mentoring support.

The scope of the project was from April 2022- March 2023.

## 5. Methodology

The social impact assessment was spearheaded by Mrs Latha Suresh, Director-SAN India and was ably assisted by Ms. Neeta N K, Social Auditor, SAN India. Mr.P.N.Subramainam, a technocrat turned farmer, with few years of experience in FPOs was also part of the assessment team. The team interacted with the Veliangiri FPO team at ISHA Yoga Centre in Coimbatore on 4, 5<sup>th</sup> and 6<sup>th</sup> February, 2024. They also visited the FPO sites in Sirumugai area, Karamadai and SS Kulam in Coimbatore and interacted with the FPO leaders, partners, and beneficiaries. Focus Group Discussions (FGDs) were held with the FPO teams at their office sites. Online FGDs and interactions were conducted with the other FPO heads from Tamil Nadu and Karnataka from the ISHA Centre on the 5<sup>th</sup> of February.



## Stakeholders Consulted

The SAN team interacted with the following stakeholders during their visit.

Stakeholder	Number Consulted	Method of Consultation
Project Head	1	Personal Interview & FGD
Program Manager	1	Personal Interview & FGD
Program Staff	16	FGD
Technical Experts	3	FGD
Interns	4	FGD
FPO Leaders	12	FGD & online questionnaire
FPO Leaders	40	Online FGD & online questionnaire
CEOs	9	Personal Interview & FGD

An online questionnaire was sent to all the CEOs and 2 directors of each FPO. 40 responses were received.



*Online interactions with FPO*

## 6. Report on Performance

The ISHA FPO Management Resource Centre (FMRC) was a nodal organization established to provide comprehensive support to 24 Farmer Producer Organizations (FPOs) identified by the government. The roles and functions of the FMRC and the teams supporting it are as follows

**FMRC Central Management:** This is the core body responsible for overall coordination, strategic planning, and decision-making for the FMRC's activities. It sets the direction and objectives for supporting the FPOs.

**Project Experts:** The project experts are seasoned professionals with diverse expertise relevant to FPO management. They oversee the activities of the Community Based Business Organizations (CBBOs) and provide guidance and support in various domains such as agriculture, marketing, social mobilization, IT and MIS, law and accounts, etc.

**Community Based Business Organizations (CBBOs):** These are regional or local units established to manage and support groups of FPOs. Each CBBO typically oversees 4-5 FPOs and serves as the primary point of contact for them.

**Functional Teams:** Within each CBBO, there are functional teams responsible for day-to-day operations and management of the FPOs. These teams may include experts in crop husbandry, agricultural marketing, legal compliance, accounting, and other relevant fields. Their role is to ensure the smooth functioning of FPO activities.

**Training Teams:** In addition to functional teams, there are specialized training teams tasked with building the capacity of FPO members and staff. They provide training sessions and workshops on topics such as agricultural best practices, financial management, marketing strategies, legal compliance, etc.

**FPO CEOs and Accountants:** Each FPO is led by a Chief Executive Officer (CEO) responsible for overall leadership and decision-making. Additionally, there is typically an accountant tasked with financial management and record-keeping duties.

**Domain Experts:** These experts specialize in specific thematic areas relevant to FPOs, such as crop husbandry, agricultural marketing, social mobilization, IT and MIS, law and accounts, etc. They provide targeted support and expertise to address the unique needs and challenges faced by FPOs in their respective domains.

### Reach of the Program:

In all, 24 FPOs were selected as part of the program. Of these, 6 were from Karnataka and 18 were from Tamil Nadu.

### Operational Status:

72% of FPOs in Tamil Nadu (TN) and 100% in Karnataka (KA) were fully operationalized during the year 2022-23. MRC was successful in operationalising 19 of the 24 FPOs underscoring its effectiveness in fostering agricultural development and empowering smallholder farmers within these FPOs.



## FPO Membership Details

S.No	Name of the FPO	Name of the Leader (Director)	Initial Members (as of 31.03.2022)		Current Members (As of 31.03.2023)		No. of Directors
			Male	Female	Male	Female	
1	Arulmigu Someshwarar Farmer Producer Company Limited	A. Sivanandham	166	42	252	70	8
2	Sri Velayudasamy Farmer Producer Company Limited	Narayanasamy S	291	52	313	53	12
3	Karamadai Farmer Producer Company Limited	Sasikumar N	176	46	283	69	5
4	Bavani Amman Farmer Producer Company Limited	Subramaniam Elanchezhian	261	40	262	43	6
5	Sathy Bhairavi Farmer Producer Company Limited	AMG Chinnarajan	295	30	318	35	6
6	Mariamman Farmer Producer Company Limited	Shanmugam M	-	-	53	7	6
7	Manneeswarar Farmer Producer Company Limited	-	-	-	-	-	-
9	Thondamuthur Farmer Producer Company Limited	-	-	-	-	-	-
10	Palamalai Farmer Producer Company Limited	Chitra	8	2	272	48	6
11	Sri Mahakaleshwarar Farmer Producer company Limited	Shanmuga Sundaram	8	2	275	32	10
12	Guru Sidhagiri Farmer Producer Company Limited	Rajesh Kumar	9	1	63	38	5



S.No	Name of the FPO	Name of the Leader (Director)	Initial Members (as of 31.03.2022)		Current Members (As of 31.03.2023)		No. of Directors
			Male	Female	Male	Female	
13	Malanadu Farmer Producer Company Limited	Pradeesh	9	1	217	33	6
14	Sri Hettai Amman Farmer Producer Company Limited	BL Anand	9	1	66	34	8
15	Agni Mariamman Farmer Producer Company Limited	Saravanan J	4	1	237	65	5
16	Kadayampatty Farmer Producer company Limited	Palani Samy	4	1	255	47	5
17	Adavalleeswarar Farmer Producer Company Limited	Arunachalam R	4	1	263	56	5
18	Thencherimalai Farmer Producer Company Limited	-	-	-	-	-	-
19	Tiptur Farmer Producer Company Limited	Dayanand Swamy M	265	36	265	36	5
20	Negila Siddha Farmer Producer company Limited	Doddaiah	269	41	269	41	5
21	Ponnad Farmer producer company limited	Muthappa A K	292	16	292	16	6
22	Virajpet Farmer Producer company Limited	M I Nanaiah	274	26	274	26	5
23	Nanjundeshwara Farmer producer company Limited	H M Mahadevappa	282	18	282	18	6
24	Mallayyanna Giri Farmer Producer Company Limited	Manjunath B V	251	59	265	61	5
<b>TOTAL</b>			<b>2,877</b>	<b>416</b>	<b>4,776</b>	<b>828</b>	<b>125</b>

\* SI No. 6 FPO company incorporated in November 2022

\* SI No. 7,8,9 & 18 were incorporated after March 2023





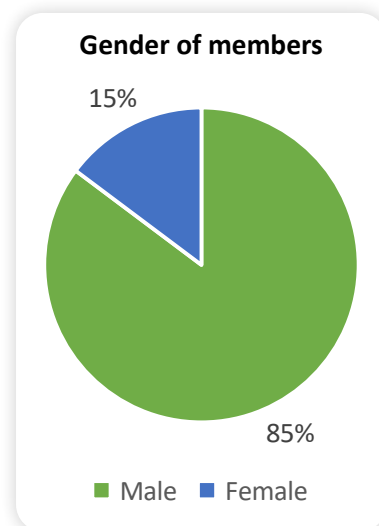
## Profile of members on boarded:

Most the FPOs had an average of 5 to 6 directors and 4 FPOs had 10-12 directors. The starting membership count for the FPOs stood at 3,293, and by the conclusion of the audit period, it had surged to 5,604, underscoring the considerable proficiency of the FPO leaders in bolstering membership.

15% of members were women farmers. The MRC is working on the inclusion of more female members. Six FPOs, experienced a significant increase in membership, jumping from an average of 8-12 members to 250-300 members.

## Types of Crops sold:

The following were the crops sold by each FPO



S.No	Name of the FPO	Crops sold
1	Arulmigu Someshwarar FPO	Coconut,Nutmeg
2	Sri Velayudasamy FPO	Coconut
3	Karamadai FPO	Coconut,Banana
4	Bavani Amman FPO	Coconut,Banana,Vegetables
5	Sathy Bhairavi FPO	Coconut,Banana,Vegetables
6	Mariamman FPO	-
7	Manneeswarar FPO	-
8	Senniandavar FPO	-
9	Thondamuthur FPO	-
10	Palamalai FPO	Coconut
11	Sri Mahakaleshwarar FPO	Coconut
12	Guru Sidhagiri FPO	Hilly Vegetables
13	Malanadu FPO	Coffee, Pepper
14	Sri Hettai Amman FPO	Hilly Vegetables
15	Agni Mariamman FPO	Ragi & Groundnut
16	Kadayampatty FPO	Ragi & Groundnut
17	Adavalleeswarar FPO	Groundnut
18	Thencherimalai FPO	-
19	Tiptur FPO	Copra



S.No	Name of the FPO	Crops sold
20	Negila FPO	Coconut, & Ragi
21	Ponnad FPO	Input Shop, Coffee & Cardamom
22	Virajpet FPO	Input Shop, Coffee, Pepper
23	Nanjundeshwara FPO	Banana, Turmeric
24	Mallayyanna Giri FPO	Coconut, Ragi & Banana

An overview of the crops sold by the Farmer Producer Organizations (FPOs) indicated that coconut leads the list, followed by banana. This perhaps stems from the agricultural landscape of the region or market served by the FPOs. The presence of banana among FPOs suggests it is a staple crop in the area, albeit not as dominant as coconut. Additionally, the occurrence of other crops like coffee, ragi, and groundnut multiple times underscores their significance in the local agriculture. These crops likely play crucial roles either as cash crops or in meeting the needs of the community.

The general pattern followed by the crops suggests diversified farming practices. Farmers have been encouraged to indulge in intercropping or mixed cropping strategies to optimize land use and potentially mitigate risks associated with monoculture. The pairing of coconut with other crops like nutmeg, banana, vegetables, ragi, and groundnut indicates a deliberate effort to harness synergies between different crops, whether in terms of marketability, soil health, or pest management. This paints a picture of a diverse agricultural environment and is an indication of the positive effect of the inputs given by the various domain experts at ISHA.

## Turnover:

**The FPOs had turnovers ranging from just above 3 lakhs to just under 50 lakhs.**

S. No	Name of the FPO	Turnover (INR Lakhs)
1	Arulmigu Someshwarar Farmer Producer Company Limited	282.82
2	Sri Velayudasamy Farmer Producer Company Limited	162.6
3	Sathy Bhairavi Farmer Producer Company Limited	107.83
4	Malanadu Farmer Producer Company Limited	100.95
5	Ponnad Farmer producer company limited	49.47
6	Karamadai Farmer Producer Company Limited	43.81
7	Palamalai Farmer Producer Company Limited	34.64
8	Bavani Amman Farmer Producer Company Limited	19.73
9	Virajpet Farmer Producer company Limited	18.63
10	Sri Mahakaleshwarar Farmer Producer company Limited	16.75
11	Kadayampatty Farmer Producer company Limited	11.08



S. No	Name of the FPO	Turnover (INR Lakhs)
12	Adavalleeswarar Farmer Producer Company Limited	10.25
13	Guru Sidhagiri Farmer Producer Company Limited	10.23
14	Sri Hettai Amman Farmer Producer Company Limited	10.23
15	Agni Mariamman Farmer Producer Company Limited	10.02
16	Negila Siddha Farmer Producer company Limited	8.18
17	Mallayyanna Giri Farmer Producer Company Limited	7.21
18	Tiptur Farmer Producer Company Limited	4.11
19	Nanjundeshwara Farmer producer company Limited	3.67

Most of the FPOs with a turnover of less than ten lakhs were focusing on building their member base, establishing market connections, and were constrained by limited access to capital and markets. The FPOS with a turnover of Rs.51-100 lakhs were indicating a moderate level of operational scale and market engagement. These FPOs have surpassed the initial challenges of establishment and are on a path towards expansion and sustainability. Their activities include a broader range of agricultural inputs, services, and a wider geographical coverage/an extensive product range compared to those in the lower bracket. The turnover of above Rs. 100 lakhs showcases FPOs such as Arulmigu Someshwara Farmer Producer Company Limited, Sri Velayudasamy Farmer Producer Company Limited. These FPOs represents the most financially robust FPOs in the list, indicating a successful expansion into wider markets, a large member base, and a strong product/ service portfolio.

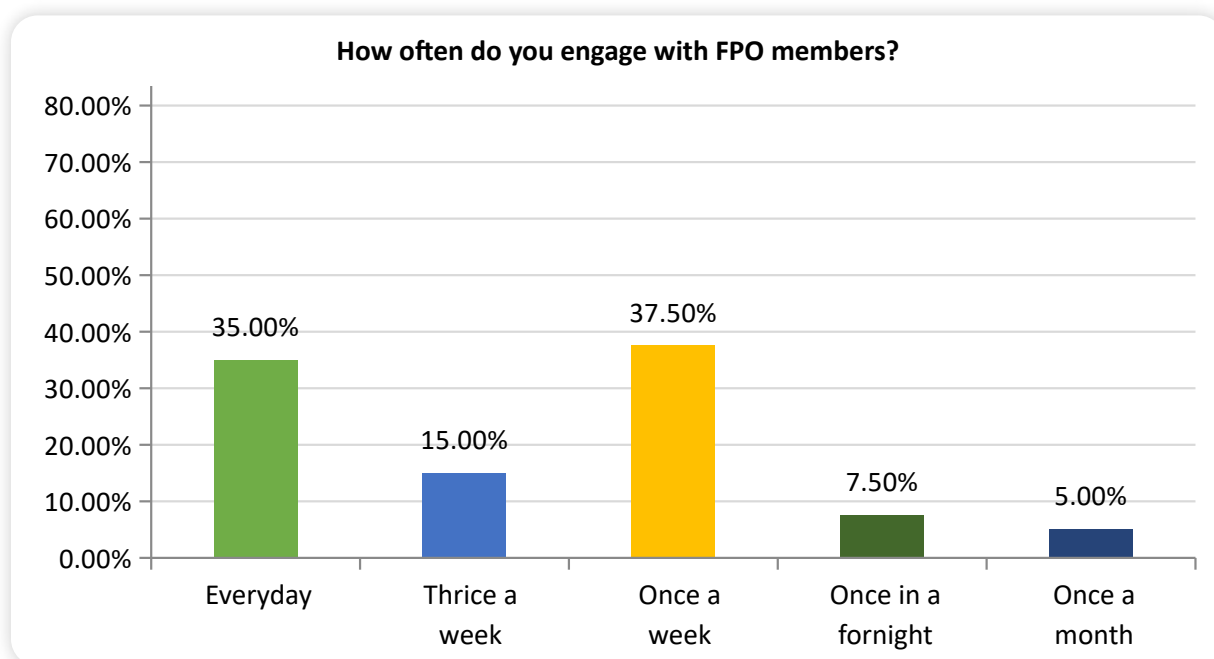
## a. Feedback from Online Survey

An online survey was conducted for 40 FPO Leaders via Survey monkey. The responses are detailed below

**Engagement between FPO members and leaders:** 37.5% of the leaders engage with other members once a week, closely followed by 35% who engage daily. 15%, engage three times a week, while 7.5% do so once in a fortnight, and 5.00% engage once a month. This data emphasizes a significant level of consistent interaction with FPO members, indicating ongoing involvement in activities related to FPOs.

**Engagement with FMRC team:** When asked about the frequency of contact by the Isha FMRC, a diverse pattern emerged. While 22.5% report daily contact and an equal proportion engage thrice a week, 17.5% maintain weekly contact. Conversely, 32.5% indicate monthly contact, suggesting a significant portion of respondents have less frequent interactions. This variation underscores a mix of regular and less frequent engagement with Isha FMRC, possibly reflecting differing levels of involvement or communication preferences among respondents.





## Reasons for engagement with FMRC

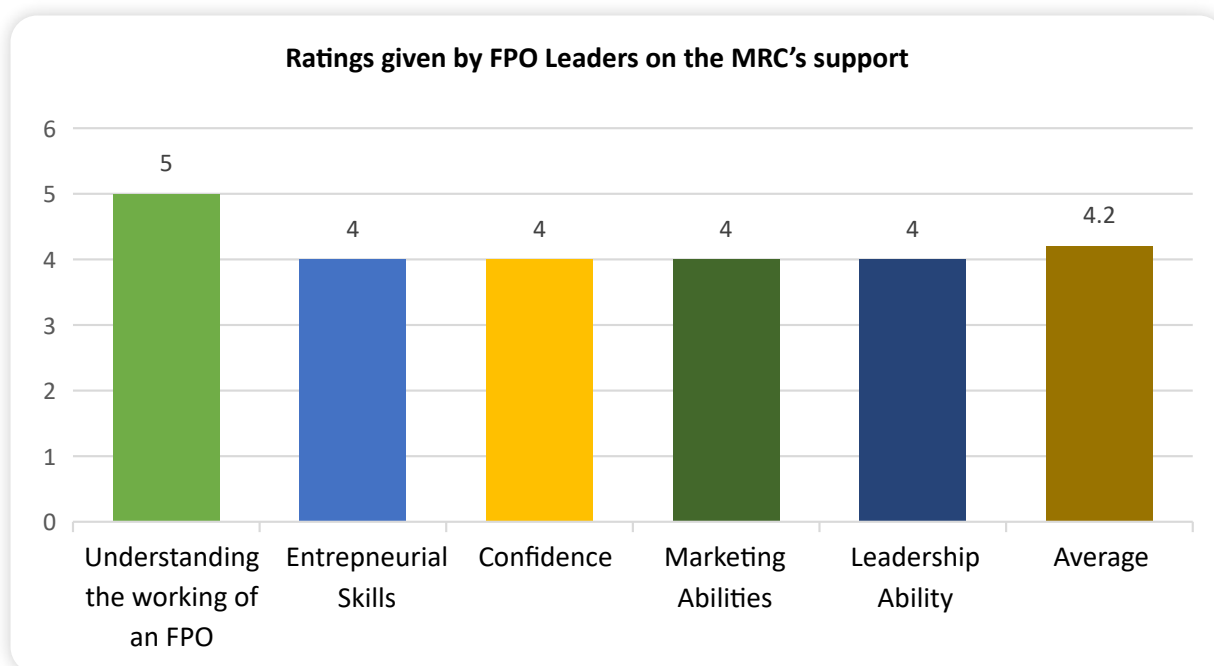
75% of the leaders consult for monthly reviews with FMRC, indicating a structured process for performance evaluation. Additionally, significant proportions consult for important decisions (70%) and whenever in doubt (65%), suggesting a reliance on FMRC for guidance and support in critical situations. Market linkages and seeking advice during crop price fixing are also common reasons, cited by 65% and 40% of respondents respectively. Furthermore, nearly half, 48%, consult the FMRC to share experiences.

Why do you consult them (tick all applicable)	%	Numbers
For taking all decisions within the FPO	55%	22
For some important decisions	70%	28
Whenever we are in doubt	65%	26
When we want market linkages	65%	26
While fixing the crop price	40%	16
To share our experience	48%	19
Monthly reviews	75%	30
Any Other	5%	2

## Overall Rating on the FMRC support funded by Chola:

The FPO leaders consistently rated the MRC's support positively across multiple critical avenues. With a top score in understanding the intricate workings of FPOs, the FMRC's guidance has evidently been comprehensive and effective.





While entrepreneurial skills, confidence-building, marketing abilities, and leadership development have all received great ratings, indicating substantial support, there remains slight room for improvement in these areas. Nonetheless, the overall average rating of 4.2 reflects a significant level of satisfaction among FPO leaders, highlighting the MRC's valuable contribution to the growth and success of FPOs and their leaders.

### Training:

A significant majority (90%) of the respondents feel they have received adequate training and support for their role, highlighting the effectiveness of FMRC in capacity building. This demonstrates a strong foundation for FPO leaders to effectively fulfill their responsibilities and drive organizational success. Moreover, 75% of respondents affirm that the training programs conducted by the FMRC have effectively enhanced the skills and knowledge of FPO members, reflecting positively on the efficacy of the FMRC's capacity-building initiatives. These responses collectively indicate a robust partnership between FPO leaders and the FMRC, fostering a culture of innovation, sustainability, and continuous learning within the agricultural community.

### Technology:

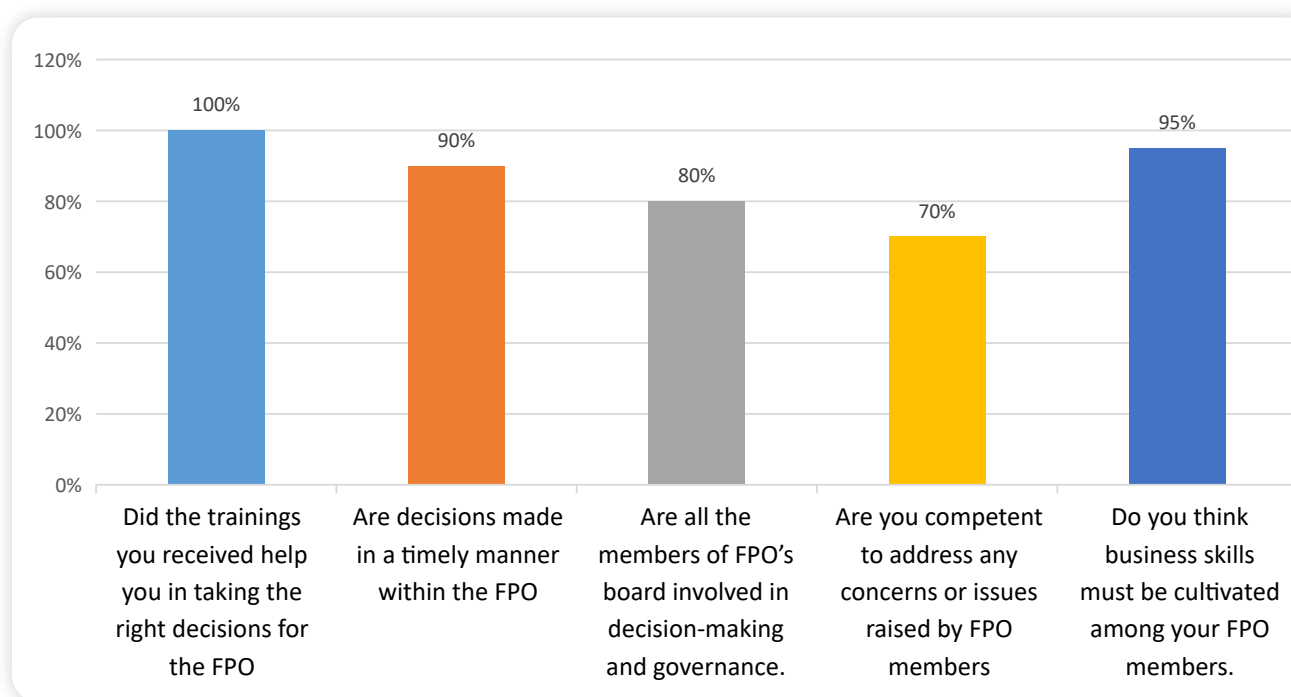
The responses of FPO leaders regarding the role of the FMRC in technology adoption, sustainability practices, and skill enhancement programs reflect a strong inclination towards modernization and sustainability. A significant majority, comprising 70%, express a keen interest in embracing modern farming techniques and best practices, indicating a proactive attitude towards technological advancements. Furthermore, an overwhelming 98% of leaders emphasize the importance of implementing environmentally sustainable agricultural practices among their members, underscoring a collective commitment to ecological responsibility.



	Are the farmers keen to adopt modern farming techniques and best practices.	Would you want your members to implement environmentally sustainable agricultural practices
Yes	70%	98%
No	8%	0%
To some extent	23%	3%

## Decision Making:

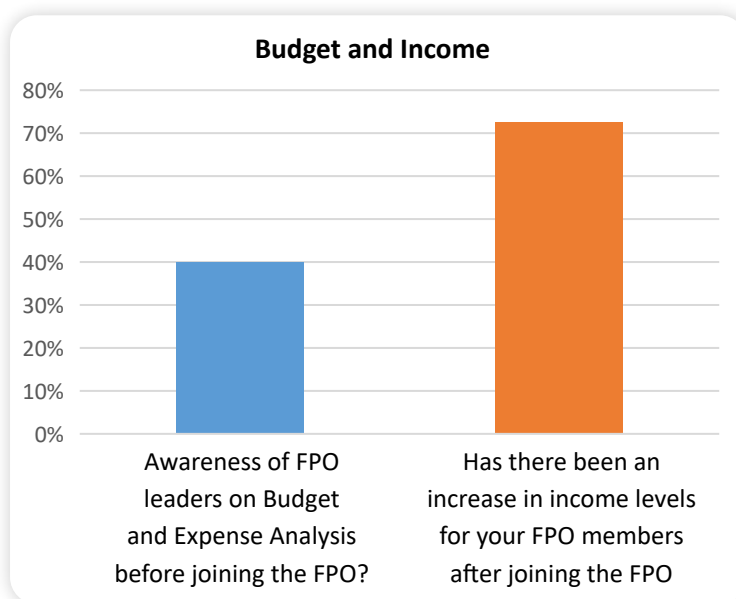
FPO leaders overwhelmingly acknowledge the pivotal role of the FMRC in facilitating effective decision-making processes and governance structures. The unanimous agreement, with 100%, that the training received aided in making informed decisions for the FPO underscores the valuable impact of FMRC's educational initiatives. Moreover, a substantial majority, comprising 90%, affirm the timeliness of decision-making within their FPOs, indicating efficient operational procedures. Additionally, 80% of leaders assert the inclusivity of decision-making processes, with a significant portion of the board actively involved, suggesting a democratic approach to governance. However, there is recognition of the need for continual improvement, with 70% of respondents expressing confidence in addressing member concerns, while 8% identify areas for enhancement. Furthermore, a resounding 95% of leaders advocate for the cultivation of business skills among FPO members, signalling a collective aspiration for sustainable growth and development. Overall, FPO leaders' responses underscore the FMRC's instrumental role in fostering transparent, inclusive decision-making processes and nurturing a culture of skill development and business acumen within agricultural communities.



## Knowledge about Budget and Income:

FPO leaders' responses regarding budget and income dynamics reflect a mixed awareness and outcomes, indicative of both challenges and progress facilitated by the FMRC (Farmers Producer Organization). While 40% of respondents indicate prior knowledge of budget and expense analysis before joining the FPO, a considerable portion, 35%, remained unaware, highlighting a gap in financial literacy that the FMRC could address through targeted education initiatives. Despite this initial disparity, 73% of leaders report a tangible increase in income levels among FPO members post-joining, underscoring the positive impact of FPO membership facilitated by the FMRC.

However, it is noteworthy that 18% still express dissatisfaction with income growth, suggesting the need for further support or refinement of strategies to maximize economic benefits. These responses collectively indicate both the potential and ongoing challenges in enhancing financial management and income generation within FPOs, emphasizing the pivotal role of the FMRC in providing guidance and resources to foster sustainable economic growth among agricultural communities.

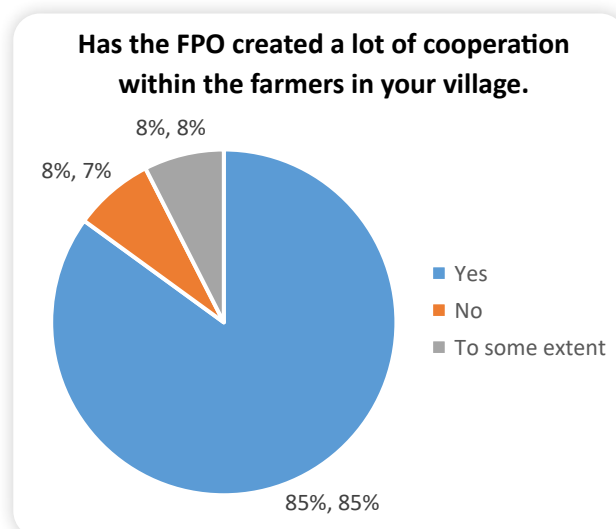


## Communication:

The leaders' responses regarding communication underscore the pivotal role of the FMRC in facilitating effective interactions both within and outside the agricultural community. A significant majority, comprising 75%, affirm their ability to negotiate better prices for their members, indicating the practical impact of FMRC-provided skills and resources in advocating for favorable terms. Furthermore, an overwhelming 95% of leaders express confidence in communicating clearly with farmers about FPO activities, highlighting the FMRC's success in promoting transparency and engagement within the agricultural ecosystem. These responses collectively underscore the FMRC's instrumental role in empowering FPO leaders with the communication tools and strategies necessary for advancing the collective interests of their members while fostering stronger community ties and cooperation.

## From I to We Mindset:

FPO leaders' responses regarding the level of cooperation within farmers in their village reflect a significant shift from individualistic to collective thinking, indicating the transformative impact of the FMRC (Farmers Producer Organization) in fostering a sense of community and collaboration. With 85% of respondents acknowledging a notable increase in cooperation among farmers, it suggests that the FMRC's initiatives have successfully influenced villagers





to transition from an 'I' mindset to a 'we' mindset. This change signifies a fundamental shift towards collective action, where farmers are now more inclined to work together for mutual benefit rather than focusing solely on individual interests. The FMRC's role in promoting shared goals, providing resources, and facilitating platforms for collaboration has evidently contributed to this shift, fostering a sense of solidarity and unity among villagers within the FPO framework.

#### **Mr Venkat Rasa- Head of ISHA's Outreach**

*Isha FMRC's approach goes beyond mere hand-holding; it fosters a culture of empowerment and collaboration. Our focus is not just on increasing profits but on building resilient and sustainable agricultural communities. This is achieved through a combination of training, mentorship, and advocacy aimed at creating an enabling environment for farmers to flourish. At all junctures, we aimed to push the farmers to think of 'I to WE.'*

### **Story of Hope – Dr.Yamunadevi**

*Dr. Yamunadevi's journey is a testament to the power of innovation, entrepreneurship, and community empowerment in rural India. One of the leaders at her FPO in SS Kulam, she embarked on a remarkable path of transformation, turning her agricultural land into a thriving hub of sustainability and economic prosperity.*

*Recognizing the untapped potential of her resources, Dr. Yamuna diversified her agricultural activities, leasing real estate to cultivate palmrosa (*Cymbopogon martini*) and nurturing coconut trees alongside. With the support of the FMRC, she established a state-of-the-art distillery in her home, investing 1.5 crores to extract valuable oil from palmrosa.*

*But Dr. Yamuna's success is not confined to profit margins. She is a champion of circular economy practices, utilizing every ounce of her produce. Waste is repurposed to feed her cattle, while the remaining residue is ingeniously transformed into an array of marketable products – from dhoop sticks to peppermint oil, handwash to tea infusions.*

*Yet, her impact stretches beyond her farm gates. Dr. Yamuna's leadership in the FPO has become a beacon of hope for rural communities. Through her example, she empowers farmers – particularly women – to embrace innovation, resilience, and self-sufficiency. She embodies the ethos of progress, demonstrating that with determination and ingenuity, even the most challenging landscapes can flourish.*

*Dr. Yamuna's success story is not just about profits; it's about empowerment. It is about unlocking the potential of land and people alike, fostering sustainability, and driving positive change in rural India. As she continues to inspire others with her unwavering commitment to innovation and community upliftment, Dr. Yamuna's legacy stands as a testament to the limitless possibilities of agricultural entrepreneurship.*



## Highlights of FMRC reported by the FPO Leaders through the survey

- **Engagement with FPO Members:** The majority of FPO leaders engaged with other members frequently, indicating active involvement in FPO activities and fostering a sense of community among members. While there is a diverse pattern of engagement with the FMRC team, a significant portion of respondents maintain regular contact, particularly for monthly reviews and important decision-making.
- **Reasons for Engagement with FMRC:** FPO leaders consult the FMRC for various reasons, including decision-making support, market linkages, and sharing experiences, highlighting the FMRC's role as a valuable resource for guidance and assistance.
- **Overall Rating on FMRC Support:** FPO leaders consistently rate the FMRC's support positively, particularly in understanding FPO intricacies, entrepreneurial skills, and leadership development, indicating high satisfaction levels with FMRC assistance.
- **Training and Capacity Building:** The majority of FPO leaders feel they have received adequate training and support from the FMRC, highlighting the effectiveness of capacity-building initiatives in enhancing skills and knowledge among members.
- **Technology Adoption and Sustainability:** FPO leaders express a strong inclination towards modernization and sustainability, with high interest in embracing technology and implementing environmentally sustainable agricultural practices.
- **Decision Making and Governance:** The FMRC plays a pivotal role in facilitating transparent and inclusive decision-making processes within FPOs, fostering a culture of skill development, business acumen, and democratic governance.
- **Budget and Income Management:** While there are mixed levels of awareness about budget and income dynamics, the FMRC's support has led to tangible increases in income levels among FPO members, indicating the effectiveness of FPO membership in economic growth.
- **Communication and Collaboration:** FPO leaders credit the FMRC for empowering them with communication tools and strategies, facilitating better negotiation and clear communication with farmers, fostering stronger community ties and cooperation.
- **Shift from Individualistic to Collective Thinking:** There is a notable shift from individualistic to collective thinking among farmers, influenced by FMRC initiatives, fostering cooperation and unity within the FPO framework.



## 7. Evaluation of the Project using REESS Framework

The objectives of the FPO Management Resource Centre were evaluated using the REESS framework. REESS framework measures the performance of a project on five parameters – Relevance, Effectiveness, Efficiency, Social Impact and Sustainability. Various indicators were developed for the project based on the REESS framework.

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### Relevance:

#### Is the intervention doing the right things?

The extent to which the objectives of a development intervention are consistent with institutional and beneficiary's requirements, alignment with partner organization, donor's mission, and country's need.

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### Effectiveness:

#### Is the intervention achieving its objectives?

The extent to which the development intervention's objectives were achieved, or are expected to be achieved, considering their relative importance.

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### Efficiency:

#### How well are the resources being used?

The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.

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### Sustainability:

#### Will the benefits (financial, economic, social, environmental, and institutional capacities) sustain over time

The continuation of benefits from a development intervention after major development assistance has been completed.

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### Social Impact:

#### What difference does the intervention make?

The extent to which the intervention has generated or is expected to generate significant positive or negative, intended, or unintended, higher-level effects.

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## a. Relevance

The relevance of the initial trainings given for FPOs can be assessed by evaluating its impact on regarding skill enhancement, improved decision-making, and financial literacy of its members. Further training given would be relevant to agricultural productivity and market access for the farmer members.

**Need for training in FPOs:** The ISHA FMRC holds significant relevance in the context of the FPOs primarily due to its role in providing essential handholding support. Many farmers, especially those belonging to marginalized communities, lack the resources and knowledge to navigate the complexities of modern agricultural practices and market dynamics. The ISHA FMRC addresses this gap by offering guidance, training, and assistance to FPOs, empowering them to enhance their agricultural productivity and market access.

**Reaching the marginalised:** Marginalized farmers often face numerous challenges, including limited access to credit, inadequate infrastructure, fluctuating market prices, and climate change impacts. The ISHA FMRC plays a crucial role in addressing these issues by providing tailored awareness, support, and resources to help farmers overcome obstacles and improve their livelihoods.

**Non-availability of similar service providers:** One notable aspect is the dearth of similar organizations capable of effectively handholding FPOs. Many NGOs lack the expertise, resources, or mandate to provide comprehensive support to FPOs, highlighting the unique role of ISHA FMRC in filling this gap.

*A farmer should not be part of any other FPO, if he must join our FPO. This is one of the main conditions for selecting farmers to be members of an FPO. So, the farmers come with an open mind. We motivate them to sell the products to the FPO and minimise their direct selling or selling through middlemen. Initially they are involved in all these methods but after a while they only sell their produce through the FPO. – FPO leader*

**Alignment with the Public system:** The Government of India (GOI) mandates promoting FPOs as a key strategy to empower farmers, enhance their bargaining power, and strengthen the agricultural value chain. By aligning with GOI mandates, the ISHA FMRC not only contributes to national agricultural objectives but also ensures the effective implementation of government schemes and policies at the grassroots level.

**Alignment with UN SDG:** The MRC's initiatives align with the United Nations Sustainable Development Goals (SDGs), particularly those related to poverty alleviation, food security, gender equality, and sustainable agriculture. By focusing on these goals, the organization contributes to broader global efforts to achieve sustainable development and ensure inclusive growth.

**Alignment with Chola's CSR initiative:** In addition to its alignment with government and international agendas, the ISHA FMRC's activities resonate with Chola's Corporate Social Responsibility (CSR) initiatives. Chola, as a responsible corporate entity, recognizes the importance of supporting rural communities and promoting sustainable agriculture. Partnering with the ISHA FPO MRC allows Chola to leverage its resources and expertise to make a meaningful impact on the lives of farmers and contribute to rural development.



**Alignment with ISHA Foundation's vision:** The FMRC's efforts complement ISHA's broader outreach programs aimed at holistic rural development. By synergizing with ISHA's initiatives in areas such as agriculture and environmental conservation, the FMRC contributes to creating sustainable livelihoods and fostering vibrant rural communities.

## b. Effectiveness

The effectiveness of FMRC can be gauged by evaluating skill enhancement, market access improvements, adoption of sustainable practices, income growth among members, successful implementation of learned techniques, and overall contribution to the FPOs' development and market engagement.

**Establishment of FPOs:** The FMRC facilitated the establishment of 24 FPOs across various regions, providing them with essential resources and guidance. It also played a crucial role in ensuring that the legal processes for these FPOs were meticulously handled, including registration, drafting of bylaws, and compliance with regulatory requirements.

**Capacity upgradation of FPO leaders:** Through comprehensive training and capacity-building programs, FMRC empowered FPO leaders with the necessary skills and knowledge to effectively manage their organizations, lead their members, and navigate challenges in the agricultural sector.

*The FMRC has been a game-changer for us. Through the program, we have gained confidence in our ability to manage finances effectively. Budgeting, which used to be a daunting task, is now a process we approach with clarity and purpose. – FPO leader*

*The FMRC has equipped us with the skills and knowledge needed to navigate financial challenges and capitalize on opportunities. We're grateful for the support and guidance provided, which has enabled us to thrive as an FPO. – FPO leader*

**Resource Provision:** The FMRC served as a hub for knowledge dissemination, offering resources such as training modules, expert trainers, subject-matter experts and technical assistance, and best practices to FPO members. By providing these resources, the FMRC empowered the FPOs with the necessary skills and knowledge to effectively manage their operations, understand market dynamics, and make informed decisions.

*Through the various trainings offered at FMRC we have learned the importance of budgeting as a strategic tool for growth. We now have a deeper understanding of our financials, allowing us to make informed decisions with confidence. The FMRC has been a catalyst for our success, providing us with the skills and knowledge needed to thrive in today's dynamic marketplace. – FPO Leader*



**Awareness of Rights and Duties:** The project played a crucial role in enhancing the awareness of FPO members regarding their rights and responsibilities. This included educating members about government schemes, entitlements, and legal frameworks relevant to their operations. By fostering a deeper understanding of their rights and duties, FPO members were better equipped to navigate challenges and advocate for their interests.

**Management Setup and Legal Structures:** The FPOs were assisted in setting up robust management structures and legal frameworks. This involved providing guidance on governance mechanisms, structuring of boards, drafting of bylaws, and ensuring compliance with regulatory requirements. By establishing sound management practices and legal structures, FPOs enhanced their credibility, governance transparency, and operational efficiency.

*The expertise brought in by ISHA's domain experts was instrumental in our journey in our FPO. With their guidance and support, we were able to navigate the complexities of our journey and make informed decisions. The support from FMRC in obtaining the necessary certifications was invaluable. These certifications not only validate our commitment to quality and sustainability but also open doors to new opportunities and markets. – FPO Leader*

**Leadership Development:** Effective leadership was essential for the success of FPOs. The program facilitated leadership development programs aimed at equipping FPO leaders with the necessary skills in strategic planning, team management, negotiation, and advocacy. Strong leadership will enable FPOs to effectively represent the interests of farmers, drive organizational growth, and navigate complex market dynamics.

*It takes nearly two hours for us to interview a farmer to select him to be a FPO leader. We have evolved a set of 21 criteria for recruiting the FPO leader, and we select leaders accordingly. It is a very exhaustive list. We then explain the vision of an FPO and make them understand and relate to it. It is the holistic well-being of the farmer members that they should concentrate and not only marketing. – Head, Isha Outreach*

**Provision of Facilities like Soil Testing:** The provision of facilities such as soil testing enabled farmers to make informed decisions based on scientific data, optimizing resource allocation, and improving crop yields, thus contributing to improved decision making. By investing in infrastructure and technology, the FMRC facilitated access to critical services, empowering farmers to adopt evidence-based practices and enhance productivity in a sustainable manner.

*The Soil Testing Centre is operational for the last few months. The farmers from the FPO send their soil samples here for soil testing. It is not mandatory for the farmers to the soil testing but we recommend them to do it. The services here is offered at a very subsidised rate. The report generated recommends them on how to enrich their soil post the testing. – Technician, Isha Soil Testing Centre*



**CBBOs to Handhold Domain Experts:** The establishment of CBBOs served as bridges between domain experts and local communities, facilitating effective communication and collaboration, thus ensuring that interventions were culturally sensitive and contextually appropriate, maximizing their effectiveness and acceptance. By fostering partnerships and mutual understanding, CBBOs enhanced the relevance and impact of FMRC initiatives, bridging gaps and facilitating meaningful change at the grassroots level.

*Working with ISHA's mentors has been a game-changer for our FPO leaders. Their insightful guidance has equipped us with the necessary tools and knowledge to navigate the complex coconut market landscapes and effectively engage potential members. Through personalized mentorship sessions, we gained a deeper understanding of our marketing strategies, and implemented approaches to attract new members. Thanks to ISHA's mentors, we've witnessed remarkable progress in both market penetration and member recruitment, empowering our FPO to thrive in today's competitive environment. – FPO Leader*

**Market Understanding:** The MRC played a crucial role in enhancing FPOs' understanding of markets. This included market research, value chain analysis, identification of market opportunities, and development of market linkages. By gaining insights into market dynamics, FPOs optimized their production, pricing, and marketing strategies to maximize returns for their members.

*Our experience with the FMRC has been transformative. It is not just about financial management; it is about instilling confidence in our members. Through the program, we have learned to navigate complex financial landscapes with assurance. Budgeting, once a daunting task, has become a strategic tool for us. We now understand the nuances of budgeting and how it impacts our operations. This newfound knowledge has empowered us to make informed decisions, driving the success of our FPO forward. – FPO Leader*

**Avenues for Add-ons:** The support provided by the MRC facilitated the exploration of additional revenue streams and value-added opportunities for FPOs. This involved diversifying product offerings, adopting innovative technologies, or engaging in value chain integration. By expanding avenues for add-ons, FPOs enhanced their income-generating potential and strengthened their financial sustainability.

**Leveraging Localized Support:** The program recognized the importance of localized support tailored to the specific needs and context of FPOs. This involved engaging with stakeholders at the grassroots level, understanding local challenges, and co-creating solutions in collaboration with FPOs and other relevant actors. By providing localized support, FMRC ensured that interventions were contextually relevant and impactful.

*The FMRC support has been pivotal in our FPO's endeavour to create value-added products like oils, soaps, scrubs, and puja items. With the guidance and resources provided through the program, we were able to innovate our product line and cater to diverse consumer preferences. – FPO Leader*

*The FMRC not only helped us in sourcing high-quality raw materials but also provided expertise in product development and packaging. As a result, we were able to introduce a range of items that have been well-received in the market. These value-added products have not only enhanced our brand reputation but also contributed significantly to our bottom line. – FPO Leader*





## c. Efficiency

The efficiency of the FMRC is evaluated by analyzing resource utilization, farmer engagement, timely delivery of content, cost-effectiveness, scalability of programs, and the center's ability to meet the evolving needs of FPOs.

**Overall Reach:** The project exhibits remarkable efficiency in terms of overall reach. By making these programs accessible to the poor farmers, regardless of socioeconomic background, the center ensures that the benefits reach a wide range of individuals across various geographies. This extensive reach underscores the program's effectiveness in the holistic development of the farmers.

**Leveraging Resources for small farmers:** The establishment of the FPOs by the FMRC catalysed rural development by creating platforms for collective action and knowledge exchange, fostering agricultural practices and economic empowerment within the community. Through capacity-building initiatives and market linkages, the FMRC set the platform for increasing operations, enabling FPOs to effectively leverage resources and navigate challenges, thereby enhancing their resilience and viability in the long run.

**Optimal Utilization of Skill Sets:** Through strategic engagement of domain experts, the program ensured that specialized tasks were executed with precision, maximizing the impact of interventions, and harnessing the full potential of ISHA volunteers and employees, thereby enhancing organizational effectiveness and efficiency. By aligning expertise with specific needs, the FMRC optimized resource allocation and minimized duplication of efforts, ensuring that interventions were targeted and impactful.

*By introducing value-added services within our FPO, we have been able to diversify our revenue streams and enhance profitability. This strategic initiative involved offering various products to identify opportunities for expansion and differentiation. By encouraging us to consider various distribution channels, including wholesale, retail and direct home delivery, ISHA has helped us to maximize market reach and capture new customer segments. – FPO leader*

**Decentralization:** Embracing decentralization empowered local stakeholders to address challenges with agility and relevance, fostering local ownership and enabling solutions tailored to specific needs. This bottom-up approach will build local capacity and foster a sense of ownership and responsibility, driving meaningful change from within the FPOs and strengthening cohesion among farmers.

**Meeting the Objectives of the MOU:** By aligning actions with the objectives outlined in the MOU, and adhering to the time lines has built the trust and credibility among partners, fostering a conducive environment for collaboration and resource mobilization, thus enhancing the sustainability and impact of joint initiatives. Through regular communication and stakeholder engagement, the FMRC maintained transparency and accountability, ensuring that all parties remained committed to shared goals and objectives, thereby maximizing the collective impact of collaborative efforts.

**Regular Monitoring:** The implementation of regular monitoring mechanisms enabled the FMRC to identify challenges and opportunities in real-time, facilitating prompt adjustments and improvements, thus ensuring that interventions remained relevant and responsive to evolving needs and circumstances. By collecting and analysing data systematically, the FMRC gained valuable insights into program effectiveness and efficiency, enabling evidence-based decision-making and continuous improvement over time.



*The FMRC team is available 24X7 to us. Whenever we have a doubt or want to decide on any important matter, we call them or meet them and get it cleared. They monitor our activities regularly and this has made us function efficiently. If not for their guidance, running a FPO would be a daunting task – FPO Leader*

**Accommodating Localized Interventions and Value-Added Services:** Through flexible programming and tailored interventions, the FMRC addressed diverse needs and preferences within communities, fostering ownership and buy-in, thus strengthening social cohesion and resilience at the grassroots level. By adapting strategies to local contexts and leveraging community assets, the FMRC maximized the relevance and impact of interventions, ensuring that resources were utilized effectively to address priority challenges and opportunities.

**Monitoring and Evaluation:** By assessing progress and outcomes, the FMRC identified best practices and areas for improvement, enabling informed decision-making and adaptive management, thereby maximizing the long-term sustainability and impact of its interventions. The data provided by the FPO leaders highlights a wide range of engagement frequencies among FPO leaders and Isha FMRC. Nearly 75% of the FPOs report daily or thrice a week, indicating a high level of involvement and robust communication channels.

## d. Sustainability

**Financial Viability:** The FPOs demonstrate the ability to generate significant revenue, which is essential for their continued operations, while ISHA maintains its sustainability through various financial sources such as grants, donations, and support from other donors. This dual approach ensures a steady flow of resources, enabling both ISHA and the FPOs it supports to thrive. The growth trajectory of the FPOs in terms of membership, productivity, and income not only highlights their potential for impact but also indicates a successful model for scaling and replication in similar contexts, making a compelling case for further investment.

**Capacity Building:** The training programs offered by the center to FPOs are pivotal in enhancing their capabilities in agricultural practices, business management, and market access. These initiatives lead to better-informed decisions, more sustainable farming techniques, and increased profitability. By equipping FPO members with agricultural knowledge and business skills, the center helps bridge the gap between traditional farming methods and contemporary market demands, ensuring the FPOs' competitiveness and sustainability.

*Our confidence in achieving independence within five years stems from the strategic approach and continuous efforts of the ISHA team. By harnessing the knowledge and skills learned, we are building a solid foundation for self-reliance. We are investing in capacity building and market expansion to strengthen our operations and enhance our competitiveness. – FPO Leader*



**Adoption of Localized Practices:** The availability of a soil testing lab at the ISHA center has been instrumental in promoting localized farming techniques. By understanding the specific needs of each centre's soil and environment, FPOs can adopt agricultural practices that are both sustainable and productive. This tailored approach not only improves crop yields but also ensures that farming practices are environmentally friendly and suited to local conditions, thereby increasing farmers' resilience to climatic variations, and boosting their confidence in adopting new techniques.

**Governance Structure:** The governance structures of the FPOs supported by the center stand out for their robustness, characterized by democratic decision-making processes and transparent financial management. This structure fosters an environment of trust and accountability, crucial for the long-term success of any organization. The recruitment of directors is carried out with a focus on integrity, expertise, and commitment to the FPOs' mission, ensuring that leadership is both competent and aligned with the organization's goals, which is essential for driving growth and navigating challenges.

*As we progress towards increasing the number of members, we remain committed to realizing our vision of a thriving, self-sustaining enterprise that positively impacts our community and the environment. – FPO Leader*

**Market Linkages:** The FMRC's success in establishing market linkages for FPOs opens up vital channels for selling their products, accessing fair trade markets, agri-processing units, and retail outlets. This not only increases the visibility of FPOs' products but also adds significant value through processing, branding, and packaging. This improves market competitiveness and consumer appeal, leading to higher income for farmers and promoting the sustainability of agricultural practices by connecting them directly with consumers and larger markets.

**Stakeholder Engagement:** The robust collaboration between ISHA FMRC, FPOs, government agencies, and other stakeholders has created a supportive ecosystem for agricultural development. The satisfaction levels reported by FPO heads regarding the support and services provided by the center reflect a successful model of engagement and cooperation. This collective approach not only amplifies the impact of individual efforts but also fosters a sense of community and shared purpose among stakeholders, contributing to more cohesive and sustainable development initiatives in agriculture.

**Resilience to External Factors:** The FMRC's focus on equipping FPOs to be resilient to external factors such as climate change, market volatility, and policy changes is pivotal. By developing and implementing continuity plans, the center not only ensures its own operational sustainability but also prepares FPOs to face and adapt to challenges proactively. This strategic foresight in planning and risk management is essential for navigating uncertainties in the agricultural sector, allowing both the center and the FPOs to maintain stability and continue their mission even under adverse conditions.

*Leveraging the FMRC's expertise in processing and packaging, we were able to create high-quality, premium offerings that stand out in the market. From cold-pressed oils to chips, each product is crafted with care and attention to detail. The FMRC's support has not only enabled us to diversify our product portfolio but also generate additional revenue streams, ultimately strengthening the sustainability of our FPO. – FPO Leader*



## e. Social Impact

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Assessing the social impact of a FPO is crucial for understanding its role in improving farmers' livelihoods, promoting sustainable agricultural practices, fostering community development, and informing strategic decision-making.

**Reducing Inequalities:** ISHA's FMRC has focused on reducing inequalities by empowering small and marginal farmers through FPOs. By enabling collective bargaining power, these FPOs have allowed farmers to access better market opportunities and fair prices, effectively levelling the playing field with larger agricultural businesses. The initiative's emphasis on collective resource pooling has been instrumental in ensuring that economic benefits reach the grassroots level, thereby diminishing the rural-urban divide.

**Promoting Gender Inclusivity:** Recognizing the critical role of women in agriculture and their often-limited access to resources, ISHA has actively involved women in the FPOs. By providing women with training, support, and leadership opportunities, the initiative has given them the platform to empower them economically and enabled their voices to be heard in decision-making processes. This approach has had a ripple effect, enhancing household welfare and community development.

**Enhancing Access to Resources:** Through FPOs, ISHA's FMRC initiative has significantly improved farmers' access to essential resources, including credit, inputs, technology, and information. By negotiating better terms with partners, the initiative has helped to overcome traditional barriers faced by smallholder farmers. This enhanced access to resources has been crucial in improving agricultural productivity and profitability, driving a sustainable increase in income for marginalized farmers.

**Building Social Capital:** ISHA has been pivotal in building social capital among rural communities. The formation and strengthening of FPOs have fostered a sense of collaboration and trust among farmers, enabling the exchange of knowledge and best practices. This environment of mutual support and solidarity is essential for addressing common challenges and leveraging opportunities, ultimately strengthening the social fabric of rural areas.

**Empowering Rural Communities:** Going beyond economic empowerment, the initiative has contributed to the holistic development of rural areas. By engaging in capacity building, environmental conservation, and value-added initiatives, among others, the initiative has addressed multiple dimensions of rural development. This comprehensive approach has not only uplifted the quality of life in rural communities but has also increased their resilience to economic and environmental challenges.



**5 A's of Impact:** FMRC played a vital role in enhancing accessibility, affordability, acceptability, accommodation, and availability of resources and knowledge for 20 FPOs.

- **Accessibility:** The FMRC served as a vital platform for enhancing accessibility to crucial resources and knowledge for FPOs. By providing training programs, FPOs from diverse regions could easily access the expertise and resources they required without the need for extensive travel or investment of significant time and effort. The FMRC acted as a centralized hub for sharing best practices and market insights, thereby democratizing access to essential information regardless of geographical location.
- **Affordability:** The trainings and resources like soil testing facilitated by the FMRC substantially reduced costs for participating FPOs. FPOs could benefit from shared resources and infrastructure provided by the MRC. This pooling of resources enabled ISHA to bring in experts and trainers at zero cost to the FPO, making high-quality training more financially viable.
- **Acceptability:** The FMRC's prior experience from the field with the Veliangiri Uzhavan FPO played a pivotal role in creating the training programs and curriculum, ensuring that the knowledge and skills acquired by FPOs were widely accepted within the agricultural community.
- **Accommodation:** The FMRC catered to the diverse needs of FPOs by offering tailored solutions that addressed specific challenges and opportunities faced by different geographies and sectors within agriculture. The sessions were customized to accommodate various levels of expertise, ensuring that all participants could effectively acquire and apply the knowledge gained. This adaptable approach to training ensured that the FMRC met the unique requirements of each FPO, thereby maximizing its effectiveness.
- **Availability:** Leveraging its network and partnerships, ISHA provided access to specialized training modules, technologies, and market ideas that may not have been readily available to individual FPOs. This ensured that FPOs had access to pertinent information and resources necessary for their establishment and success, thereby solidifying their role as a support system for the farmers.

## 8. Alignment with UN SDG

The program supports handholding of FPOs as part of a multifaceted approach crucial for achieving the following United Nations' Sustainable Development Goals (SDGs).



The program contributes significantly to the SDG of eradicating poverty (SDG 1) by uplifting rural farming communities and providing them with opportunities for sustainable economic growth. In the long run, the FPOs will serve as a platform that will break the cycle of poverty.

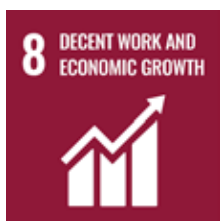




ISHA plays a pivotal role in addressing the goal of zero hunger (SDG 2). Through capacity-building programs and the promotion of viable agricultural practices, initiatives empower farmers to enhance their productivity while adapting to market channel changes. By encouraging the adoption of diversified farming techniques and facilitating access to resources and knowledge, the program will contribute to food security and improved nutrition outcomes.



The program contributes to SDG 3 by improving agricultural productivity, promoting sustainable farming practices, and facilitating access to nutritious food in rural communities. Through providing resources, training, and market opportunities, FPOs contribute to poverty reduction, a key determinant of health outcomes and well-being of farmers.



By empowering farmers with the skills, resources, and opportunities necessary to thrive in the agricultural sector. By providing training, facilitating access to value addition activities, and promoting entrepreneurship among farmers, handholding initiatives create pathways for sustainable employment and income generation in rural areas.



The program prioritizes marginalized groups, including smallholder farmers, women, and indigenous communities, by providing them access to resources, market opportunities, and capacity-building programs. By promoting inclusive decision-making processes within FPOs, these initiatives empower marginalized farmers to actively participate in shaping their economic and social development, thereby contributing to the reduction of disparities.



By strengthening local economies and providing employment opportunities in rural areas, the program contributes to the vitality and resilience of the farming communities.



By teaching the farmers about their health, the inputs required, and soil conservation techniques, handholding initiatives prevent land degradation, preserve biodiversity. Moreover, the FPOs are encouraged to implement sustainable land use practices that support the long-term health of soils and habitats, thus supporting the objectives of SDG 15.



The program exemplifies the spirit of partnerships for the goal (SDG 17) by fostering collaboration among diverse stakeholders, including government agencies, non-governmental organizations, financial institutions, and private sector entities.





## 9. Recommendations

**Tailored Support:** FMRC should provide tailored support to the newly formed FPOs based on the specific needs and challenges of FPOs, focusing on areas such as decision-making, market linkages, and skill development. As these FPOs are involved in crops other than coconut and banana, customising the trainings according to the evolving needs of the FPOs is crucial for their sustenance.

**Feedback Mechanisms:** FMRC should establish robust feedback mechanisms to gather regular input from FPO leaders and members, enabling continuous improvement and responsiveness to their needs and concerns. These should also be documented so that a FPO - Q&A book based on this feedback could be created by the FMRC.

**Allied Sectors Development:** The FMRC should introduce specific training programs and resources focusing on allied sectors like horticulture, fisheries, and animal husbandry. These programs should aim to enhance knowledge, skills, and practices in these sectors, thereby diversifying income sources for FPO members.

**Addressing Cultural and Social Constraints:** Implementing culturally sensitive approaches and awareness campaigns can help overcome social constraints that hinder participation, especially among marginalized groups. Providing platforms for open dialogue and community engagement can foster understanding and acceptance of FPOs' roles and benefits.

**Promotion of Processing and Value Addition:** Offering training and support in processing and value addition techniques can add significant value to agricultural products. FMRC can facilitate access to technology, funding, and market linkages for setting up processing units, thereby increasing profitability for FPO members.

**Infrastructure Development and Storage Facilities:** FMRC to identify sponsors to invest in the creation of better infrastructure and storage facilities for FPOs. This could include cold storage units, warehouses, and transportation infrastructure to ensure the quality and safety of agricultural produce and reduce post-harvest losses.

**Adoption of New Technology:** Providing access to new agricultural technologies and practices can enhance productivity and efficiency. FMRC should organize workshops, demonstrations, and technology fairs to promote the adoption of modern farming techniques among FPO members.

**Inclusion of Women Farmers:** Implementing gender-sensitive policies and initiatives can encourage the participation of women farmers in FPOs. Providing targeted training, financial support, and leadership opportunities can empower women to actively engage in decision-making processes and benefit from FPO membership.

**Crop Insurance Support:** ISHA should collaborate with Chola to provide crop insurance schemes tailored to the needs of FPOs. This will protect FPO members against crop failures, natural disasters, and market fluctuations, ensuring financial stability and resilience in farming operations. Additionally, FMRC should offer training on insurance literacy to enhance understanding and uptake of insurance products among FPO members.





## 10. Conclusion

Isha's Farmer Producer Organizations Resource Centre (FMRC) has played a pivotal role in supporting Farmer Producer Organizations through a multifaceted approach. Firstly, it has provided essential resources such as technical know-how, financial support, enabling the FPOs to improve agricultural practices and increase productivity. Secondly, FMRC has conducted extensive training programs focused on capacity building, leadership development, and market linkage strategies, empowering FPO members with the necessary skills and knowledge to effectively manage their organizations and negotiate fair prices for their produce. Additionally, FMRC has facilitated collaborations between FPOs and various stakeholders including government agencies, private sector entities, creating opportunities for FPOs to access new markets, technologies, and support schemes. Through these initiatives, FMRC has played a crucial role in strengthening the resilience and sustainability of FPOs, ultimately contributing to the socioeconomic development of rural communities across India.





# The Isha Action for **Rural Rejuvenation Program**

A CSR Initiative of Cholamandalam  
investments & finance ltd.

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# 1. Introduction

Access to quality primary healthcare services is critical to good health, yet those in rural areas and tribal communities find it challenging to receive timely care at an affordable cost. Primary healthcare, typically entails preventive and curative treatment and is the first line of succour for the community.

In India, the Government has established Primary Health Centres (PHCs) as a cornerstone of its efforts to deliver universal health coverage, particularly in rural and tribal areas. Despite these efforts, access to timely healthcare remains a significant challenge. One of the primary reasons for this is ineffective planning and resource allocation, leading to understaffed and under-equipped facilities. Many PHCs lack essential medical supplies, diagnostic equipment, and adequately trained healthcare professionals, making it difficult for them to meet the diverse healthcare needs of their communities. Hence, individuals in rural and tribal areas often face barriers in accessing even basic healthcare services, exacerbating health disparities and leading to preventable illnesses and deaths.

Lack of awareness about available healthcare services and their importance, particularly among marginalized communities, contributes to poor healthcare access. Additionally, the high cost of healthcare, coupled with limited financial resources among rural and tribal populations, poses a significant barrier to accessing timely care. Addressing these multifaceted challenges requires a comprehensive approach.

Recognizing the importance of this, ISHA Outreach launched a rural health initiative tailored to meet the needs of the downtrodden and marginalised. Through the establishment of Rural Health Clinics and Mobile Health Clinics, the organization aimed to increase the access of the poor and marginalised to low-cost quality healthcare which reduces out of pocket expenditure (OOP).

During the fiscal year 2022-23, Cholamandalam Investment and Finance Company Limited collaborated with ISHA Outreach to support the project which was titled 'ISHA Action for Rural Rejuvenation'. This report outlines the findings of the Social Impact Assessment conducted on the program conducted by Social Audit Network. It sheds light on the importance of the program and its impact on society, particularly the vulnerable communities at large).

## About Chola

Cholamandalam Investment and Finance Company Limited (Chola), incorporated in 1978 is the financial services arm of the Murugappa Group. Chola provides a variety of financial services to customers. Chola operates from 1309 branches across India with assets under management above INR 1,41,143 Crore. In order to fulfil its objectives of contributing to society, Chola carries out CSR programs as a blended activity along with business. This is done not only in the geographies where the organization operated but also extends to the neglected and needy segments of society. Chola's CSR initiatives are currently concentrated in 12 states - Tamil Nadu, Delhi-NCR, Maharashtra, Assam, Karnataka, Chhattisgarh, Odisha, Uttar Pradesh, Telangana, Rajasthan, West Bengal and Madhya Pradesh. The CSR initiatives focus on key areas like health, education, water & sanitation, arts & culture, sports, rural development, environmental sustainability, research & development, and road safety.



## About Isha Foundation

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Isha Foundation, under the guidance of Sadhguru, implements outreach and mobile health programs aimed at improving healthcare accessibility, particularly in rural and underserved areas of India. Some of the key outreach programs of Isha Foundation include:

- \* Inner Engineering
- \* Rally for Rivers
- \* Isha Vidhya
- \* Project GreenHands
- \* Action for Rural Rejuvenation (ARR)
- \* Isha Outreach

## Role of ISHA Outreach

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Isha Outreach, the social development initiative of the ISHA Foundation is a comprehensive set of programs that inspires people to care for themselves and their communities through large-scale, sustainable, and culturally appropriate health, education, environment, and livelihood projects. The Isha Outreach encompasses various initiatives targeting specific needs of communities, such as healthcare camps, disaster relief efforts, and social welfare programs. Some of the significant Isha outreach initiatives include:

- \* Health Camps
- \* Awareness Campaigns
- \* Mobile Clinics
- \* Health Education
- \* Community Health Initiatives
- \* Telemedicine Services

## About Chola-ISHA Partnership

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Chola signed an MOU with ISHA outreach to provide free/low-cost health services for the rural communities and tribal communities in a few districts of Tamil Nadu. A grant of Rs 1.5 crores was given to the Isha Outreach for this initiative which catered to the rural communities in Thondamuthur Block in Coimbatore and Panamarathupatti block in Salem.



## 2. Objective & Scope of the Project

Social Audit Network, India was approached by Chola to conduct a thorough and comprehensive social impact assessment of the health initiatives implemented by ISHA Outreach. The objectives of the assessment was to evaluate the following

- The impact of Mobile Health Clinics on delivering doorstep and free primary healthcare services
- The role of Rural Health Clinics in providing affordable healthcare or low-cost healthcare.
- The effectiveness of the diagnostic labs.
- The uptake and impact of awareness programs on improving the knowledge on healthcare.
- The effectiveness of the health camps in timely screening and identification.
- The impact of the Mooligai Mutram , Herbal Garden initiatives.

**The scope of the assessment was from April 2022- March 2023.**

## 3. Methodology

The social impact assessment was jointly done by social auditors, Mrs Latha Suresh and Ms. Neeta N K, from SAN India. The team conducted physical visits to the program sites within Thondamathur Block in Coimbatore. Three villages (Sangengiundapalayam, Chennannur and Viraiyalur Colony) were visited and one to one and group interactions were held with the beneficiaries present there.

The team also visited the IRHC (ISHA Rural Health Clinic) in Coimbatore district and interacted with staff of the IRHC for the Tribal Beneficiaries. The team also visited a multispecialty camp held in village and interacted with the villagers who attended the camp.



*Patients waiting to meet the doctor*

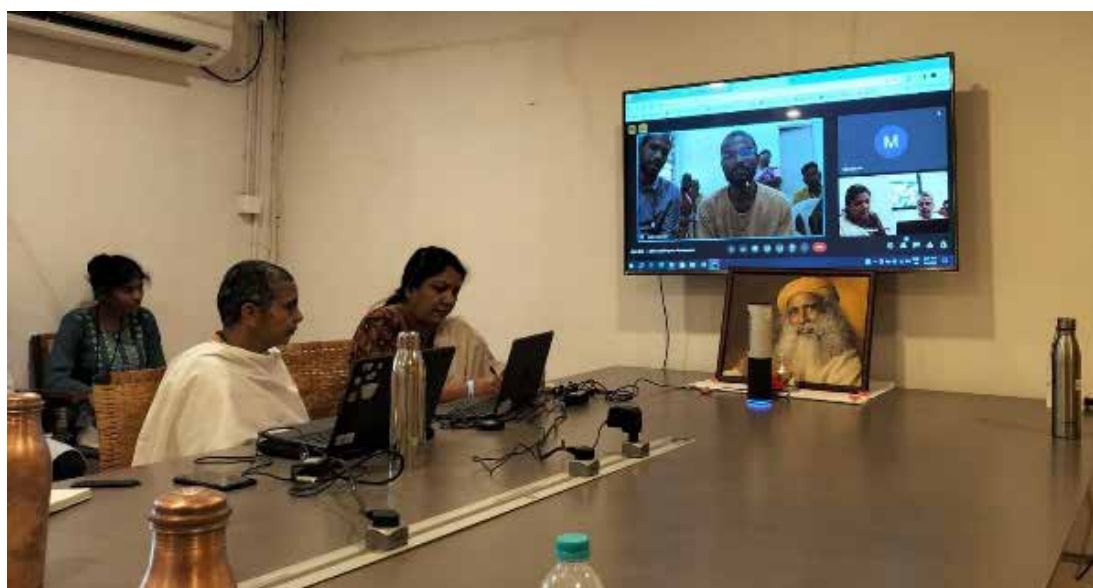


*Patients waiting to participate in the FGD*

## 4. Stakeholders consulted

The key stakeholders who were consulted for this assessment are as follows:

Type of Interaction	Stakeholder	No of beneficiaries met
One to One	Project Head	1
Group Discussion	Program Manager	1
Group Discussion	Program Staff	3
Group Discussion	Mobile Van Staff	8
Group Discussion	Rural Clinic team at Thondamuthur block	8
Online Discussion	Rural Clinic at Thondamuthur block	10
Group Discussion	Patients waiting in the clinic	12
Group Discussion	Mooligai Mutram Program Attendees	4
One to One	Village camp beneficiaries	89
Group Discussion	Tribal Village Beneficiaries	31
One to One	Government hospital doctor	1
Group Discussion	Panchayat staff	3
One to One	Tribal Health Clinic Staff	2
One to One	Multispecialty camp doctors	8
Group Discussion	Multispecialty camp beneficiaries	32
<b>Total Participants</b>		<b>203</b>

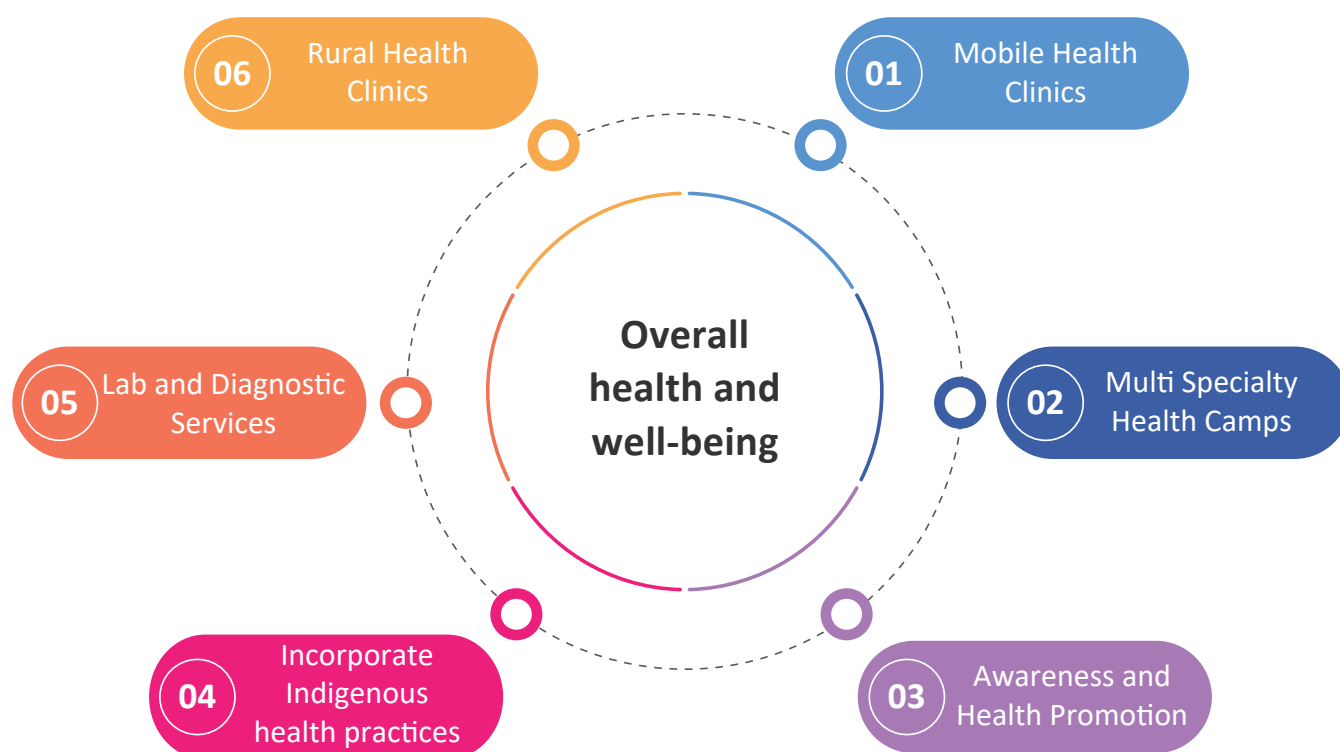


*Online interaction with the patients and Doctors at Salem Tribal Health Clinic*



## 5. Report on Performance

The program adopted a 6-pronged approach to improving the overall health and well-being of the community it serves. The initiatives aimed to provide comprehensive and accessible services to underserved communities, particularly in rural and tribal areas. The overarching goal was to promote health equity and improve the overall quality of life for those that the organisation served.



### Need for a multi-pronged approach. The views of the team (ISHA Outreach and ARR)

**Venkata Rasa- Director:** “The communities that we serve are extremely underprivileged and face a multitude of problems. By adopting a multi-pronged approach, we want to address several aspects of health and well-being, catering to the needs of the poor, downtrodden and tribal populations. Only a holistic approach will help us to provide services that promote their overall health and wellness.”

**Mr Pandiyan, Program Coordinator:** “Our experience on the field recognizes that health disparities exist in tribal communities to various social, economic, and environmental factors. Therefore, a mixed approach needs to be done so as to address underlying determinants of health while also addressing immediate healthcare needs. Merely curative approach won’t work.

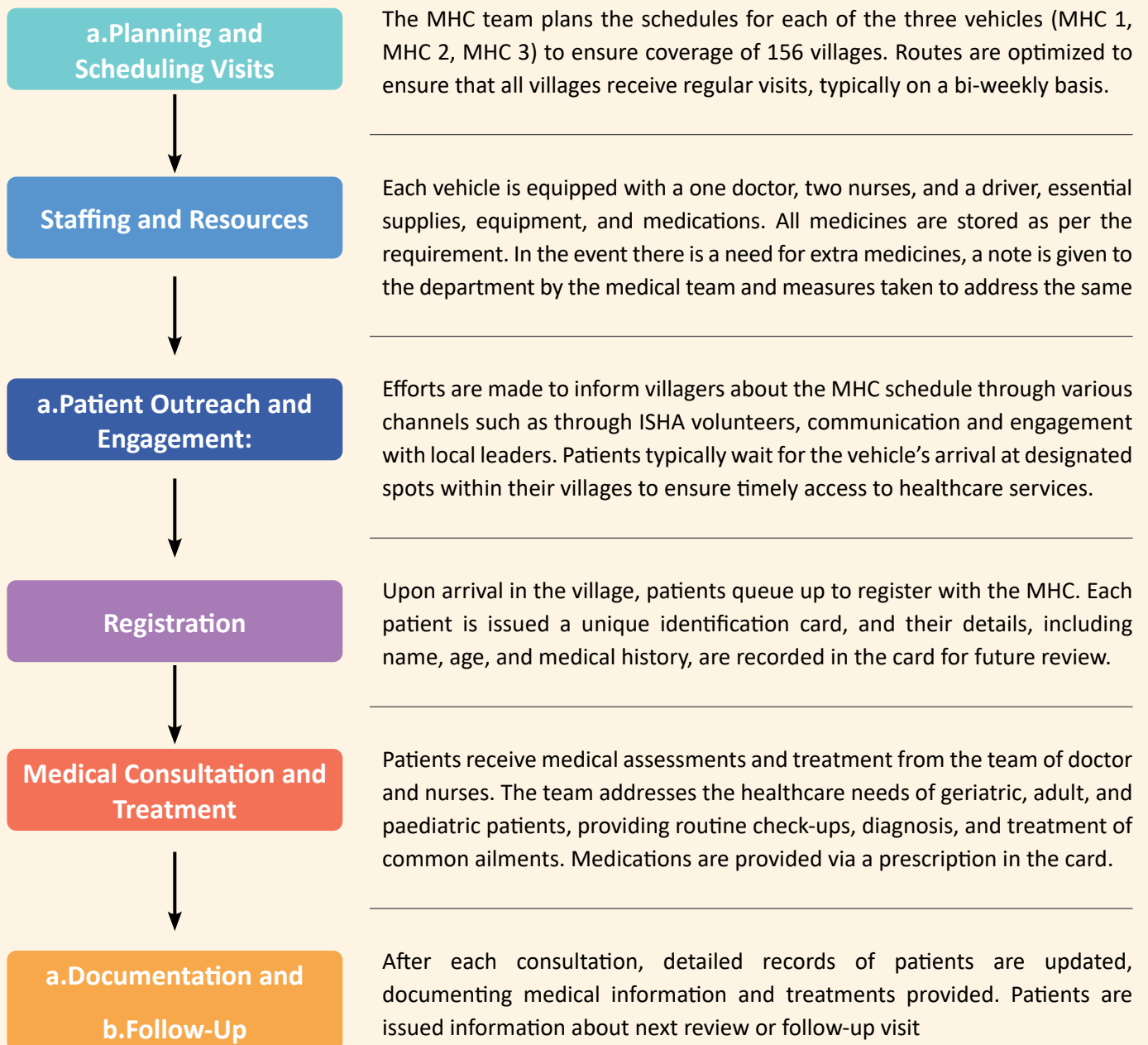
**Ma Induba, Program Head:** “ We not only provide medical services but also focus on preventive care, health education, and community empowerment. This ensures sustainable improvements in health outcomes by addressing root causes and promoting self-reliance within the community. Our goal is not just to treat illnesses but to foster a culture of well-being and resilience.”



## Mobile Health Clinics (MHC)

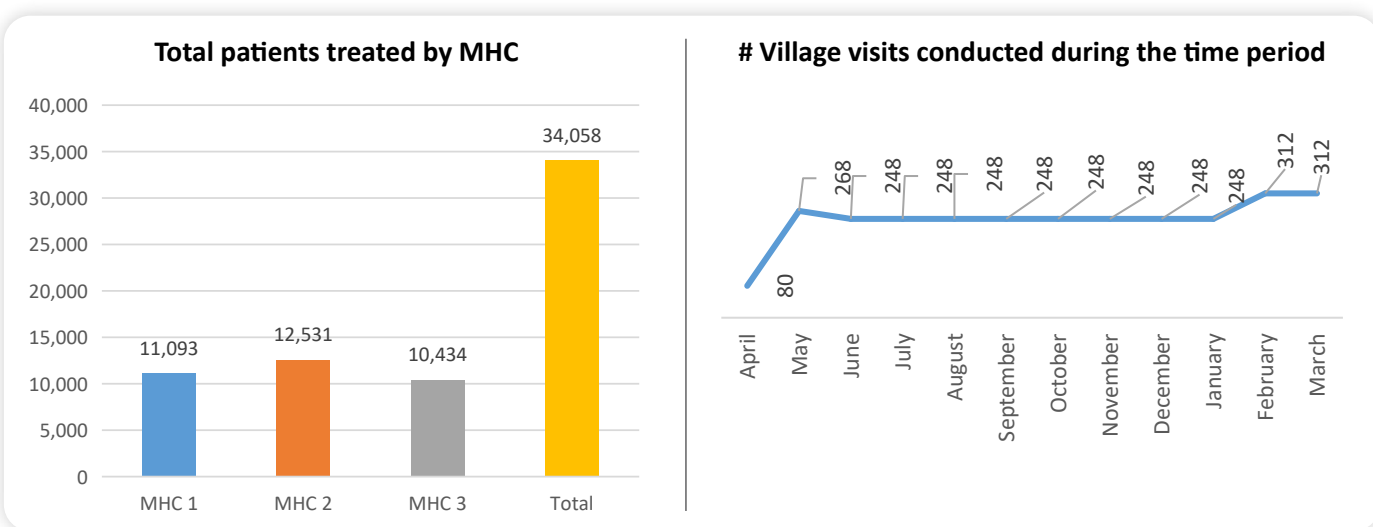
The primary focus was on providing healthcare services free of charge at the doorstep through the MHC. This included delivering primary healthcare services, distributing essential patients with Non-Communicable Diseases (NCDs), and organizing periodic health awareness camps alongside specialty camps. By reaching out directly to these communities, they aimed to address immediate healthcare needs and promote preventive care practices. Three vehicles were provided.

### Process Flow:



## Overall Reach and Geographic Impact:

The MHCs successfully reached out to 34,058 patients through their doorstep health services program, via three MHCs /vehicles. The team covered a total of 156 villages by the end of the program. Each village received at least one visit, if not more, as part of the program's comprehensive outreach efforts. In April, only two of the MHCs were utilized for the program, while the third vehicle was fully dedicated to Covid relief efforts. From May to January, it remained primarily engaged in Covid relief work. However, in February and March, its involvement in village visits increased as Covid Operations were stalled, the vehicle underwent repairs and returned to its regular operational capacity.



**Distribution of Medicines:** Medications were provided to all patients at no charge. The total cost of the support provided through the distribution of medicines to the community amounted to Rs 12,58,567. The allocation of this cost by month and MHC is detailed below. The expenditure on medicines distributed seen in the table below is according to the type of illnesses observed during each specific month. For instance, the types of cases presented during May, June (peak summer months) would vary from those in October to January (monsoons).

MONTH	MHC 1	MHC 2	MHC 3	Total Amount spent
April	14,760	73,516	0	88,276
May	58,442	43,208	47,088	1,48,738
June	58,442	43,208	47,088	1,48,738
July	18,550	23,420	21,231	63,201
August	22,245	29,417	37,440	89,102
September	23,511	29,202	24,680	77,393
October	19,615	39,254	50,441	1,09,310
November	23,253	39,440	50,016	1,12,709
December	23,574	33,720	43,714	1,01,008



MONTH	MHC 1	MHC 2	MHC 3	Total Amount spent
January	23,451	33,107	50,820	1,07,378
February	23,040	30,807	33,705	87,552
March	28,036	57,106	40,020	1,25,162
<b>Total</b>	<b>3,36,919</b>	<b>4,75,405</b>	<b>4,46,243</b>	<b>12,58,567</b>

## Beneficiary Speak..

*Our panchayat comprises 13 hamlets, ISHA's vehicle regularly visits the panchayat and supports the health needs of our people. This initiative is particularly beneficial the elderly, and young children. It is also well-organized. Since we do not have a hospital nearby, and the ones available at a distance lack adequate infrastructure, the ISHA vehicle becomes our primary source of healthcare.*

*Private hospitals are either too expensive or offer limited services for free. Many of us, hailing from humble backgrounds, can't afford the travel expenses and additional costs associated with seeking medical care elsewhere. The MHC is therefore incredibly valuable to us and should be continued.*

*Whether it's the dead of night, a holiday, or the weekend, ISHA's dedicated volunteers and Swamis remain ready to respond. They offer unwavering support, regardless of the time of day, ensuring we receive the necessary care and assistance promptly.*

*In our remote village, where access to basic healthcare is a luxury, ISHA's mobile health clinic is a lifeline. It not only treats illnesses but educates us on preventive measures, empowering our community to lead healthier lives.*

*The ISHA healthcare initiative's presence in our village, ensures that no one is left behind in times of sickness or distress.*

*For marginalized communities like ours, where traditional beliefs often hinder modern healthcare practices, ISHA's approach breaks barriers. Their culturally sensitive treatment helps build trust and bridges the gap between conventional medicine and our indigenous values.*

## Story of Hope

Jayabakiam, aged 63, found herself struggling with severe vision impairment, which greatly hindered her ability to carry out daily tasks independently, leading to feelings of helplessness. However, her life took a significant turn when she met the doctor via the MHC where she was diagnosed with cataract. Subsequently, in April 2023, she underwent a successful surgical procedure to address the issue. In her own words, Jayabakiam experienced a 75% improvement in her vision, significantly enhancing her quality of life. Jayabakiam now eagerly anticipates receiving treatment for her other eye, demonstrating her unwavering trust in the medical team and support staff at ISHA. She expressed her gratitude to the entire team at ISHA for the support.



## Rural Health Clinic (RHC) and Lab Services

This initiative worked towards establishing accessible and affordable care through Rural Health Clinics (2 in Coimbatore and 1 in Salem). These clinics served as hubs for providing primary healthcare services, offering treatment, and facilitating specialty consultations. The clinics were aimed to reduce barriers to healthcare access and improve health outcomes in the targeted areas. The Rural Health Clinics were also equipped with diagnostic labs that provided a range of investigations. This was aimed at enabling early diagnosis.

### Process followed by the RHC:

The procedure at the RHC commences with patient registration, during which personal information is gathered. Subsequently, patients meet with the doctor for a check-up, undergoing a comprehensive examination and consultation. After diagnosis, a suitable treatment plan is formulated. Upon the doctor's evaluation, patients may undergo additional lab investigations. Trained staff collect and analyse samples, with results usually accessible within 24 hours. Treatment options encompass medication along with recommendations by doctors for lifestyle modifications.



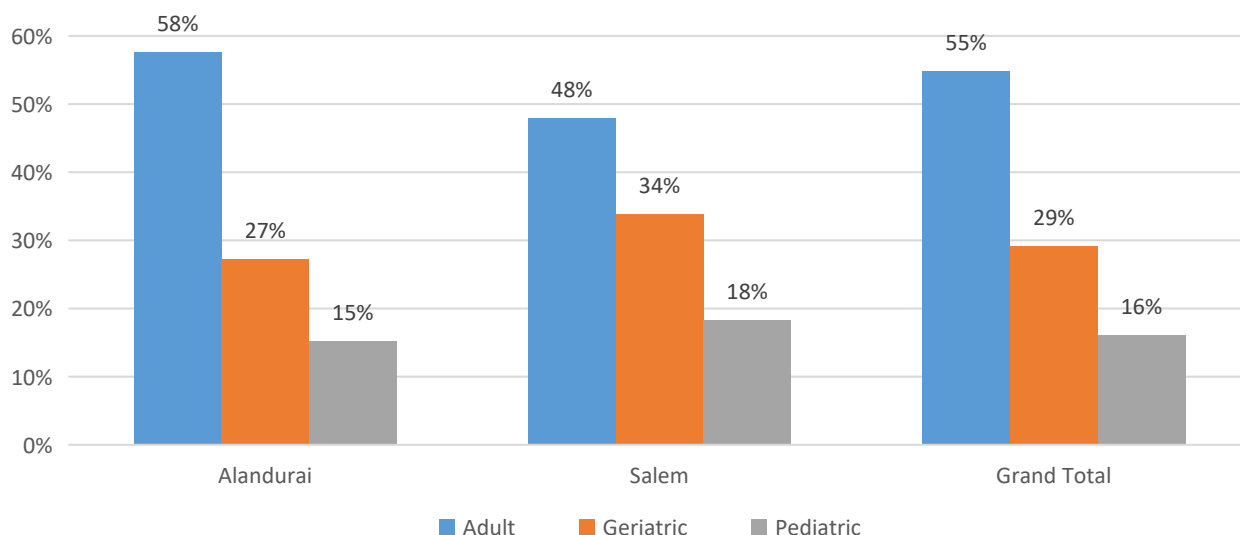
### Beneficiaries reached:

A total of 10,276 patients were reached through the two RHCs. Among them, 7,366 patients were reached in the Alandurai RHC, while 2,910 were reached via the Salem centres. Adults comprised 55% of those supported, while geriatric patients and children accounted for 29% and 16% of the total population served, respectively. Salem supported a greater number of elderly patients compared to the centers in Coimbatore.

	Alandurai	Salem	Grand Total
Adult	4,239	1,395	5,634
Geriatric	2,006	984	2,990
Pediatric	1,121	531	1,652
<b>Grand Total</b>	<b>7,366</b>	<b>2,910</b>	<b>10,276</b>



Age category of population served



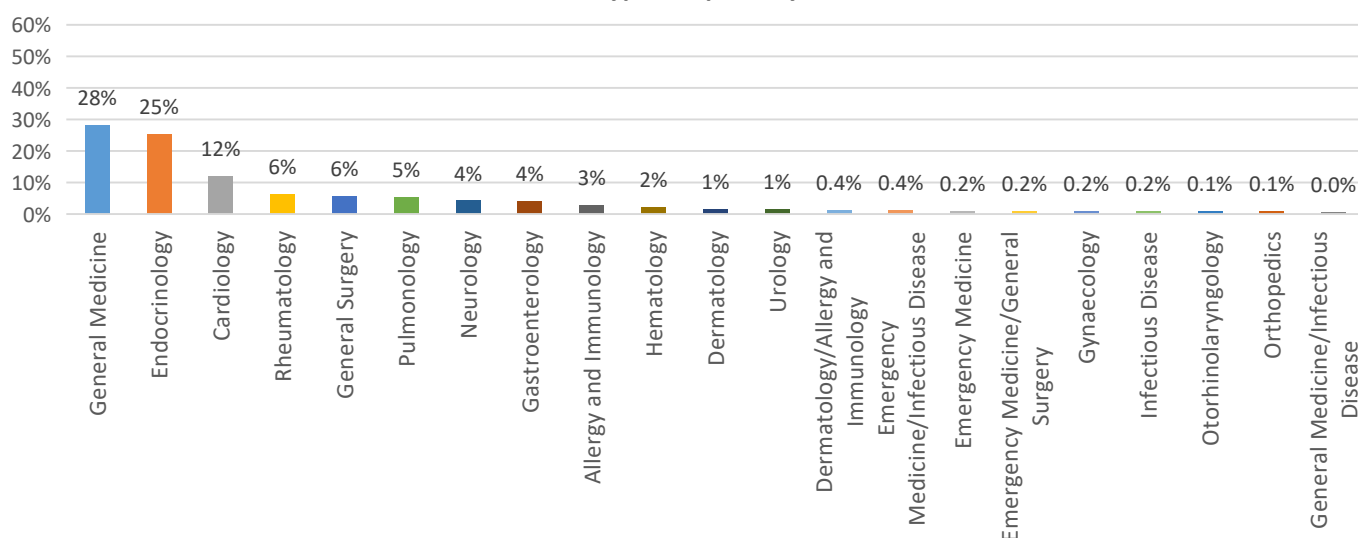
## Infrastructure and Status of equipment

The RHCs are equipped with essential facilities, including a registration room, observation room, two resting rooms, and a fully functional laboratory. The laboratory offers comprehensive investigations such as HbA1C, thyroid, blood sugar, and blood pressure testing, supported by an autoanalyzer. All equipment is consistently maintained to ensure quality, including microscopes and other necessary apparatus for medical examinations.

## Type of treatment provided:

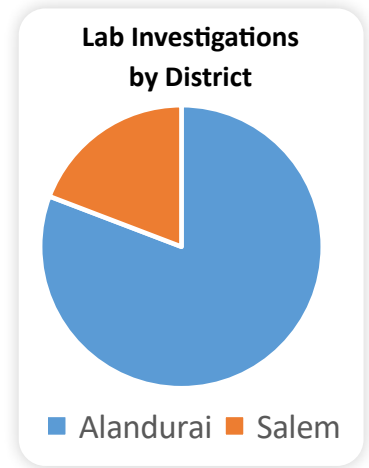
The chart highlights the key specialties that received support via the RHCs, indicating that general medicine, endocrinology (largely due to the prevalence of diabetes cases), and cardiology (attributed to high blood pressure) were the primary reasons for center visits. This suggests an opportunity to address non-communicable diseases such as hypertension, diabetes, and related lifestyle disorders more comprehensively within the community.

Type of Specialty



## Uptake of Lab services

Out of the 10,276 patients who visited the centers, 3,457 (2,793 from Coimbatore and 664 from Salem) underwent various forms of laboratory investigations. Among all those who utilized the lab services, only 19% were from Salem, suggesting a notably lower utilization of lab services at the Salem RHC. This calls for a thorough investigation into the underlying reasons.



## Beneficiary Speak..

*I used to dread the long trips to the Coimbatore GH medical appointments. Thankfully, this clinic opened nearby, saving me hours of travel time.*

*I am relieved to have discovered this clinic. The doctor here is knowledgeable, kind and takes time to listen and understand my concerns, making me feel truly cared for."*

*There are no affordable healthcare facilities in our area. This was a constant source of stress for me and my family. Now, things have changed.*

*This clinic offers affordable services without compromising on quality. It's truly a blessing for our community.*

*I am comfortable with the doctor and the treatment provided here. This is a good clinic.*

*Whenever I come here, I am confident that I will be treated well and my health issues will be sorted.*

*There are no other places where I can check my BP and Sugar. Here is it not at all expensive.*

## Doctor Speak..

*Every patient deserves access to quality healthcare, regardless of their financial situation. The geographic area in Salem where the RHCc is situated is very bad. That's why I'm proud to be part of a clinic that prioritizes affordability for rural populations. - Salem RHC Doctor*

*As a doctor, it's fulfilling to see the impact our clinic has on the community. By providing curative services and focusing on their diet and well-being, we're not just treating patients; we're improving lives. - Coimbatore RHC Doctor*



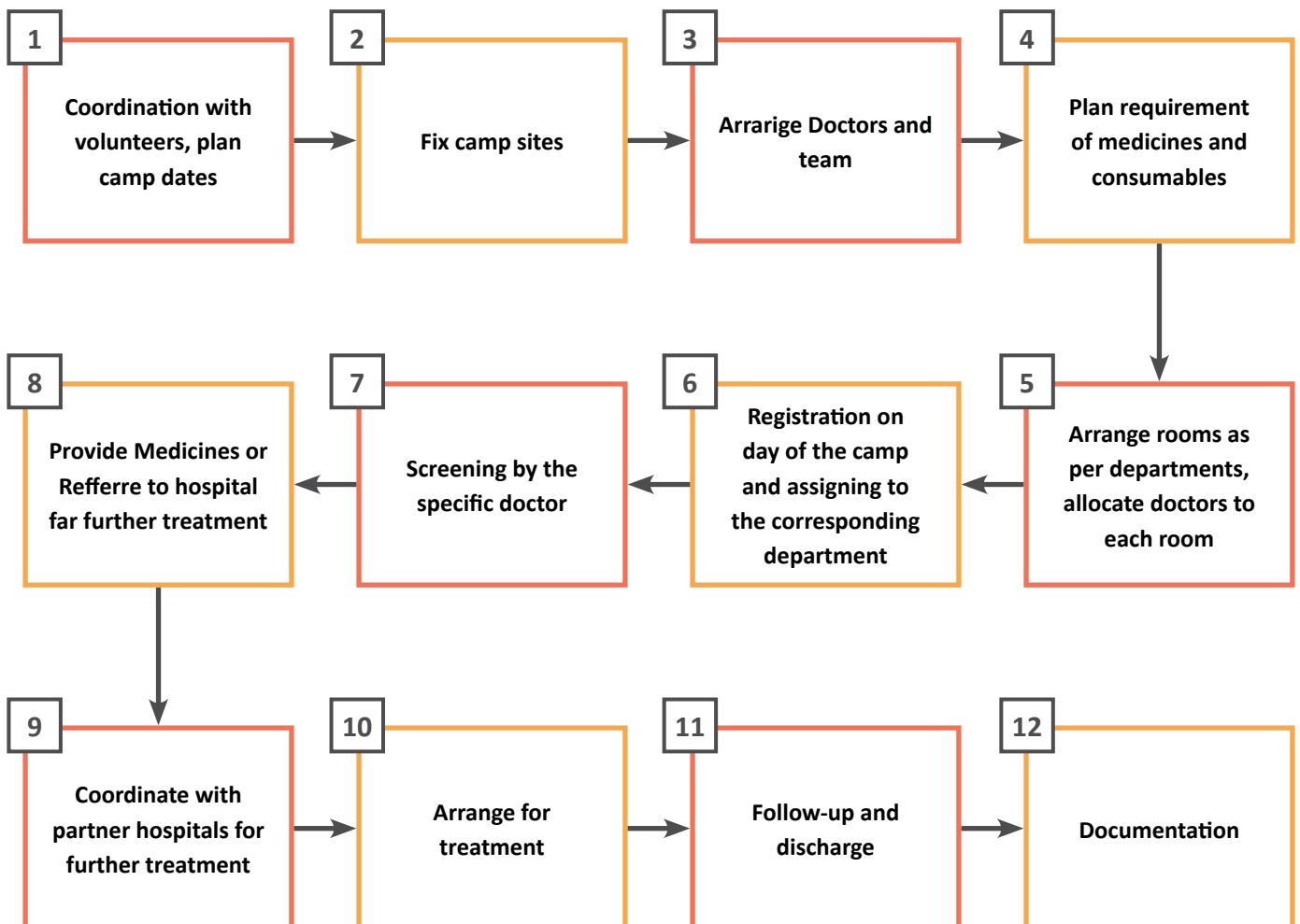


## Medical Camps

By conducting multispecialty camps, ISHA has facilitated the early screening and identification of various diseases, thereby enabling timely treatment for individuals in need. These camps serve as pivotal platforms for patients to access multispecialty healthcare services under one roof. The camps serve as awareness platforms, raising awareness about the importance of regular health check-ups and early intervention.

### Process followed for the camps:

The coordination of the camp involves engagement with the program team and volunteers, fixing camp dates, camp sites, arranging doctors and teams, and planning the requirements of medicines and consumables. Rooms are allocated according to specific departments, with doctors assigned to each. On the day of the camp, the team at the registration counter assigns individuals to corresponding departments for screening by specific doctors. Treatment is provided or referrals are made to hospitals for further care, with coordination maintained with partner hospitals. Follow-up and discharge procedures are organized, alongside thorough documentation to ensure effective patient care throughout the process.



## Team insights.

*At ISHA, we collaborate with entities such as Rotary and government schools, which offer support such as space and infrastructure, ensuring that communities are engaged and well-informed about our camps. We optimize our impact by offering comprehensive multispecialty services in addition to providing general investigations, enabling patients to access all necessary treatments conveniently. We are fortunate to have a dedicated team of volunteer doctors who generously donate their time. It's important to acknowledge the indispensable contribution of our team and volunteers, who have established a vital support network, enabling us to reach a significant number of patients.- Kavitha, Camp Lead*

## Reach and type of specialties provided:

In total, 27 camps were held, providing support to 4,654 beneficiaries. Among these, 3,693 patients received screenings for eye issues, 274 were assessed for general health concerns, 108 received attention for dental problems, 99 were evaluated for orthopaedic issues, and 64 received consultations for skin problems.

## Treatment of identified cases:

Out of the 3693 patients screened for vision issues, 545 were found to have cataracts, while 315 received corrective glasses. This indicates that approximately 15% of patients had untreated cataracts, and 8% had other vision problems. These patients were subsequently connected to Arvind Eye Center where they were treated for free. An ISHA volunteer would accompany the group of patients identified in a vehicle to Arvind Eye Centre, facilitate their surgery and drop them back at their homes. Therefore, these camps played a crucial role in detecting and treating preventable causes of blindness and vision impairment.

## Creating awareness and promoting indigenous health

ISHA also worked to enhance health awareness among rural and tribal communities. This involved initiatives to improve awareness regarding hygiene, diseases, and healthy lifestyle practices. Through health awareness camps and drives, they aimed to empower individuals with knowledge and resources to make informed decisions about their health and well-being. 120 people were reached through these initiatives.

Awareness sessions are held during MHC team visits to villages, where patients attend camps and consultations. Doctors impart knowledge on sustainable indigenous foods and promote healthy dietary habits. Additionally, training sessions on the utilization of local herbs are facilitated through the Mooligai Muttam platform.

In addition to awareness initiatives, a core aspect of the project involves integrating traditional herbal remedies into community health practices. By leveraging a combination of allopathic and alternative medicine approaches (like distribution of Kashayam, providing training on preparation of medicines using local herbs, promotion of herbal garden etc, ISHA worked to address the diverse healthcare needs of these communities via both preventive and curative services. Recognizing the value of herbal plants as



both food and home remedies, the initiative seeks to make natural and cost-effective solutions accessible in rural households. This includes distributing herbal plant saplings and promoting the establishment of herbal gardens among interested households.

With the onset of the Covid-19 pandemic increasing reliance on medications for common ailments like cold and cough, the emphasis on herbal remedies aligns with the community's evolving health needs. By engaging volunteers to educate families about the significance of herbal plants, the initiative strives to foster a culture of self-sufficiency and holistic health management within these communities.

### Beneficiary Speak..

*I never knew the potential of our local herbs until ISHA introduced us to their benefits. Now, I feel more confident in treating common illnesses at home using natural remedies.*

*The awareness sessions by ISHA not only educated us about hygiene but also empowered us to embrace our traditional practices for better health outcomes. I'm grateful for the herbal garden they helped us set up, it's like having a pharmacy at home!*

*Thanks to ISHA, we know that integrating indigenous foods and herbal remedies into our lifestyle has truly transformed our well-being.*

## 6. Evaluation of the program using the REESS Framework

The REESS Framework provides a structured approach to evaluating the effectiveness and alignment of developmental programs. It comprises five key components: Relevance, Effectiveness, Efficiency, Sustainability, and Social Impact.

### a. Relevance

There is a dearth of access to affordable quality healthcare service providers, particularly in rural communities and among the tribal population. A general of awareness on health on the part of the people in the project locations, warrants the need for a multi-pronged approach to be implemented.

### Beneficiary speak

*I need daily medication for my diabetes, including insulin. It was tough for me to get my medicine because my family is busy, and I couldn't travel. But now, thanks to the service, I get my medicine on time, and my diabetes is under control."*

*I've been getting my medication from ISHA without having to travel, which is a big help because I have high blood pressure."*



**Choice of beneficiaries:** The program reaches out to underprivileged and tribal areas. It also provides support to the geriatric population who are typically a neglected group, especially in rural areas. The underlying objective of any socially relevant intervention is to help the unreached and truly needy. This objective has been successfully achieved via this collaboration between Chola and ISHA.

*Such an initiative, especially in a tribal area where awareness of health is poor, health indicators are abysmal and health behaviours are compromised, a program like this is essential. Tribal women do not prioritize their health and so, doorstep access to healthcare is of paramount importance.*

**– Doctor**

*The establishment of a rural health clinic in tribal villages by ISHA is our investment in the future well-being of these communities. It's about empowering them to lead healthier lives*

**- Venkat Rasa, Head of ISHA ARR.**

*Healthcare should be a right, not a privilege. Establishing a rural health clinic in this area is a crucial step towards realizing this. These people are unaware of good health practices and we want to make sure we help them achieve better health. **Doctor at Tribal RHC:***

*It was hard for me to travel 11 km to Madhampatti to see a doctor for my BP and sugar. I also have bad knees and poor eyesight. I used to miss appointments often. But now, things are much better because the doctors see me in my village itself. **75 years old patient***

**Alignment with Government of India objectives:** The mobile health and rural health clinics provide primary health care services, which fall under the GOI's ambit of delivering universal health coverage. The tribal program for addressing maternal anaemia aligns with the GOI's RMNCH+A framework which aims to address the major causes of mortality and morbidity among women. The program also entails components of setting up herbal gardens which are in line with the requirements of the AYUSH program.

**Alignment with Chola's and ISHA's objectives:** Chola's CSR initiatives focus on key areas like health, education, water & sanitation, arts & culture, sports, rural development, environmental sustainability, research & development, and road safety. ISHA also focuses on community health and upliftment as their core areas of work. Chola and ISHA have successfully worked towards their shared vision of good health for rural communities through this program.

**Alignment with UN Sustainable Development Goals (SDGs):** By improving access to quality healthcare services, the program contributes directly to SDG 3 (Good Health and Well-being) and indirectly to 10 (Reduced Inequalities), 4 (Quality Education), 5 (Gender Equality), and 17 (Partnerships for the Goals).

**Non-availability of similar service providers:** There are very few Govt Primary Health Centres that operate close to the 117 villages where the mobile health clinics operate. Further, the rural health clinics in Salem and Coimbatore cater primarily in difficult terrains where other healthcare providers are limited in number. While a few private hospitals operate in big towns in Coimbatore, the service providers do not provide a similar range of services at a low-cost or for free. Hence, it may be surmised that ISHA stands out as a standalone organization that operates in these rural areas.



*In rural areas like ours, access to healthcare has always been a challenge. Villagers often have to travel long distances just to receive basic medical attention. But with the introduction of the vehicle by ISHA, things are different. People can receive healthcare within the village. – Panchayat Leader*

**Openness of the beneficiaries to the program:** Interactions with the beneficiaries revealed that all of them were extremely happy to have the services delivered close to their homes via the MHCs and the medical camps. Further, 100% of the respondents revealed that the rural clinics were a welcome requirement in their geographic terrain. Those who were trained on the Mooligai Mutram and Herbal Garden expressed interest in attending refresher/advanced courses to increase their knowledge on preventive health via indigenous systems.

### Beneficiary Speak..

*I cannot express my gratitude enough for the free health camp. Not only did I receive medical treatment, but I also learned about preventive measures to keep my family healthy. These camps are a blessing for marginalized communities like ours.*

*The health camp provided me with the necessary medications and counseling to manage my chronic condition. Without this support, I would have suffered immensely. It's remarkable how such initiatives positively impact the lives of many who are underserved in healthcare.*

*After joining the Mooligai Mutram program, I was surprised at how easy and effective natural remedies can be. My grandmother and mother always believed in the power of natural foods but I was never very confused. Learning about Murangai leaves for immune boosting has been great for me, especially during flu season. The program showed me how to make different health mixtures, enabling me to take care of my family's health by myself. I'm very happy to use what nature gives for our health. - Mooligai Mutram Beneficiary*

## b. Effectiveness

**Patient Reach:** The program has effectively reached over 48,924 patients directly via the MHCSs, the camps and the labs. In addition, over 3,474 people use the services of the laboratory. All those identified with health issues have been provided with the necessary treatment.



## Beneficiary Speak..

*I found out I have both high blood pressure and diabetes when the medical team visited my village. Now, I get regular check-ups and support from the doctors.*

*The guidance on managing my diabetes at the rural health clinic in Salem has made a big difference. My blood sugar levels are more stable now, and it's easier to manage day-to-day.*

*My wife was diagnosed with stroke at the centre. She was immediately rushed for treatment. Rehabilitation after stroke was tough but effective. The staff's support helped her make real progress. She is walking better and feeling more independent.*

*The treatment for my skin condition at the rural health clinic was very good. The dermatologist gave me a skin cream while the doctor in the clinic recommended me to stop eating non-vegetarian food and maintain a clean gut. This has improved my condition.*

*I did not know I had high BP but would feel dizzy often. My neighbour recommended that I visit this clinic as the GH in Coimbatore is very far away. When I was diagnosed, the advice and treatment I received at the clinic have been helpful. I've seen a noticeable improvement in my blood pressure readings and overall well-being.*

**Focus on preventive healthcare:** 102 people attended the workshops on herbal products conducted for housewives in the area. The making of these concoctions using locally available herbs was demonstrated live to encourage the women to prepare the products at their homes at low cost. The program emphasised identification of 3 to 5 locally available herbs and education on home remedies based on the location and season are the essential elements of the sessions. The doctors in the IRHCs and MHCs advocate the importance of nutritive foods in fighting lifestyle diseases.

*The interest shown by participants in the Mooligai Mutram and Herbal Garden workshops is remarkable. It reflects a growing appreciation for holistic approaches to healthcare.*

**- Ma Induba, ISHA ARR**

**Robust screening efforts:** Screening is an important component of preventive healthcare – it helps identify diseases early so as to enable providers to deliver timely treatment. In Coimbatore, ISHA conducts regular camps (including multi-specialty) where they screen the population for general diseases, dental issues, eye issues. Other multispecialty camps are also conducted once every two months. Here, specialist doctors from reputed hospitals visit the camp sites and screen the patients. The specialties offer range from Ortho, Skin, Neuro, ENT, Cardiology, Gynecology Pediatrics, Lab test, Ultrasound, Mammogram and Diabetes Consultation.



### Doctor speak..

*Being able to provide healthcare in underserved communities through initiatives like Isha's camps is incredibly fulfilling. It's not just about treating patients; it's about making a tangible difference in people's lives.*

*As a doctor, my passion lies in serving those who lack access to basic healthcare. Partnering with organizations like Isha allows me to reach communities that are often overlooked, ensuring that everyone has the opportunity to receive quality medical care regardless of their circumstances.*

**Equipped labs, upkeep of equipment and consumables:** The lab was equipped with all the tools to operate as a comprehensive diagnostic and scanning unit. The equipment was adequately maintained, with detailed records of all service and repair activities. Within the Mobile Health Clinics, there are dedicated sections for drugs and consumables, ensuring efficient organization. The equipment within the mobile vans is sufficient to meet the needs of the community. The Rural Health Clinics also boast excellent facilities.

**Community satisfaction:** The beneficiaries interviewed all expressed 100% satisfaction with the services provided. The tribal areas in particular were effusive about the ISHA volunteers and the maternal anemia. All of them commented about the quick response rate of the team. The elderly beneficiaries who were interviewed opined that doorstep based delivery of healthcare was a boon for them as they did not have to depend on anybody else to avail treatment.

### Beneficiary speak..

*Earlier, we had to travel over 11 kms for a health check-up. The van by ISHA brings the doctors and nurses. From regular check-ups to distributing, the van caters to all our medical needs. And everything is given for free. We are grateful to the ISHA team.*

*Whether it's a child with a fever or an elder needing regular medication, the ISHA team ensures no one is left behind when it comes to healthcare.*

## c. Efficiency

**Overall reach:** A total of 49,044 direct beneficiaries were served through the Mobile Health Clinics (MHC), Rural Health Centers (RHC), Indigenous health initiatives, and multi-specialty camps. Of this number, 3,474 patients were also catered to through the laboratory services.

**Providing low-cost, affordable healthcare solutions:** The medical camps and medicines provided completely for free. The services provided via the rural health clinics have also been found to be low-cost. The cost of a Diabetes check-up at the RHC is Rs 25, while an HBA1C test is Rs 250, and a thyroid test is Rs 220. These prices are considerably lower than those charged by other private hospitals. While the medicines are provided for free, the average cost for ISHA to provide medicines to each patient is Rs 37.





<b>Amt spent on medicines in the camps</b>	12,58,567
<b>Total no of patients</b>	34,058
<b>Cost per patient to ISHA</b>	36.95

**Adherence to MOU objectives:** Although the Mobile Health Clinics (MHC), Remote Health Centers (RHC), Laboratories, and Camps have proven effective, there remains ambiguity regarding the extent to which the emphasis on indigenous systems and the establishment of herbal gardens has been realized.

**Operational Efficiency:** The operational efficiency of the team is commendable. There is a structured approach to enable the patient flow and camps efficiently without encountering any backlog issues. The teams work from 9:30 AM to 5:00 PM, six days a week. Lab investigations have a typical turnaround time of less than 24 hours. This consistent schedule not only maximizes the program's outreach but also fosters trust and reliability within the communities we serve.

*Our MHC team visits approximately 50 villages every two weeks, dedicating 1 to 1.5 hours per village. Thanks to our regular presence, we effectively manage patient flow without any backlog. Operating from 9:30 AM to 5:00 PM, six days a week, our schedule ensures thorough coverage and accessibility for all patients. - Ma Induba*

**Optimising team strengths:** The team comprises a diverse range of professionals, encompassing doctors, nurses, management experts, social workers, field personnel, drivers, and volunteers, each with distinct roles meticulously defined. This clarity facilitates the timely execution of plans. By strategically segregating duties and harnessing the unique skills of volunteers, the team maximizes its effectiveness.

**Post-treatment follow-up:** All the patients who attend the weekly MHC are followed-up at regular, timely intervals. Those identified with eye issues like cataract etc are followed up till they receive surgery and followed-up from thereon. While the RHC staff decide the date for review and document the same in the patient cards of the patients, it is unclear how many staff have been followed-up.

**Pivot during Covid:** In the face of the relentless onslaught of the challenged posed by the virus and its profound effects on people, the ISHA team valiantly waged a battle against the pandemic. They undertook a commendable initiative to offer essential support such as nutrition aid, medications, and food provisions to those in need within the villages. Despite the daunting circumstances, their unwavering dedication to aiding those in need underscores the significance of their efforts in alleviating the hardships caused by the pandemic. It also speaks volumes about how even though operations were stalled in other areas, the team managed to pivot their activities to address the need of the hour.



### Beneficiary speak..

*During Covid, Isha was incredibly supportive, providing us with food packets, Kashayam, and urgent commodities. The Kashayam proved especially helpful in combating fever. Their efforts ensured that none of us went hungry or suffered greatly due to Covid. I truly appreciate the dedication of the ISHA team for supporting us during Covid, even without prioritizing their own health.*

## d. Sustainability

**Leveraging Volunteer Support:** Volunteers play a pivotal role in the success and sustainability of the program. The key team people at ISHA are all full-time volunteers. By using this dedicated force of ISHA volunteers, the program can extend its reach with lower operational costs.

*Volunteering at camps organized by Isha is more than just a duty; it's a calling. Seeing the gratitude and relief on patients' faces when they receive care reminds me why I chose this profession. Every person deserves to be healthy, and I'm honored to play a part in making that a reality. – Isha Volunteer*

**Value System of ISHA Volunteers:** The motivation of ISHA volunteers is rooted in ISHA's value system that emphasizes selfless service, compassion, and a holistic approach to well-being. This is critical for sustaining the initiative over the long term, as the volunteers remain motivated and engaged, a crucial parameter for the program's success and sustainability.

### Beneficiary Speak..

*The ISHA team of doctors, nurses, and volunteers not only treat our ailments but also are very compassionate and understanding, making us feel valued.*

*The ISHA doctors are empathetic; they listen attentively to our concerns, offer reassurance, and advice us what to eat and what not to eat to ensure our well-being.*

*The ISHA team's commitment to their work is evident in their consistent availability and prompt response to emergencies, ensuring that no health concern goes unattended.*

*Their demeanor is consistently respectful and courteous, creating a positive atmosphere that puts patients at ease and fosters a collaborative approach to healthcare.*

*The courtesy exhibited by the ISHA medical camp team is truly remarkable, as they greet each patient with warmth and respect, creating an environment of dignity.*

*When visiting government hospitals, we often don't receive the same level of concern and dignity. However, the ISHA doctors and nurses treat us with utmost respect, ensuring we feel valued and never inadequate during our interactions with them.*



**Continuity of Services over Time:** Through regular health camps, continuous availability of mobile and rural health clinics, and follow-up with patients, the delivery of services is maintained. By ensuring that healthcare services are not just a one-off intervention, the program builds trust within communities, a vital requirement for its long-term impact.

**Capacity Building of Community for Self-Sufficiency in Healthcare:** While curative care is important, there is a need to empower communities to take charge of their health. The program was mandated to focus on health education, awareness campaigns, and training community members in basic healthcare practices but not much work was done or documented in this regard barring the herbal garden and Mooligai Mutram Project.

### Voices from Isha Medical team

*We stream health awareness videos through the Mobile Health Clinic's TV. We hope to educate villagers about hygiene, nutrition, and disease prevention. It's empowering our community to take charge of their health and well-being.*

*I strongly focus on prevention alongside treatment. It's a common trend in our region for folks to neglect their dietary habits, often sticking to a routine of rice consumption twice daily. However, as we encounter more cases of diabetes and pre-diabetes, we, along with our dedicated nurses, emphasize the importance of incorporating more proteins and green leafy vegetables into their diets. We also encourage the adoption of a diet rich in millet. Gradually, we're witnessing a positive shift in dietary choices within our community.*

**Integration of Traditional and Herbal Medicine:** By integrating traditional and herbal medicines with allopathic treatments, ISHA leverages the rich heritage of indigenous healthcare knowledge.

**Partnership with Other Service Providers:** ISHA partners with Govt hospitals in Coimbatore (Medical College), private hospitals to amplify the program's impact and support where required. Typically, treatments not available within the RHC settings are supported via these partnerships. Further, experts and resources from multispecialty hospitals are invited to provide support during the MHC camps. Some of the hospitals that ISHA has partnered with include Aravind Eye Hospital, Coimbatore Medical College, Ganga Hospital, Ponnaiyah Gynaecology, Rao Hospital, PSG Hospital and Yennam Hospital. Further, organisations like Rotary are partnered with.

*I work on behalf of Rotary and we partner with ISHA for the medical camp. The ISHA team's dedication knows no bounds; whether it's a general camp or Multi speciality camp, the ISHA team is always prepared, ready to lend a helping hand with unwavering commitment. None of other organizations that Rotary partners with is this committed and dedicated.*

**– Rotary member**



## e. Social Impact

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The ISHA Healthcare project adheres to the 5 A's of Healthcare framework often used to assess and improve healthcare delivery. They include

**Access:** The rural communities around Coimbatore and Salem have timely access to healthcare services without encountering barriers such as geographical, financial, cultural, or linguistic obstacles. Accessible healthcare is essential for promoting health equity and ensuring that all individuals receive the care they need when they need it.

**Availability:** Availability involves having sufficient healthcare resources, facilities, and personnel to meet the needs of the rural communities. Isha healthcare program has adequate healthcare infrastructure, medical supplies, trained healthcare professionals, and essential services in the rural areas where they serve.

**Affordability:** Healthcare should be affordable for all individuals, regardless of their socioeconomic status. Affordability encompasses not only the cost of medical services but also related expenses such as medications, medical supplies, and insurance coverage. Isha has provided affordable and free healthcare which ensures that financial barriers do not prevent people from seeking necessary medical care in the rural communities around Coimbatore and Salem.

**Acceptability:** Acceptability refers to providing healthcare services that are respectful, culturally sensitive, and responsive to the needs and preferences of individuals and communities. The Isha volunteers have considered cultural beliefs, language preferences, religious practices, and other factors that influence how healthcare is delivered and received.

**Accommodation:** Accommodation of healthcare services refers to ensuring that medical facilities, resources, and personnel are available and accessible to meet the needs of patients. The Isha medical team both at the MHC and the RHC accommodate the demands of the patients in a timely and effective manner

Apart from these the following impacts are also observed-

**Reducing Inequalities:** By providing healthcare to marginalized, rural, the elderly and tribal populations, the project reduces inequalities in healthcare access. These communities often face barriers that limit their access to quality healthcare. The Mobile Health Clinics (MHCs) and Rural Health Clinics (RHCs) bridge this gap by bringing healthcare services to the doorstep, thereby ensuring access. The ISHA initiative is of immense value to the diverse community demographics. Their approach ensures that every individual, regardless of background or village location, receives the necessary attention. By visiting all colonies and villages, ISHA ensures that no one is overlooked, showcasing a commitment to inclusivity and thoroughness in addressing the varied needs of community members effectively.



*We have a diverse group of people from different castes in our panchayat. The reality is that if the vehicle goes to one village with people from a particular caste, those from the other caste will not avail the services. Hence, the ISHA team visits all the villages separately. This way no is missed.*

**– Panchayat Leader**

**Improved Health and Well-being:** The program aligns with SDG 3, targeting improved health and well-being for all ages. Through primary healthcare, distribution of medicines, and health camps, early detection and timely treatment is ensured. This also improves the overall well-being of the community. Setting up herbal gardens and the promotion of holistic well-being practices further contribute to this goal.

**Gender Equality:** Attention to gender-specific health issues, such as maternal anemia, ensure that women, who often face higher barriers to healthcare access, receive the care they need. By addressing these disparities, the program contributes to improved maternal health and promotes gender equality within these communities.

*I am proud to say that our village is now free from anaemia. Regular hemoglobin tests, along with a combination of Sattu Maavu and a concoction made from Triphala, Annpedhai, Moringa, and Maadhulai, are provided to those in need. This has proven especially beneficial for pregnant women and post-delivery care. ISHA volunteers follow up with patients to ensure they adhere to medical advice. Truly commendable efforts!*

**– Isha Volunteer**

**Increased Savings:** Access to free healthcare services, reduces the financial burden on families by reducing out of pocket expenses (OOP). These expenses are a leading cause of financial pressure and poverty. By reducing these costs, the program enables people to save more. This is particularly impactful for the rural and tribal populations served by the program. Interactions with the stakeholders revealed that they would have to travel an average of 5-8 kms to go to the nearest private hospital – thereby resulting in an average saving of Rs 290-320 (250-300 for consultation and Rs 45 for travel back and forth) to a hospital. This amount was saved by the patients due to ISHA's MHC.

*As an auto driver I am unable to afford treatment at private hospitals, receiving free treatment for my daughter from the ISHA team has been an immense relief. We are profoundly thankful for their invaluable support during this challenging time.*

**Promoting Indigenous Healthcare Systems:** Integrating integration of alternative medicines and the establishment of herbal gardens within the program's framework honor and promote indigenous healthcare systems.



## 7. SDG Alignment

The activities are in alignment with the following SDGs



The Mobile Rural Health Clinic initiative directly contributes to achieving Goal 3 by providing primary healthcare services to rural and tribal communities. Through screening camps and preventive healthcare awareness programs, the project promotes early detection and timely treatment of diseases, thereby improving overall health outcomes. By establishing rural health clinics and herbal gardens, access to healthcare services is assured and promotes holistic well-being among beneficiaries.



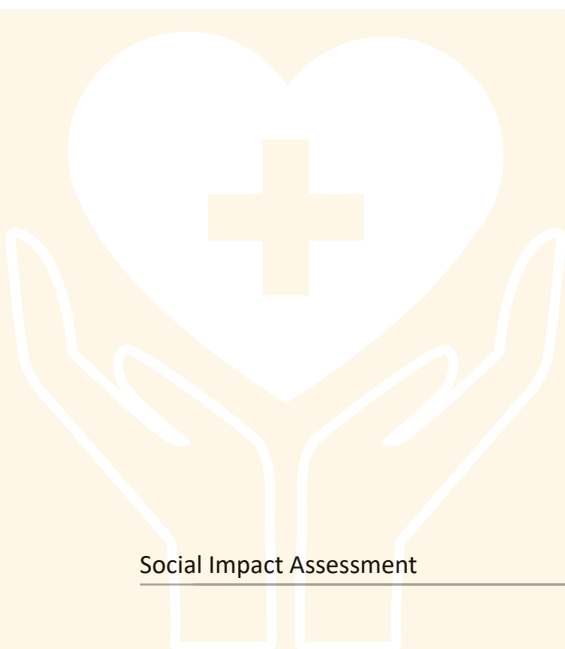
The program plays a crucial role in promoting gender equality by ensuring that healthcare services are accessible to all members of the community, irrespective of gender. Through targeted outreach and awareness campaigns, it addresses gender-specific health issues like maternal anemia and ensures that women receive equal access to healthcare services.



The Mobile Rural Health Clinic Program works towards reducing inequalities by providing healthcare services to marginalized, rural and tribal populations. By bringing healthcare directly to underserved communities at the doorstep, the program addresses geographical disparities in access to healthcare and ensures that no one is left behind.



The program recognizes the importance of partnerships in achieving sustainable development goals and actively collaborates with various stakeholders, including government hospitals, private hospitals, NGOs, and community organizations.



## 8. Recommendations:

There is a need for greater emphasis on promoting awareness about anemia and lifestyle diseases. Structured training modules for each population category must be created.

The ISHA volunteers can be trained to utilise the waiting time to provide awareness on health and nutrition, sanitation etc for the MHC program.

The MHC vehicles present challenges in accessibility for small children and elderly due to the difficulty in navigating the high steps at the entrance of the vehicle. This may be mitigated by providing a makeshift step stool or ramps

To ensure comprehensive coverage, it is recommended to provide 2-3 additional vehicles. These new vehicles can be equipped with a TV unit to broadcast awareness videos and pertinent info.

A framework for monitoring and follow up of all the patients supported via all the projects need to be developed.

Enhancing documentation is imperative, aligning it consistently with the Memorandum of Understanding (MOU) signed. Developing a meticulously planned MIS can bolster this effort.

It was observed that there were many Covid orphans and elderly patients who were part of this program. Programs to support them can be developed.

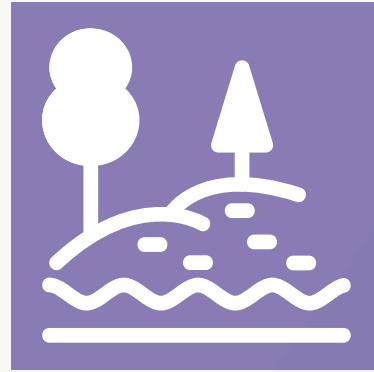
Students of the Mooligai Mutram program can be used as volunteers to promote awareness on the herbal garden and kitchen garden concepts during the camps. This will ensure optimal time utilisation as a lot of patients need to wait during the camps.

## 9. Conclusion

In conclusion, the health initiative by ISHA, in collaboration with Chola, helps in addressing the pressing healthcare needs of rural and tribal communities. Through a multi-pronged approach that integrates primary healthcare services, preventive health education, and the promotion of indigenous healthcare systems, the program has made significant strides in improving the health and well-being of marginalized populations. Moving forward, it is imperative to further enhance community outreach and engagement, leveraging strategies to promote health awareness and ensure comprehensive health coverage.







# Environment Projects implemented **by Nature Conservation Foundation**

A CSR Initiative of Cholamandalam  
investments & finance ltd.

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# 1. Introduction

Mitigating biodiversity loss and preserving ecosystems in India is imperative due to the country's rich biological diversity, which sustains vital ecosystem services and supports millions of livelihoods. India is one of the world's 17 mega-diverse countries, harboring a vast array of species across diverse ecosystems, from the Himalayan mountains to coastal mangroves. Preserving biodiversity is crucial for maintaining ecosystem resilience and stability, which in turn supports agriculture, fisheries, and forestry, providing sustenance to millions of people. These diverse ecosystems also play a critical role in regulating climate, preventing soil erosion, purifying water, and mitigating natural disasters such as floods and droughts.

Mitigating biodiversity loss is essential for global sustainability, as the loss of biodiversity can have far-reaching consequences for ecosystem functioning and human well-being. By preserving ecosystems and protecting endangered species, India contributes to global efforts to combat climate change, conserve biodiversity, and achieve sustainable development goals. Effective conservation measures, including habitat protection, sustainable resource management, biodiversity monitoring, and public awareness campaigns, are essential to safeguard India's natural heritage for future generations and ensure the continued provision of ecosystem services for human well-being.

Understanding this need, Cholamandalam Investments and finance Ltd., as part of their CSR initiative, are supporting various initiatives to conserve and preserve diverse ecosystems in India which will lead to mitigating biodiversity loss. They have partnered with an NGO called National Conservation Foundation, which through its multi-faceted approach, works across the country on various fronts to protect India's rich biodiversity and promote sustainable development practices.

## 2. About the Organizations

### a. Cholamandalam Investment and Finance Company Limited

Cholamandalam Investment and Finance Company Limited (CIFCL or Chola) is a financial services company based in India, primarily focusing on vehicle finance, home loans, home equity loans, SME loans, and investment advisory services. Corporate Social Responsibility (CSR) is an integral part of Chola's operations. Like many corporate entities, Chola recognizes the importance of giving back to society and contributing to the welfare of communities in which it operates. Its CSR initiatives encompass various sectors including education, healthcare, skill development, environment, and community development. Through partnerships and direct interventions, CIFCL aims to uplift underserved communities and promote sustainable development.

Chola's CSR initiatives range from providing scholarships to building educational infrastructure, ensuring access to quality education, funding healthcare facilities, organizing health camps, and supporting medical treatment for the underprivileged and skill development programs. Environmental sustainability efforts involve tree plantation drives, waste management projects, and promoting eco-friendly practices are also undertaken by Chola. These CSR endeavors not only fulfill regulatory requirements but also reflect Chola's commitment to social welfare and sustainable growth. By addressing societal needs and fostering community development, Chola strengthens its corporate reputation, fosters goodwill, and contributes positively to the well-being of society.



## b. National Conservation Foundation

The Nature Conservation Foundation (NCF) is an Indian non-profit organization dedicated to wildlife conservation, research, and environmental education. Founded in 1996, NCF focuses on species conservation, habitat preservation, community-based conservation, research, and environmental education. NCF's mission revolves around several key objectives:

**Species Conservation:** NCF undertakes research and conservation efforts aimed at protecting endangered species and their habitats. This includes flagship species like tigers, elephants, leopards, and many others.

**Habitat Preservation:** The organization focuses on conserving critical habitats such as forests, grasslands, wetlands, and marine ecosystems, which are essential for maintaining biodiversity and ecological balance.

**Community-based Conservation:** NCF recognizes the importance of involving local communities in conservation efforts. It collaborates with indigenous and rural communities to implement conservation projects that are both effective and sustainable.

**Research and Monitoring:** NCF conducts scientific research to better understand ecological processes, monitor wildlife populations, and assess the effectiveness of conservation interventions.

**Environmental Education:** The organization places a strong emphasis on environmental education and outreach programs, aiming to raise awareness about conservation issues and foster a sense of responsibility towards nature among people of all ages.

NCF's work is guided by a commitment to science-based conservation and a deep respect for the natural world. Through scientific research, community engagement, and advocacy, NCF through its holistic approach, aims to promote sustainable development practices that safeguard biodiversity, preserve ecosystems, and foster harmony between humans and the natural world.

## c. The Chola – NCF partnership

Chola signed an MoU with NCF in July 2022 for the implementation of various environment sustainability projects. The Key Activities were:

S.no	Project Title	Location	Budget
1	Carbon Sequestration and biodiversity conservation in human-modified tropical forests under a changing climate	<i>Anamalais and Sakleshpur</i>	53,61,500
2	Conflicts to coexistence: Mobile phone technology for human safety and elephant conservation	<i>Anamalais and Hassan</i>	34,13,600
3	Climate change, fishing and Nearshore marine ecosystems	<i>Lakshdweep Archipelago</i>	69,87,474
4	Securing livelihoods to foster coexistence of people and wildlife in Upper Spiti landscape	<i>Spiti, HP</i>	30,45,000
			<b>1,88,07,574</b>



### 3. Objective & Scope of the Assessment

Social Audit Network, India was approached by Chola to conduct a social impact assessment of the projects implemented by NCF. The objective of the assessment was to evaluate the impact of the 4 projects mentioned above that enables to conserve and preserve diverse ecosystems in India leading to mitigating biodiversity loss.

The scope of the project was from April 2022- March 2023.

### 4. Methodology

The social impact assessment was spearheaded by Mrs Latha Suresh, Director-SAN India and was ably assisted by Ms. Marie Banu and Ms. Neeta N K, Social Auditors of SAN India. The team visited Valaparai and Lakshadweep and interacted with the stakeholders at those locations. The team held online interactions with the project team and at Spiti.

S.no	Location visited	Date of visit
1	<i>Anamalais</i>	13 <sup>th</sup> to 14 <sup>th</sup> March 2024
2	<i>Lakshadweep Archipelago</i>	22 <sup>nd</sup> to 24 <sup>th</sup> March 2024

### 5. Evaluation Framework

The objectives of the Environment projects implemented by NCF were evaluated using the REESS framework. REESS framework measures the performance of a project on five parameters – Relevance, Effectiveness, Efficiency, Social Impact and Sustainability. Various indicators were developed for the project based on the REESS framework.

#### **Relevance: Is the intervention doing the right things?**

The extent to which the objectives of a development intervention are consistent with institutional and beneficiary's requirements, alignment with partner organization, donor's mission, and country's need.

#### **Effectiveness: Is the intervention achieving its objectives?**

The extent to which the development intervention's objectives were achieved, or are expected to be achieved, considering their relative importance.

#### **Efficiency: How well are the resources being used?**

The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.

#### **Sustainability: Will the benefits (financial, economic, social, environmental, and institutional capacities) sustain over time**



The continuation of benefits from a development intervention after major development assistance has been completed.

### **Social Impact: What difference does the intervention make?**

The extent to which the intervention has generated or is expected to generate significant positive or negative, intended, or unintended, higher-level effects.

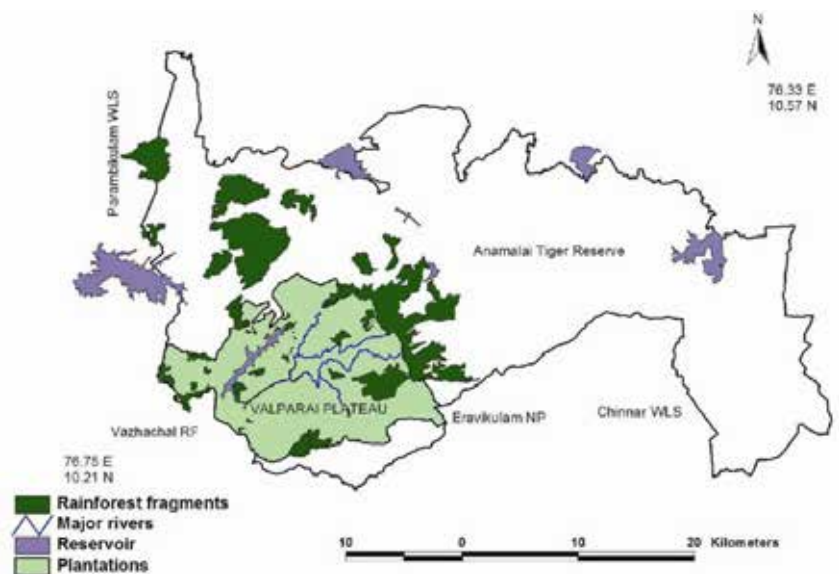
## **6. Carbon Sequestration and biodiversity conservation in human-modified tropical forests under a changing climate**

Location: Anamalais & Hassan

### **1. Background**

Rainforests are lush, biodiverse ecosystems characterized by dense vegetation, high rainfall, and warm climates. They are found in tropical regions near the equator, including the Amazon Basin, Congo Basin, and Southeast Asia. Rainforests are home to an incredible array of plant and animal species, many of which are not found anywhere else on Earth. These ecosystems play a vital role in regulating the global climate, storing carbon dioxide, and producing oxygen. However, they are under threat from deforestation, agriculture, mining, and climate change, which poses significant risks to both the biodiversity they support and the planet's overall health.

The Valparai region in Tamil Nadu, India, is home to a unique rainforest ecosystem nestled amidst the Western Ghats Mountain range. This area is characterized by dense forests, lush greenery, and a diverse array of flora and fauna. The rainforests of Valparai are renowned for their rich biodiversity,



**The Lion tailed macaque**





hosting numerous endemic and endangered species. It is a hill station located in the Coimbatore district of Tamil Nadu, India, and is surrounded by several wildlife sanctuaries and protected areas, contributing to its rich biodiversity.

Valparai is completely surrounded by wildlife sanctuaries (nearly 5000 square kms) across both Kerala and Tamil Nadu. The northern and eastern side of Valparai is the Anamalai Tiger Reserve. At the southern side is Eravikulam National Park and Chinnar Wildlife Sanctuary. In the western side is Vazhachal Reserve Forest and Parambikulam Wildlife Sanctuary.

Hence when the wildlife moves from one side to the other, it passes through the Valaparai plateau. The rainforest patches in this region serve as important habitats and corridors for a variety of wildlife species. During their movements, animals often utilize these rainforest patches for various purposes such as foraging, resting, breeding, and seeking shelter. Some animals may regularly inhabit these areas, while others may use them as stopover points during migration or dispersal.

Common animals that may be found in the rainforest patches of Valparai include various species of birds, elephants, wild gaurs (bison), tigers, leopards, endemic species such as the lion-tailed macaque, Nilgiri langur, Malabar giant squirrel, reptiles, amphibians, and insects. However, human activities such as deforestation, habitat fragmentation, and encroachment can disrupt the natural behaviors and movements of wildlife in these areas.

Hence, conservation efforts are crucial to protect and maintain the integrity of these rainforest patches to ensure the survival of the diverse wildlife that depends on them.

Understanding this need NCF has been working extensively for over a decade in restoring degraded rainforests and protecting endangered species like the lion-tailed macaque, and community-based conservation programs. The project is titled Carbon Sequestration and biodiversity conservation in human-modified tropical forests under a changing climate.

## 2. Stakeholder's consulted

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The social auditors of SAN India - Ms.Latha Suresh & Ms. Marie Banu – visited Valparai on 13<sup>th</sup> and 14<sup>th</sup> of March and interacted with the following stakeholders:

1. Mr. T R Shankar Raman
2. MS. Divya Mudappa
3. Mr. Srinivasan Kasinathan

The SAN team also met the field workers of NCF who were stationed at a few places across Valparai, who were guarding the endangered lion tail macaques from tourist attacks.

SAN team also interacted with 5 tribal people who were working at the Plant Nursery.





### 3. Report on Performance

Carbon sequestration and biodiversity conservation are critical components of sustainable forest management, especially in human-modified tropical forests or rain forests facing the challenges of a changing climate. NCF has been working towards integrating carbon sequestration and biodiversity conservation efforts in the rain forest regions of Valparai for over a decade.

*The entire Valparai region was a rainforest before. The British were trying to see a suitable area for a plantation after setting up Nilgiris. So, they came to Valparai and they found this a suitable place for coffee and tea plantation. They cleared a large track of the forest area and they left some forest spaces between the tea and coffee plantations. The focus of NCF is to restore some of these forest spaces which are degraded patches now. The first step of our rainforest restoration project is to plant native rainforest trees in these degraded patches. – Divya Mudappa*

#### a) Restoration of Degraded patches

Restoration of degraded forest patches involves replanting native species, controlling invasive plants, and managing soil erosion. The Process of restoring a degraded patch by NCF includes-

1. Identify the degraded rain forest patch.
2. Get permission from the owner of the patch to work on its restoration.
3. Prepare the patch for planting tree saplings.
4. Plant tree saplings that are native rain forest species
5. Maintain the patch by watering once or twice a week as needed for a few weeks. The trees are allowed to grow naturally, and no fertilizers are applied. Weeds are removed periodically.
6. Monitor the growth of the trees periodically by measuring its Height, girth width, flowering period, fruiting period etc. Photos are taken once in 6 months and the survival monitoring of the trees is also done once in six months.
7. Calculate the Carbon sequestration once the trees have a girth size above 5 cms.

NCF has signed MoU with Parry Agro to use the degraded patches within their plantation site for fifteen years and a MoU with Tata Coffee for 10 years. They have restored 36 sites till date within these two plantations. From the 2002 till 2021 NCF has planted 64,817 trees in the Valparai region.

Period	No. of Trees
2002-2015	38,581
2016-2018	8,905
2019-2021	17,331
	<b>64,817</b>







**A restored patch of rainforest**



**Plants being blue tagged and monitored by NCF**



During the year 2022-23, NCF has planted 4,893 trees in 9 patches. Among these, 593 trees belong to 14 threatened species.

S.no	Location of Patches	No. of Trees planted	No. of unique species
1	Iyerpadi Top extension: Site lyT-04 & lyT-05	497	52
2	Iyerpadi Top extension: Site lyT-07	777	49
3	Candura: Grid I17	545	80
4	Candura: Grid J17	224	56
5	Candura: Grid K17	326	72
6	Tata Finlay	1498	67
7	Tata Group Office	394	30
8	Anamalai Nature Info Centre	126	25
9	Poonachi	506	31
	<b>TOTAL</b>	<b>4893</b>	<b>106</b>

*We plant a high diversity mix of native rainforest trees, with species selected according to their occurrence in reference or benchmark rainforest sites in the same landscape. The trees planted reflects the diversity that is characteristics of the mid-elevation tropical wet evergreen forests of the Western Ghats. Some of the major tree species planted include: Cullenia exarillata (Anamalais), Canarium strictum, Myristica beddomei, Dimocarpus longan, Heynea trijuga, Elaeocarpus serratus, E. tuberculatus, Palaquium ellipticum, Mesua ferrea, and Syzygium spp.*

– Shankar Raman

*Most of our focus in the first two decades of our work here has been on conserving biodiversity in the patches of forest that remain within Valparai. Now we are seeing that climate change is having an effect everywhere. So, now we are tracking climate effects a little more closely.*

- Divya

## b. Maintaining a Nursery

NCF maintains a nursery at Valparai to grow saplings of the various rainforest trees. A slope of land near the river was given to NCF by Tata coffee to set up a nursery. Around 4 people work everyday at the nursery. All of them are the local tribals and are involved in collecting seeds from the rain forests, planting the seeds in small covers, and transferring them to larger pots or beds.

The nursery serves as a hub for germinating locally available seeds, nurturing the saplings, and breeding rainforest species. The nursery team ensures their healthy growth before they are planted in the forest patches identified by NCF.







**Tribal girls working at the Nursery**



**Saplings are classified according to species.**



125 different rainforest species are grown in the nursery. This includes a few slow growing varieties also which take about one year to grow to a length of 15-20 cms. (Refer Annexure 1 for the list of trees)

*We are trying to monitor the larger, older trees within good forests in Valparai to know what their pattern should be. This also helps us collect seeds for our nursery. So we know exactly when to target for the species that we can collect to grow in the nursery. – Divya*

*We know the flowering and fruiting patterns of most of the trees in Valparai region. Based on this we go around the place and collect the seeds of the native species from the forests. These seeds are then segregated, and we plant the good ones. All the tree saplings that are planted in the patches are from this nursery – Nursery Head hailing from the local tribal community*

### c. Sharing of Data with Naturalist / Researchers

NCF has been meticulously documenting all the research work done so far at Valparai. These data are shared in many open source platforms to help other researchers and Naturalists benefit out of it.

*We maintain data for restoration planting which has data of all the various forest fragments. Within each of the fragments we have multiple sites and we also have their latitude, longitude, site code, the area in hectares, the number of saplings planted, the total number of species etc. The data that we maintain is very important. Since we began this work in 2017 and we are continuing, we have data that spans nearly 7-8 years. With at least 10 years we can see if there is any trend or species shifting in relation to tree phenology etc. Many of our scientists use this data to publish papers or work on abstracts for conferences. – Shankar Raman*

Many photos of the flora and fauna around the rainforest regions are also uploaded in the below mentioned web sites and open platforms.

## Details about the type of data uploaded on open source / common platforms

S. No.	Platform	Details of Data uploaded
1	Zenodo	<p>Datasets related to biodiversity studies and surveys (including past datasets) are uploaded here under open access CC-BY licenses. Uploads during the 2022-23 period include:</p> <p>Osuri, A. M., Dayani Chakravarthy, Divya Mudappa, &amp; T. R. S. Raman. (2022). Fruit, seed dispersal, and life history traits of tropical rainforest trees of the Anamalai Hills, Western Ghats, India [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.6998189">https://doi.org/10.5281/zenodo.6998189</a></p> <p>Page, N., Kasinathan, S., Bhat, K., Moorthi, G., Sundarraj, T., Mudappa, D., &amp; Raman, T. R. S. (2022). Data from: A new population record of Critically Endangered Dipterocarpus bourdillonii Brandis from the Anamalai Tiger Reserve, Tamil Nadu [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.6799251">https://doi.org/10.5281/zenodo.6799251</a></p> <p>Nature Conservation Foundation. (2022). Mammal occurrence records (2015-18) in the Valparai Plateau and Anamalai Tiger Reserve, Western Ghats, India [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.7008315">https://doi.org/10.5281/zenodo.7008315</a></p> <p>Jeganathan, P., Divya Mudappa, M. Ananda Kumar, &amp; T. R. Shankar Raman. (2022).</p> <p>Data from: Seasonal variation in wildlife roadkills in plantations and tropical rainforest in the Anamalai Hills, Western Ghats, India [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.7060430">https://doi.org/10.5281/zenodo.7060430</a></p> <p>Raman, T. R. S., Divya Mudappa, Anand M. Osuri, N. Ayyappan, S. Muthuramkumar, &amp; N. Parthasarathy. (2022). Data from: Plant Community Structure in Tropical Rain Forest Fragments of the Western Ghats, India (2.0) [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.7457732">https://doi.org/10.5281/zenodo.7457732</a></p> <p>Sridhar, H., Raman, T. R. S., &amp; Mudappa, D. (2023). Data from: Mammal persistence and abundance in tropical rainforest remnants in the southern Western Ghats, India [Data set]. Zenodo. <a href="https://doi.org/10.5281/zenodo.7856722">https://doi.org/10.5281/zenodo.7856722</a></p>
2	Global Biodiversity Information Facility (GBIF.org)	<p>GBIF is the central global repository for biodiversity data. NCF was endorsed as a <a href="#">publisher on GBIF in May 2022</a>. We have uploaded 9 datasets so far, representing data of over 27,000 biodiversity occurrences: <a href="https://www.gbif.org/dataset/search?publishing_org=038a1133-81e2-42e8-a4dd-b5ac246eb082">https://www.gbif.org/dataset/search?publishing_org=038a1133-81e2-42e8-a4dd-b5ac246eb082</a></p>

S. No.	Platform	Details of Data uploaded
3	iNaturalist.org	<p>iNaturalist is an online citizen science portal for crowd-sourcing biodiversity data and species identifications from around the world. We have been uploading our observations there.</p> <p>Kadamane: 360 observations</p> <p>Anamalai Hills: <a href="https://www.inaturalist.org/projects/anamalai-biodiversity-project">https://www.inaturalist.org/projects/anamalai-biodiversity-project</a> 1723 observations of about 750 species</p>
4	Wikimedia Commons	<p>As part of an ongoing effort called <a href="#">WikiProject Nature and conservation in India</a>, we have been uploading media to Wikimedia Commons for use in Wikipedia pages and by the wider global community including in educational materials, magazines, and newspapers.</p>
5	eBird	<p>We regularly upload birdlists from all our study sites to the citizen science portal eBird (<a href="https://ebird.org/india">https://ebird.org/india</a>)</p>

## 4. Evaluation of Program using REESS framework

### a. Relevance

When rainforests are degraded, biodiversity declines, carbon is released into the atmosphere, soil erosion increases, and ecosystems lose resilience. This leads to habitat loss for countless species, aggravates climate change, threatens indigenous communities, and reduces the forest's ability to provide vital ecosystem services like clean air and water.

Climate change brings a multitude of damaging effects, including natural disasters, widespread droughts and floods, rising sea levels, and loss of biodiversity. It jeopardizes food and water security, aggravates health problems, and environmental degradation. Without mitigation, these impacts will worsen, endangering ecosystems, economies, and human lives globally, perpetuating a cycle of suffering and instability. Urgent action to reduce greenhouse gas emissions and adapt to changing conditions is essential to mitigate these devastating effects and safeguard the planet for future generations.

If we do not sequester carbon now, atmospheric carbon dioxide levels will continue to rise, intensifying climate change. This can lead to more frequent and extreme weather events, sea-level rise, habitat loss, and disruptions to ecosystems and human societies. Failing to sequester carbon risks irreversible damage to the environment and threatens global stability.

Hence the work done by NCF is highly relevant in combating climate change.

### b. Effectiveness

Rainforests should be conserved for numerous reasons, primarily because of their ecological, social, and economic importance. Rainforests harbor unparalleled biodiversity, containing millions of species, many of which are yet to be discovered. Conserving rainforests preserves this biodiversity, which is crucial for ecosystem stability and resilience. Moreover, rainforests are vital carbon sinks, absorbing vast amounts





of carbon dioxide and helping mitigate climate change. Their destruction contributes significantly to greenhouse gas emissions, exacerbating global warming.

Carbon sequestration through rainforest restoration is highly effective due to the vast carbon storage capacity of healthy forests. Rainforests are among the most carbon-dense ecosystems globally, with trees storing significant amounts of carbon in their biomass and soils. Restoring degraded rainforests not only halts carbon emissions from deforestation but also enables reabsorption of atmospheric carbon dioxide through regrowth. This process can result in substantial carbon sequestration, mitigating climate change while promoting biodiversity, ecosystem services, and community resilience.

*We will be able to calculate carbon sequestration after a year or two. All the necessary information and data has been collected and recorded by our team. - Divya*

NCF has been using comprehensive restoration strategies, including native species selection, habitat connectivity, and community involvement, coupled with effective protection measures against deforestation and habitat fragmentation. All the activities of NCF in the region serve as a crucial tool for biodiversity conservation, promoting species richness, and ecological balance in Valparai.

### c. Efficiency

Rainforest restoration activities of NCF has reintroduced native vegetation, and has created/ restored habitats for a wide range of species. This has increased habitat connectivity, allowing for the movement of species and genetic exchange, which is vital for maintaining healthy populations.

The restored rainforests act as refuges for endangered species, providing them with suitable habitats and resources necessary for survival. Moreover, the restoration of diverse plant species promotes a complex food web, supporting various trophic levels and ensuring ecosystem stability.

Restored rainforests contribute to carbon sequestration, mitigating climate change and providing further benefits to biodiversity. As forests grow and mature, they continue to sequester carbon from the atmosphere, aiding in the regulation of global climate patterns.

NCF being a research organization has developed ongoing monitoring and management tools to ensure the long-term success of restoration projects. The selection of native species and the involvement of local communities are laudable features that aid the efficiency of the project

NCF's restoration efforts have become economically feasible in the long term. It involved initial investments it has led to self-sustaining ecosystems that require minimal ongoing input.

### d. Sustainability

NCF's rainforest restoration programs are all sustainable ventures because of the following -

NCF's rainforest restoration aims to restore not only the physical structure of the rainforest but also its biodiversity. This has been done by reintroducing the native plant species and creating habitats for wildlife.



Restoring soil fertility and structure in rainforests is crucial for the long-term health of the rainforest ecosystem. Conducting periodic soil testing will prove how the soil fertility has improved over the years.

*We definitely know that the soil nutrient contents are much better than before in the patches where we have worked. We are going to start testing the soil regularly in all the patches. We are planning to appoint dedicated soil experts in the coming years to help us in measuring soil fertility.*

**- Divya**

The restored rainforests contribute to maintaining local hydrological cycles, including rainfall patterns, groundwater recharge, and stream flow. These patches have all become self-sustained patches and do not require any external inputs to maintain them. Only monitoring of the patches are required to continue with the ongoing research on the restoration of the rainforest patches.

The nurseries set up by NCF have facilitated research and education, serving as learning centers for plant biology, propagation techniques, and sustainable planting practices thereby promoting environmental sustainability.

## **e. Social Impact**

Carbon sequestration is the process by which carbon dioxide (CO<sub>2</sub>) is removed from the atmosphere and stored in carbon sinks such as forests, oceans, and soil. It helps mitigate climate change by reducing the concentration of greenhouse gases in the atmosphere, thus helping to offset global warming. Rain forests play a vital role by sequestering large amounts of carbon dioxide from the atmosphere through photosynthesis and storing it in biomass and soils. Human-modified rain forests like the ones created in Valparai have contributed to carbon sequestration efforts by restoring forest cover and increasing biomass accumulation.

Restoring rainforests directly impacts biodiversity conservation. Biodiversity conservation involves the protection, management, and restoration of the variety and variability of life on Earth, including ecosystems, species, and genetic diversity. It aims to maintain the health and functioning of ecosystems, support sustainable development, and preserve the intricate web of life upon which humans depend. Biodiversity is essential for ecosystem functioning and resilience of the world's biodiversity.

NCF's conservation strategies in Valparai and Hassan focus on maintaining / enhancing habitat quality, connectivity for wildlife, and species diversity. This has been achieved through measures such as protecting key habitats, restoring degraded areas, establishing wildlife corridors, and promoting sustainable land-use practices that minimize habitat fragmentation and degradation.

NCF has established a synergy between carbon sequestration and biodiversity conservation efforts in the rainforest region by prioritizing and planting native tree species which has simultaneously enhanced carbon storage and provided habitat for wildlife and various flora and fauna in the region. This holistic approach of NCF has considered both carbon and biodiversity goals and have achieved multiple benefits for the ecosystem while minimizing negative impacts.



Rainforests harbor incredibly diverse ecosystems, supporting a plethora of plant and animal species. By restoring degraded rainforest areas, biodiversity can rebound as habitats are reinstated, providing essential resources and shelter for numerous species. NCF's restoration activities not only safeguards endangered species but also enhances ecosystem resilience in Valparai, ensuring the preservation of biodiversity for future generations.

The Valparai region is home to various wildlife, including elephants, tigers, leopards, gaurs (Indian bison), lion-tailed macaques, and a plethora of bird species. The rainforest serves as a critical habitat for these animals, providing them with food, shelter, and a safe environment to thrive. However, like many other rainforests globally, the Valparai region faces threats from human activities such as deforestation, habitat fragmentation, and encroachment for agriculture and development. NCF's activities have minimized these activities and have facilitated the conservation of the region's biodiversity and ecological integrity.

The Hassan region of Karnataka, located within the Western Ghats, is a global biodiversity hotspot renowned for its rich ecological diversity. While the area might not be classified as a rainforest, it encompasses a variety of habitats, including tropical moist forests, semi-evergreen forests, grasslands, and wetlands, which collectively support a high level of biodiversity. However, like many biodiversity hotspots around the world, the Hassan region faces threats from human activities such as deforestation, habitat destruction, poaching, and pollution. NCF's activities in the Hassan region are trying to reduce these activities and facilitate in the ecological conservation of the Hassan region.

Plant nurseries play a crucial role in environmental conservation and landscaping by providing a controlled environment for the cultivation of various plant species. NCFs nursey at Valparai and Hassan serve as hubs for germinating seeds of native species, nurturing the seedlings, and propagating native species plants, and ensuring their healthy growth before transplantation. These nurseries contribute to biodiversity conservation by cultivating native species, aiding in habitat restoration efforts.

By engaging local communities in restoration efforts and providing employment opportunities for them has fostered a sense of ownership and stewardship. By incorporating indigenous knowledge and practices, NCF's team have learnt valuable insights about the local ecosystems and traditional land management practices.

## 5. Recommendations

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NCF should develop a long-term monitoring and maintenance plan to ensure the success and sustainability of restoration efforts. This may involve periodic assessments of vegetation cover, biodiversity, soil quality, and hydrological conditions, as well as ongoing management activities.

NCF should advocate for supportive policies and regulations at the local, national, and international levels that promote rainforest conservation and restoration. This may include incentives for reforestation, enforcement of laws against land conversion, and recognition of indigenous land rights.

NCF should foster partnerships with varied organisations based on shared goals, mutual respect, and transparency. They should collaborate with government agencies, non-governmental organizations, research institutions, private sector entities, and other stakeholders to leverage resources, expertise, and support for restoration efforts.



NCF can obtain carbon credits from the carbon sequestration activities by using approved methodologies and tools. Once verified by the relevant authorities, carbon credits are issued based on the amount of carbon sequestered. These credits can be traded in carbon markets or sold to entities looking to offset their emissions. As NCF is continuously monitoring and reporting on these aspects, they can maintain credit validity and ensure ongoing carbon sequestration efforts.

## 6. Conclusion

Integrating carbon sequestration and biodiversity conservation efforts in rain forests is essential for enhancing ecosystem resilience, mitigating climate change, and ensuring the long-term sustainability of forest ecosystems and the services they provide. NCF's Carbon Sequestration and biodiversity conservation in human-modified tropical forests under a changing climate project in the Valparai and Hassan regions in South India has been successful in carrying out its conservation programs. NCF's efforts to conserve the rainforests are crucial for ensuring the long-term survival of the rainforest ecosystem in the region and maintaining its ecological balance.

### Annexure 1 – List of native species trees grown in the Nursery

Acronychia pedunculata	Drypetes wightii	Mesua ferrea (small_leaf)
Actinodaphne bourdillonii	Dysoxylum binectariferum	Michelia champaca
Actinodaphne malabarica	Dysoxylum malabaricum	Myristica beddomei
Actinodaphne sp.	Dysoxylum sp.	Neolitsea scrobiculata
Aglaia canarana	Elaeocarpus munroii	Nothapodytes nimmoniana
Aglaia elaeagnoidea	Elaeocarpus serratus	Nothopegia beddomei
Aglaia simplicifolia	Elaeocarpus weibly	Nothopegia racemosa
Anacolosia densiflora	Elaeocarpus tuberculatus	Olea dioica
Antidesma montanum	Eugenia sp.	Ormosia travancorica
Aphanamixis polystachya	Euodia lunu-ankenda	Orophea thomsonii
Aporosa sp.	Excoecaria oppositifolia	Otonephelium stipulaceum
Ardisia pauciflora	Ficus callosa	Palaquium ellipticum
Artocarpus gomezianus	Ficus mysorensis	Palaquium ravii
Artocarpus heterophyllus	Ficus sp.	Paracroton pendulus
Artocarpus hirsutus	Filicium decipiens	Persea macrantha
Atalantia racemosa	Flacourtia montana	Polyalthia fragrans
Baccaurea courtallensis	Garcinia morella	Prunus ceylanica



Acronychia pedunculata	Drypetes wightii	Mesua ferrea (small_leaf)
Beilschmiedia wightii	Garcinia sp.	Pseudoglochidion anamalayanum
Bhesa indica	Glochidion malabaricum	Reinwardtiodendron anaimalaiense
Bischofia javanica	Gnetum ula	Schleichera oleosa
Bombax ceiba	Gomphandra coriacea	Scolopia crenata
Calophyllum austroindicum	Heritiera papilio	Semecarpus travancorica
Calophyllum polyanthum	Heynea trijuga	Spondias indica
Calophyllum sp.	Holigarna nigra	Sterculia guttata
Canarium strictum	Hydnocarpus alpina	Symplocos racemosa
Cane sp.	Knema attenuata	Symplocos rosea
Caryota urens	Leea indica	Symplocos sp.
Cassine glauca	Lepisanthes deficiens	Syzygium cumini
Chrysophyllum lanceolatum	Ligustrum perrottetii	Syzygium densiflorum
Cinnamomum malabattrum	Litsea coriacea	Syzygium gardneri
Clausena anisata	Litsea floribunda	Syzygium rubicundum
Clausena indica	Litsea nigrescens	Syzygium sp.
Croton laccifer	Litsea stocksii	Terminalia bellirica
Croton sp.	Litsea udayanii	Tetrameles nudiflora
Cullenia exarillata	Macaranga indica	Toona ciliata
Debregeisia longifolia	Macaranga peltata	Turpinia malabarica
Dimocarpus longan	Mangifera indica	Unidentified (climber)
Dimorphocalyx beddomei	Margaritaria indica	Vateria indicave rainforest trees, with species selected according to their occurrence in reference or benchma
Diospyros confertiflora	Mastixia arborea	Vernonia arborea
Diospyros ghatensis	Melia dubia	Xanthophyllum flavescens
Diospyros paniculata	Meliosma simplicifolia	Zingiber sp.
Diospyros sylvatica	Mesua ferrea	



## 7. Conflicts to coexistence: Mobile phone technology for human safety and elephant conservation

Location: Anamalais & Hassan

### a. Background

Over the past five decades, there has been a significant loss of forest cover across the western Ghats, incorporating regions like Hassan due to the establishment and expansion of coffee plantations, leading to a reduction in forested areas.

In India, daily interactions between people and elephants endanger lives on both sides besides extensive property/crop damage. Since 2002, NCF has been conducting research and conservation work in two critical landscapes of south India, namely, the Valparai plateau in the Anamalais of Tamil Nadu and the Hassan region in Karnataka.

Elephants, as habitat generalists, require large territories, far exceeding the boundaries of protected areas that are termed as tiger reserves. Consequently, conflict with humans is inevitable as elephants navigate through human-use areas. The continuous presence of elephants in these areas are indicated by early reports from the forest department. Conflict situations have occasionally arisen, leading to demands to capture of individual elephants from Hassan.

### Topography

The Valparai plateau is a 220 km<sup>2</sup> landscape matrix of tea-coffee-rainforest, supporting the livelihood of around 70,859 people and 120-140 elephants that move across plantations into surrounding Protected Areas. The Hassan region spread across 750 km<sup>2</sup> is primarily dominated by coffee-paddy crops, supporting around 1,20,000 people and 60-70 elephants.

Valparai, is surrounded by forests and Hassan lacks extensive forest cover thereby forcing elephants to venture into human-populated areas. Despite Hassan lying slightly outside the primary western Ghats region, it remains connected to it. The elephant population in this area maintains continuity, exemplified by the Nagarhole National Park, which serves as a crucial link. This national park connects to the Kodagu region in Karnataka, further extending to Chikmangalur, forming a vast belt of primarily coffee plantations with pockets of remaining forests.

While crop damage is not a significant issue in Valparai, it is a concern in Hassan. However, both landscapes share the serious problem of human casualties or injuries caused by elephants.

The land ownership patterns further complicate matters, with companies managing most of the land in Valparai, while in Hassan, individual farmers typically own the land. This decentralised ownership makes it challenging to implement cohesive management strategies, as each farmer operates independently.



## Reason for Human Elephant Conflict

NCF's long-term research identified that human deaths/injuries due to elephants have been primarily accidental encounters due to the lack of prior intimation about elephants and their movements through plantations.

The inevitability of space and resource use by both the protagonists resulted in conflict between people and elephants. In both these landscapes, loss of human lives/injuries due to elephants has been a serious concern that elicited fear, trauma, and antagonism besides damages to property and crops by elephants.

In collaboration with local communities and state forest departments, NCF has implemented simple, adaptive, and participative mobile phone technology-based interventions which include alerting people over mobile phones using bulk SMS text and voice calls and installation of mobile-operated alert beacons and GSM-based information boards in **strategic locations indicating elephant locations** and their movements daily.

## Damages caused by elephants and reasons

In Valparai, elephants have been known to cause significant damage to various structures, including ration shops, school noon-meal centres, and residential buildings. These buildings often store food grains, making them particularly vulnerable to elephant-induced destruction. Interestingly, the frequency of property damage incidents by elephants has varied over the years, with a notable concentration occurring between October and March, coinciding with the peak season for elephant movements on the Valparai plateau.

Research conducted by the NCF suggests that the occurrence of damages is not directly correlated with the number of days elephants spend on the plateau. This implies that an increase in the presence of elephants in plantations does not necessarily lead to a proportional rise in property damage. Instead, the location of ration shops, noon-meal centres, and residential areas, along with factors such as the amount and type of food stored, play crucial roles in determining the likelihood of damage. Furthermore, NCF observations have revealed that damages to residences are often concentrated towards the kitchen or bathroom side, indicating potential patterns in elephant behaviour and preferences.

In contrast, in Hassan, the nature of damages inflicted by elephants differs significantly from that in Valparai. Here, elephants primarily target crops such as paddy, coffee, and areca, with paddy being particularly susceptible to damage. Paddy fields, often located between coffee plantations, serve as pathways for elephants moving between monoculture refuges. Trampling and feeding activities during this movement result in significant crop loss, especially between August and December, coinciding with the paddy season.

Additional factors contributing to crop damage in Hassan include human intervention, such as driving or chasing elephants away from coffee plantations, inadvertently leading them into paddy fields. As a result, there is a pressing need to develop effective management strategies to mitigate crop damage caused by elephants in the Hassan region.





## b. Report on Performance

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**NCF's approach** is driven by their passion for species conservation and a systematic approach to problem-solving. The NCF team emphasizes the importance of safety measures and reducing unnecessary visibility to tourists, with a primary goal of promoting coexistence between humans and elephants while minimising risks to both parties. For instance, the strategic placement of signboards in critical junctions aims to alert individuals about potential encounters with elephants or other wildlife. However, there's a concern that this approach could unintentionally attract people to linger in these areas, thereby heightening the risk of wildlife encounters.

NCF mitigation measures include employing teams to monitor elephant movements, and exploring technological solutions like light sensors. NCF's commitment to think out of the box has led to exploring novel technologies and ideas to mitigate conflict. By collaborating with the forest department, NCF has introduced innovative approaches that enhance the existing strategies. NCF advocates for innovative solutions that align with scientific findings and complement the Forest Department's efforts.

The **Forest Department's approach** to managing human-elephant conflict differs significantly from that of NCF, as they primarily focus on traditional management methods, whereas NCF's approach is rooted in scientific principles. While the department may implement measures like solar-powered fences and trenches, NCF scientific research often reveals that these methods may not effectively address the root causes of conflict.

Unlike the forest department's reactive response to conflict incidents, NCF long term continuous monitoring of elephant herds enables to predict the elephant's movements and inform proactive strategies. This collaboration has historically empowered NCF to guide the department's actions effectively. However, NCF acknowledges the department's efforts to improve, adapt, and establish dedicated teams and structured reporting systems.

### Tracking elephants and their movements

Tracking elephant herds and assessing their movements is a multifaceted process that involves both practical fieldwork and scientific analysis. Initially, NCF team identifies the specific herd and gathers essential information such as the number of adults and juveniles present. This data is collected using GPS technology to ensure accuracy.

Once the herd is identified and assessed, the team moves on to the next location, unless there are potential issues such as the presence of people working nearby or if a herd is on the move. In such cases, they inform the management to ensure the safety of both humans and elephants. This proactive approach involves advising the management to relocate workers away from the elephant's path, typically at a safe distance of 150 to 200 meters.

While NCF's primary role is to track elephant movements and mitigate potential conflicts, their efforts extend beyond practical fieldwork. They also focus on understanding elephants from a scientific perspective, analysing demographic changes and movement patterns over time. This scientific understanding is vital for predicting and responding to changes in elephant behaviour, ensuring effective conservation strategies.



The situation in Valparai highlights the delicate balance between promoting responsible tourism and ensuring the safety of local communities and wildlife. While tourism brings visibility to the area, and revenue to few, it also increases the risk of human-elephant conflict, especially when tourists engage in risky behaviour such as taking pictures of elephants at night or disregarding safety guidelines.

The situation in Hassan highlights the complex relationship between human activities, land use patterns, and elephant movements. The installation of solar power fences around country estates has inadvertently altered the landscape, pushing elephants into neighbouring areas where they have not been seen in decades. This shift in elephant routes underscores the importance of understanding how changes in land use affect wildlife movements.

Analysing these changes scientifically is crucial for informing policymakers and communities about the implications of their actions on elephant habitats.

## Process



1. The process begins with the field team tracking elephants, receiving information from watchers or local community members about elephant sightings or movements.
2. Once the information is received, messages are sent out to relevant stakeholders, including the forest department, tea and coffee estate owners, and local workers, to inform them of the elephant movements. In addition to informing stakeholders, the team also takes proactive measures to mitigate human-elephant conflict, such as advising workers to move away from the elephants' path or coordinating with authorities to ensure safety measures are in place.
3. The tea and coffee estate owners are informed not to send their workers to areas where elephant movement is being traced. They are also advised to change the collection areas for their employees to avoid potential conflicts. Depending on the situation, the forest department is informed about the elephant movements and their assistance is sought in mitigating any potential conflicts.
4. Once on the ground, the team tracks the elephants to identify which herd they belong to and gather data on their demographics and behaviour. This information helps in understanding elephant movements and patterns over time.
5. Alongside practical interventions, the team emphasises the importance of scientific monitoring and analysis to understand how changes in land use and other factors impact elephant behaviour. This involves collecting data, analysing trends, and presenting findings to NCF, Forest Department and local governing authorities.

## c. EVALUATION OF IMPACT – REESS FRAMEWORK

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### a. Relevance

Ensuring human safety stands as a paramount priority in reshaping perceptions and nurturing coexistence of humans and elephants. With an alarming annual toll of approximately 500 human fatalities attributed to elephants in India, this issue demands immediate and comprehensive attention. The repercussions extend beyond individual casualties, impacting entire communities and shaping their attitudes towards elephants.

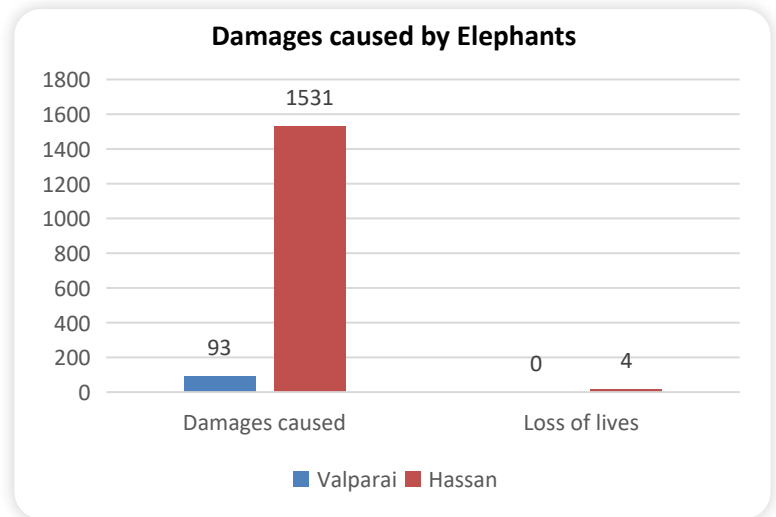
However, tackling human-elephant conflict necessitates a multifaceted approach. While the Forest Department holds a crucial role, organisations like NCF complement these efforts by addressing immediate community needs and cultivating positive attitudes towards elephant conservation.

The Elephant Conservation programme has witnessed a notable decrease in the frequency and severity of human-elephant conflict incidents across its operational areas. Through meticulous tracking and analysis, the programme has effectively mitigated instances of property damage, crop raids, and human injuries or fatalities. These outcomes underscore the relevance of the NCF programme in implementing robust conflict mitigation strategies, safeguarding the safety and well-being of both humans and elephants, while keeping the communities as a key stakeholder.



## b. Effectiveness

Throughout the programme's duration, considerable efforts were made to educate local communities and build their capacity to coexist with elephants sustainably. Empowering communities with knowledge and skills needed to mitigate conflicts and promote conservation underscored the programme's effectiveness in fostering local support for conservation efforts and promoting sustainable coexistence between communities and elephants.



The Valparai region's shift towards coexistence over conflict has yielded remarkable results, with no human deaths attributed to elephant encounters in the past 30 months, despite the dense population of both humans and elephants.

NCF's programme has played a pivotal role in influencing institutional support for elephant conservation at local levels. By fostering collaboration with forest departments, local governments, and stakeholders, the programme facilitated the adoption of measures aimed at enhancing elephant conservation efforts.

Robust monitoring and evaluation systems were implemented to track progress towards conservation goals and outcomes. The programme monitored elephant population dynamics and observed stable or increasing population trends within targeted areas.

The month of February is the greatest annual season of elephant mobility in the human-dominated Valparai plateau, which borders the Anamalai Tiger Reserve in Tamil Nadu. The herds traverse a patchwork of landscapes, and they come across passing visitors, inquisitive bystanders, and large vehicles. Elephants typically decide to move after dusk, when human activity starts to decline. The presence of calves made it difficult for certain herds to move across tea estates that were dotted with pockets of degraded woodland.

To ensure that there was no negative interaction between humans and elephants, the Tamil Nadu Forest Department staff and the NCF team work tirelessly throughout the day to enable the herd's transit from one forest fragment to another.

*The forest department begins their patrols around 6:30 PM and continues monitoring throughout the night. By 8 PM, most forest department teams have settled in their positions, and a final round of messaging ensures that everyone is aware of each group's location for effective communication. From then until morning, the forest department takes over elephant monitoring duties, allowing NCF team to rest and prepare for the next day's activities. This cycle repeats itself, ensuring comprehensive coverage and effective management of human-elephant interactions throughout the day and night.*



Effective partnerships and collaboration with the Forest department, government agencies, plantation management, and local communities were fostered, leveraging collaborative efforts to maximise conservation impact while minimising duplication of efforts and resource wastage.

Feedback from stakeholders, including local communities, government agencies, NGOs, and other partners, indicated high levels of satisfaction with the NCF's programme. Instances of property damage, crop raids, and human injuries or fatalities significantly decreased, demonstrating the effectiveness of the programme's conflict mitigation strategies.

### c. Efficiency

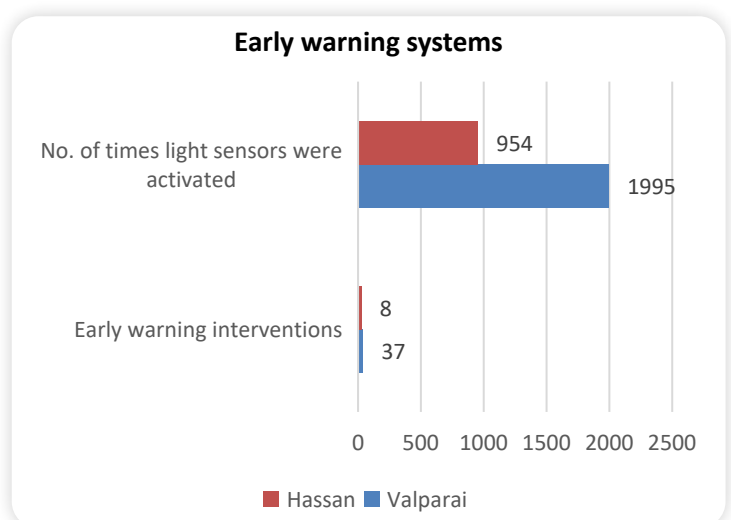
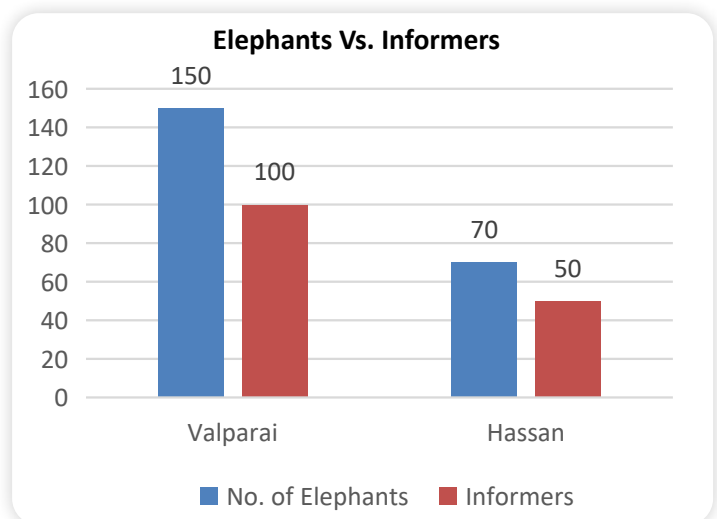
NCF has demonstrated cost-effectiveness in its conflict mitigation measures by strategically deploying resources such as employing watchers and implementing early warning systems to prevent or mitigate human-elephant conflict incidents at a reasonable cost. This efficient resource allocation has ensured optimal conservation outcomes while minimising financial burden.

Efficient data collection methods and systematic analysis of monitoring results informed adaptive management decisions, ensuring that resources were allocated effectively and conservation efforts were continuously optimised.

Through the implementation of early warning systems, economic opportunities were enhanced, and vulnerabilities to human-elephant conflicts were reduced. The heightened level of community involvement and awareness regarding elephant conservation and conflict mitigation measures was evident during stakeholder consultations.

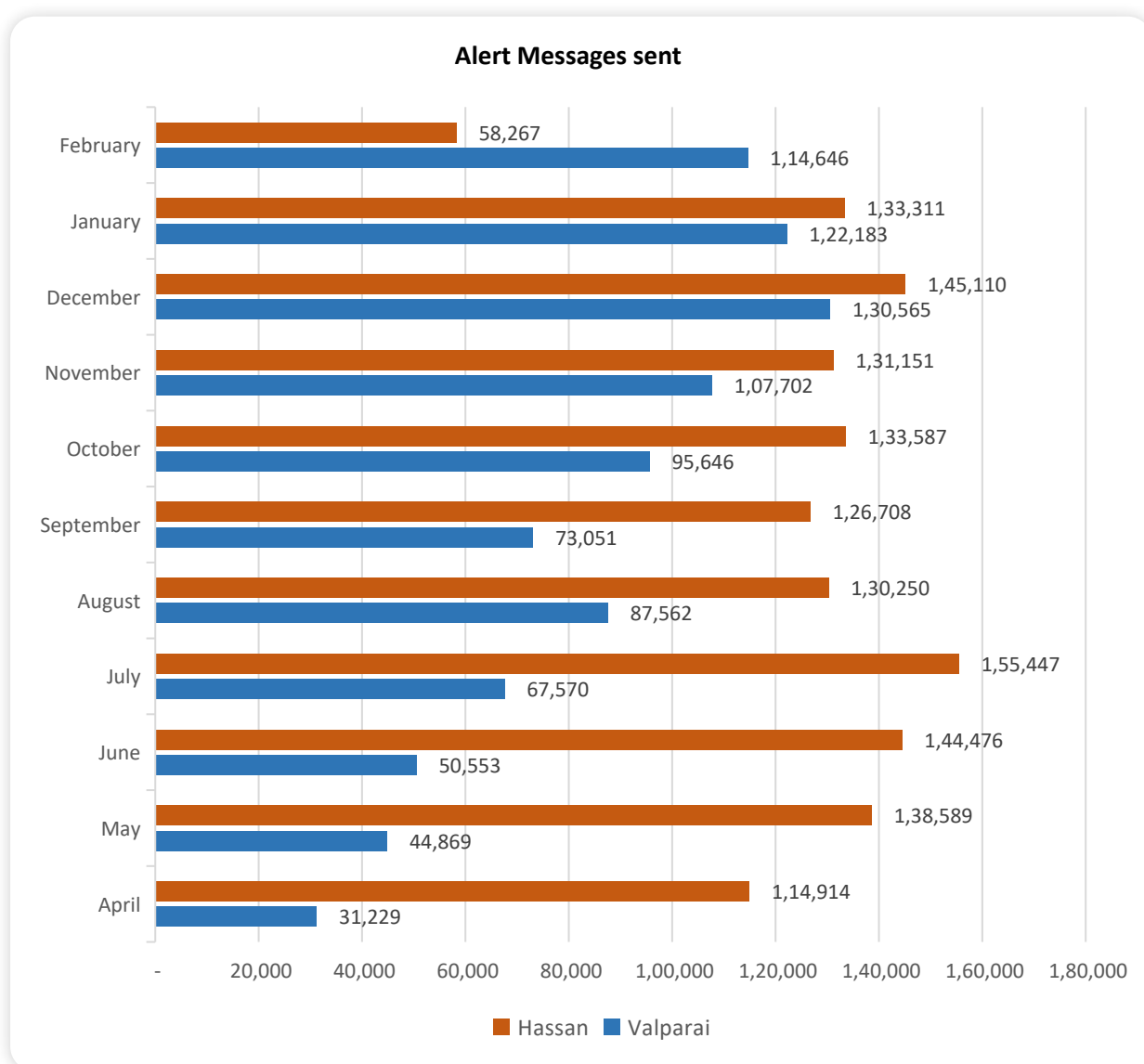
There are around 150 elephants in Valparai and 70 in Hassan. The NCF messaging services to the local communities are efficient.

Decisions regarding message dissemination depend on various factors, including the location of the herd, its behaviour, usage patterns of humans of that space and past experiences with humans and elephants. For instance, in areas where historically elephants have been subjected to chasing or harassment, NCF intervenes more actively to prevent conflicts.



The local communities have been capacitated to inform NCF of elephants movements over phone and these lead to signalling through the alert beacons that have been installed in the programme areas about elephants presence in the particular area.

NCF team strives to provide information promptly as and when they receive it. Ms. Chitra of NCF plays a crucial role in sending out messages instantly. However, there are occasions when NCF choose to hold back on sending messages, especially when they know that the elephant herd is on the move so that an update can be sent when the herd has finished its movement during their journey. It is also for the reason that, during such times, the elephants are usually peaceful, and it's more effective to wait and observe where the herd is headed before sending out messages to areas where people may be present. Rigorous planning and monitoring and understanding elephant needs, facilitated the effective deployment of funds, personnel, and equipment to address key conservation challenges, maximising impact of the programme.



In Vaparai, the elephant season picks up between the months of October and February and peaks around between December when most of the elephants are present in the region. On some occasions when the herd is on the move, multiple alert messages were sent to the communities to alert them about it. During the month of February, the elephants begin to slowly move towards the Protected Areas that surround Valparai. This is why the dip in the number of messages sent in February compared to December.

There is no patterns like Valprai in Hassan. Elephants are seen throughout the year though their number fluctuates monthly or seasonally.

Efficient response times to human-elephant conflict incidents were ensured through the establishment of rapid response teams and the maintenance of a network of trained personnel. This facilitated swift deployment of mitigation measures following conflict incidents, minimising potential damages and enabling timely resolution of conflicts.

*"In February, I received alarming information that an elephant was heading towards a school. Due to the tea estate's fencing, the elephant's path was directed towards the school, leaving me with no choice but to intervene. As I rushed to warn the children and ensure their safety, I inadvertently stepped into a hole, resulting in a twisted right ankle and a ligament tear.*

*Despite the excruciating pain, I knew I had to prioritise the safety of the children. With sheer determination, I persevered, running on my injured leg for half an hour to reach the car. I drove to the school, determined to ensure the children were safely relocated to the other side of the area.*

*The safety and well-being of the children remained my utmost priority, driving me to overcome adversity and fulfil my duty to protect them from harm."* – **Ganesh, NCF**

Furthermore, the programme effectively utilised technology and innovative solutions to enhance efficiency in elephant conservation efforts. The use of drones for aerial surveillance improved data collection and enhanced surveillance and conflict management processes.

*"Thanks to the advanced technology implemented by the NCF's elephant programme, I now have real-time updates on elephant movements wherever there's light. Each night, I receive detailed updates complete with photos and GPS coordinates, allowing me to track the elephants' whereabouts with precision. This invaluable information not only ensures the safety of my people but also helps me plan and manage operations more effectively. Now, I can confidently pay my workers, knowing whether elephants are present in the area or not. It's a game-changer for us, and I'm grateful for the NCF's commitment to keeping us informed and safe.*

*Moreover, the implementation of the NCF's elephant programme has significantly benefited our operations. Previously, we struggled with varying wages for our drivers during night patrols due to increased risks and operational costs. However, with NCF's assistance, we now have access to real-time information about elephant movements, enabling us to optimise patrol schedules and allocate resources more efficiently. The use of drones to provide exact locations further enhances our ability to mitigate risks and manage costs effectively. Consequently, our company has experienced substantial improvements in safety measures and operational efficiency, thanks to the NCF programme."*

– **Manager, BBTD Tea Estate**





## d. Sustainability

The elephant conservation programme's sustainability was evaluated based on its ability to perpetuate positive impacts beyond specific project durations. Demonstrating remarkable sustainability, the programme has effectively preserved elephant populations, bolstered ecosystem health, fostered community engagement, and advocated for supportive policies. Through continuous monitoring, adaptive management, and capacity-building initiatives, the programme has established a solid foundation for ongoing conservation efforts, ensuring the long-term survival and well-being of elephants and their habitats.

Sustainable conflict resolution strategies have been implemented, facilitating peaceful coexistence between humans and elephants. Through dialogue facilitation and proactive measures, the programme has successfully mitigated human-elephant conflicts, addressed root causes of tension, and cultivated harmonious relationships between communities and elephants.

Community engagement and support for elephant conservation have been sustained through inclusive decision-making processes, capacity-building endeavours, and livelihood development projects. Empowered by these initiatives, local communities have become active participants in conservation activities, advocating for sustainable coexistence with elephants.

By forging collaborative partnerships with governmental agencies, NGOs, plantation companies, and other stakeholders, the programme has secured ongoing policy and institutional support for elephant conservation. This collaborative approach has laid a solid foundation for sustained conservation efforts, ensuring the continuity of impactful initiatives in the future.

Establishing robust conservation frameworks, fostering local ownership, and promoting institutional collaboration have been pivotal in laying the groundwork for sustained conservation efforts in the long term. Through these concerted efforts, the programme's legacy continues to benefit present and future generations, safeguarding the welfare of elephants and ecosystems alike.

## e. Social impact:

The elephant programme's social impact is multifaceted, encompassing contributions to community well-being, livelihoods, empowerment, inclusivity, and cultural preservation.

The impact of the elephant program is evidenced by several key indicators. Firstly, lives have been saved through the program's effective monitoring of elephant movements and timely alerts, which have prevented human-elephant conflicts and subsequent casualties. Additionally, the program has protected property by disseminating information and implementing preventive measures to minimize crop raiding incidents and infrastructure damage, thus safeguarding the livelihoods and assets of local communities.

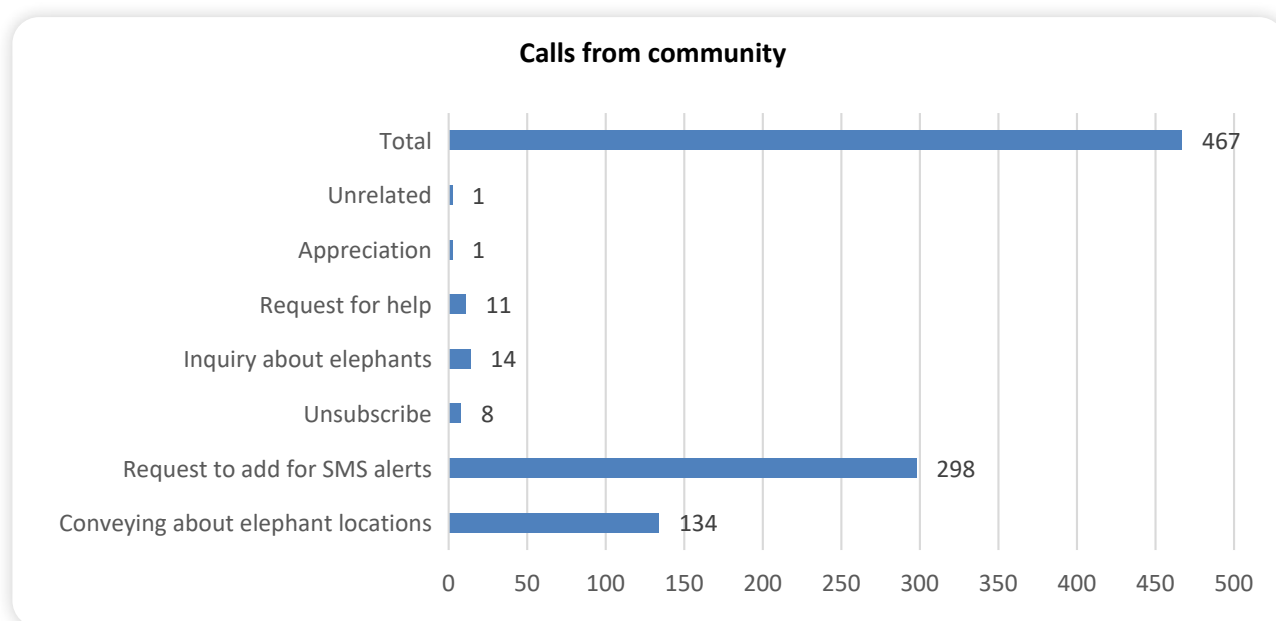
Moreover, the program has contributed to the creation of both direct and indirect employment opportunities, benefiting local communities and stimulating economic activities in the region. Furthermore, the program has resulted in an increase in income and a decrease in expenses for local communities by reducing conflicts and implementing improved agricultural practices.



Valparai serves as a model landscape for successful cohabitation between people and wildlife, setting an example that can be replicated elsewhere. The approach adopted in Valparai emphasises minimal intervention for maximum benefit, recognising the complexities of human-wildlife interactions and the need for sustainable solutions.

The success of Valparai has garnered attention globally, with governments and organisations seeking to replicate its strategies in other regions facing similar challenges. This recognition is a testament to the dedication of the people and supporters who have contributed to making Valparai a beacon of coexistence.

Through active involvement in decision-making processes related to elephant conservation, such as land-use planning and conflict resolution, the NCF programme has empowered community members, leading to increased confidence, and self-reliance. Moreover, the programme's implementation of safety measures, such as early warning systems and community-based response teams, has significantly enhanced community health and safety, reducing the incidence of injuries and fatalities caused by human-elephant conflicts.



The programme has fostered social cohesion and resilience within communities affected by human-elephant conflicts by facilitating dialogue and collaboration among community members. This has strengthened community networks, improved inter-group relationships, and enabled communities to better cope with environmental and socio-economic challenges, ultimately promoting overall community well-being.

## d. RECOMMENDATIONS

Continuous data collection and analysis are essential for identifying emerging threats, evaluating conservation strategies, and informing adaptive management decisions. NCF could raise awareness and promote education about elephant conservation and human-elephant coexistence among school and college students in the programme areas. Targeted educational materials, community outreach programs would instil conservation values and foster a culture of respect and stewardship towards elephants and their habitats.

*"The notion of an "exit programme" from conservation efforts is fundamentally flawed. Government interventions across various sectors, including wildlife conservation, typically do not have exit strategies. Whether it's compensation schemes, healthcare initiatives, or educational programs, ongoing support is essential to address persistent challenges and ensure long-term success.*

*In wildlife conservation, particularly in elephant protection, there is a continuous need for active involvement and sustained efforts. This is because conservation is a dynamic process that requires ongoing adaptation to changing circumstances and emerging threats.*

*Minimising input and encouraging community ownership are indeed important strategies. However, certain aspects, such as understanding elephant behaviour and effectively disseminating information, require specialised knowledge and expertise that may not be readily available within local communities.*

*As for support from organisations like Chola, it's crucial to emphasise the importance of creating modern landscapes that promote coexistence between humans and elephants. This requires collaborative efforts involving governments, scientific institutions like NCF, and local communities. In model landscapes, innovative solutions would benefit both people and wildlife.*

*Overall, ongoing support and collaboration are vital to the success of elephant conservation efforts. By investing in sustainable approaches and fostering partnerships, elephants and humans can thrive together in harmony."*

**–Anand, NCF**

*Passion fuels our team's dedication to making a positive impact on both people and elephants. We deeply understand the importance of our work and value each individual elephant, recognising their unique personalities and the obstacles they face. This understanding drives us to seek solutions, even in the face of adversity.*

*Our commitment is rooted in a profound sense of responsibility and a shared desire to create a brighter future for both humans and elephants. Despite the challenges we encounter, our determination to make a meaningful difference remains unwavering.*

*"While it's reassuring to see stable signs in elephant populations, my primary concern revolves around rainfall patterns, which significantly influence our conservation efforts. Fortunately, we're experiencing increased cooperation from the community, coupled with a growing support network and information sharing.*

*Additionally, the growing presence of government departments is a promising development. Looking ahead, I envision a more active role for the forest department in elephant conservation efforts over the next five years. This shift would enable us to focus more on conducting comprehensive research and implementing innovative strategies.*

*Regarding my personal plans, I remain open to the opportunities and challenges that lie ahead. However, my commitment to elephant conservation remains steadfast, and I will continue to adapt and contribute to this vital cause."*

**– Ganesh, NCF**



## A Tale of Coexistence

*In the serene, verdant hills of a Valparai nestled amidst sprawling tea plantations, life flowed in harmony with nature's rhythm. The villagers had grown accustomed to the gentle giants that occasionally wandered down from the forested slopes. Yet, one extraordinary encounter left an indelible mark on their tranquil existence.*

*It was just another peaceful evening until an unexpected visitor arrived, one that would stir both awe and concern among the villagers. Around 2am, the villagers caught sight of a majestic elephant making its leisurely way through the tea plantation area. Its sheer size commanded respect, yet its gentle demeanour eased any apprehensions the villagers might have harboured.*

*Among those who witnessed this breath-taking sight was Daisy, a humble resident whose home lay near the edge of the plantation. For Daisy and her neighbours, elephants were not uncommon visitors. However, this particular elephant seemed to have a curious affinity for Daisy's dwelling, lingering in her vicinity as if drawn by an unseen force. Despite the initial fascination, worry crept into the villagers' hearts as the elephant began to explore its surroundings with an insatiable curiosity. In its quest for exploration, the elephant wreaked havoc, causing damage to the local ration shop and leaving a trail of broken doors and windows in its wake.*

*Amidst the chaos, Daisy remained steadfast, her concern not only for her two newly purchased two-wheeler parked outside her home but also for the safety of her fellow villagers. With a sense of responsibility, she dialled the numbers of the National Conservation Foundation and the forest department, seeking assistance in managing the situation.*

*The forest officers and the NCF team arrived swiftly, but by then, the elephant, having satisfied its curiosity and hunger by eating rice from the ration shop, had departed from the village. Although its departure marked the end of an eventful night, the memories of its visit lingered in the hearts of the villagers, serving as a poignant reminder of the delicate balance between human habitation and the natural world.*

*The village rallied together, repairing the damages incurred during its brief but impactful stay. Daisy's swift action in contacting the authorities had ensured the safety of both the villagers and the wandering elephant, reaffirming the importance of coexistence and mutual respect between humans and wildlife.*



## Staying Informed and Alert with NCF's Messages

*"As residents of a rural area without television connectivity, staying updated with the latest news and information can often be a challenge. However, thanks to the National Conservation Foundation (NCF), we have found a reliable solution that keeps us informed and alert in our daily lives.*

*Every day, like clockwork, I receive a message sent by the NCF on my phone. These messages not only provide valuable updates on the whereabouts of elephants in our vicinity but also serve as a vital tool for staying vigilant and prepared. Knowing where elephants are present allows me to be alert and take necessary precautions to ensure the safety of myself and my community.*

*Moreover, the NCF team has gone above and beyond in creating awareness on how to manage situations when we encounter an elephant. Through their efforts, we have learned invaluable tips and strategies for safely navigating encounters with these majestic creatures. From maintaining a safe distance to avoiding sudden movements, their guidance has equipped us with the knowledge needed to handle such situations responsibly.*

*In a world where conflicts between humans and wildlife are all too common, the NCF's dedication to creating awareness and providing timely information is truly commendable. Their efforts not only enhance our safety but also promote a culture of coexistence and respect for the natural world."* **Tea estate workers, Valparai**

*"I've always considered myself someone unafraid of the majestic elephants that roam the tea estate where I work. But it's the sleek and elusive leopard that sends shivers down my spine. One particular encounter remains etched in my memory.*

*Picture this: I'm amidst the lush greenery of the tea estate, going about my work when suddenly, I find myself standing mere feet away from a leopard. Its presence was awe-inspiring, yet surprisingly serene. With a gentle brush aside, it continued on its way, leaving me frozen in place.*

*In that moment, time seemed to stand still as I grappled with a mixture of fear and wonder. But as soon as the leopard moved on, I wasted no time in making my own swift departure. It was a testament to the raw power and unpredictability of nature.*

*While elephants may hold a certain awe-inspiring allure, it's the silent prowler of the jungle, the leopard, that truly sends my heart racing. But through encounters like these, I've learned to respect and admire the delicate balance of life in the wild, even as it reminds me of the unpredictability that surrounds us."* **Tea estate worker, Valparai**



## Daily Routine of NCF field team

*"In the mornings, typically around 6 to 6:30 AM, our team sets out from our respective locations to begin our search for elephants. The visibility and weather conditions influence our choice of transportation; if it's unsafe to travel by motorcycles, we opt to carpool. Each team member heads in their own direction, scanning the area for elephant activity.*

*Along the way, we often encounter field officers or managers of the areas we're monitoring. We make sure to update them on our findings as we proceed with our elephant tracking efforts. By 8 to 8:30 AM, we receive a comprehensive list of the forest department's monitoring activities from the previous day. We prioritise following up on these locations to ensure continuous surveillance.*

*Throughout the day, we maintain communication with local networks and inform relevant individuals about elephant movements. Sometimes, our plans need to be adjusted, and routes changed based on emerging information. While our primary focus is on tracking specific elephant herds, we remain flexible and responsive to unforeseen events.*

*There are instances when we may need to divert our attention to address urgent situations, such as when a different herd attempts to cross a road. This dynamic nature of our work means that we must be prepared to adapt quickly to changing circumstances, even if it means deviating from our original plans."* – **Ganesh, NCF**

*"One key understanding we've gained is that elephants, despite their size and strength, are sensitive beings. They prefer tranquillity and do not take kindly to loud sounds or disturbances. As a result, we've made it a practice to leave them undisturbed when they grace us with their majestic presence."* – **Resident, Valparai**

*"Living in close proximity to majestic elephants has its challenges, but thanks to the light sensor installed by the NCF near the local tea shop, we feel a sense of security. This device serves as our guiding light, alerting us to the presence of elephants nearby and allowing us to navigate the night with confidence. It's truly been a game-changer for us, especially as we work in the labour quarters and often need to travel during night-time hours.*

*The elephants, while undoubtedly magnificent creatures, have occasionally caused damage to our ration shops, feeding on guavas, plantains, and even rice. However, the NCF team's unwavering support has been instrumental in helping us mitigate these challenges. Their timely messages and updates about elephant movements have enabled us to take necessary precautions and minimise potential encounters, ensuring the safety of both the villagers and the wandering elephants.*

*Moreover, we cannot overlook the invaluable assistance provided by the forest department. Their proactive efforts in informing us about elephant movements have further enhanced our ability to coexist harmoniously with these gentle giants.*

*As proud inhabitants of this village, born and raised amidst the lush greenery of our surroundings, we are deeply committed to preserving the delicate balance between human habitation and the natural world. We recognise that the increasing presence of elephants on the mainland is largely due to encroachment into their natural habitat, and it is our collective responsibility to address this issue with compassion and understanding."* – **Star, Velmurugan, and Chinna Dorai**



## Annexures

### Details of NCF Team members

Sl. No.	Name	Role	No. of years at NCF
1	M. Ananda Kumar	Overall project activities in Valparai and Hassan. Involved in the data analysis, report writing, and presentations to local communities, government agencies, and scientific and conservation community at national and international conferences	22
2	Ganesh Raghunathan	Project execution in Valparai. Involved in data compilation and summaries, report writing, communicating with local communities, outreach activities, training frontline staff of the forest department, help in formulating conflict mitigation measures for the forest department presentations to local communities and forest department officials. Also involved in communicating with the scientific and conservation community over national and international platforms	13
3	Satish Kumar	Involved in attending to technical faults of the alert light beacons in Valparai. Installation of alert light beacons in strategic locations, training selected residents in the operation of alert light beacons, involved in the collection of mobile numbers of people who want to receive SMS alert systems.	
4	Chitra Arumugham	She is involved in sending alerts to people, data maintenance, and preparation of summaries of SMS delivery reports and light operations. She works closely with the women self-help groups and posting alerts in various Whatsapp groups in Valparai	
5	Daniel Raj	Involved in daily tracking of elephants and monitoring conflict incidents and documenting different herds on the plateau	1
6	Prakash	Involved in daily tracking of elephants and monitoring conflict incidents and documenting different herds on the plateau	8
7	Rajkumar	Involved in daily tracking of elephants and monitoring conflict incidents and documenting different herds on the plateau	6





Sl. No.	Name	Role	No. of years at NCF
8	Nisar Ahamed	Primary liaison between the team and forest department, planters, farmers, and residents of Hassan. He is actively involved in monitoring elephant movements, installation, and maintenance of alert lights and display boards. He is involved in the systematic documentation of the elephant herds and individuals in 750 sq. km of Hassan. He helps the forest department in radio collaring of elephants.	7
9	Deepak Bhat	Involved in elephant tracking and identification, outreach programmes such as street plays, interaction meetings, and interaction with local government bodies.	9 months
10	Nandini	She is involved in sending alerts to people, using SMS alert systems and Information boards in Hassan. She also enters data on elephant locations and demography, and operations of information boards.	2
11	Pradeep Kumar	Involved in daily tracking of elephants, monitoring conflict incidents and documenting different herds on the plateau	3
12	Velmurugan	Involved in daily tracking of elephants, monitoring conflict incidents and documenting different herds on the plateau	1.5
13	Mahesh	Involved in daily tracking of elephants, monitoring conflict incidents and documenting different herds on the plateau	1
14	Mahesh Hoskoppalu	Involved in daily tracking of elephants and monitoring conflict incidents and documenting different herds on the plateau	1
15	Jaishankar	Involved in daily tracking of elephants and monitoring conflict incidents and documenting different herds on the plateau	2.5

## Annexures 2: Details of Trainings conducted by NCF

### Location: Valparai

Month	No. of awareness programs conducted	Target audience
November	1	Estate workers
December	4	Forest Department frontline staff
December	1	Students
December	2	Estate workers
January	1	Plantation management
January	1	Forest department officials
January	1	Naturalists
February	1	Students
February	2	Forest trainees
March	2	Forest trainees
March	3	Estate workers
March	1	Business people

### Location: Hassan

Month	No. of awareness programs conducted	Target audience
September	1	Sakleshpur Coffee planters' group
October	1	Stakeholders including forest department officials and coffee planters
October	12	Covered 12 central villages for farmers, coffee planters, students, forest department staff, and gram panchayat members
October	1	Forest Department state officials, members of the Hassan District Planters Association
December	1	Karnataka Forest Department, Ramnagara, Training for Rapid Response Teams
December	1	Helping Karnataka Forest Department officials in the management of conflicts in Chikkamagalur Forest Division by conveying the project results.
February	1	Junior college and high school students, teachers, and forest department staff
March	1	Gram Panchayat members
March	1	High school students



## 8. Climate change, fishing and Nearshore marine ecosystems

Location: Lakshadweep Archipelago

### 1. Introduction to Lakshadweep

Lakshadweep Islands, located off the southwestern coast of India, constitute a group of 36 coral islands scattered across the Arabian Sea. These islands, covering a total area of approximately 32 square kilometers, are known for their pristine beaches, diverse marine life, and vibrant coral reefs. The name “Lakshadweep” translates to “a hundred thousand islands” in Malayalam, although the actual number is far fewer. Despite their small size, the Lakshadweep Islands hold immense natural beauty and cultural richness, making them a unique destination for travelers seeking tranquility and adventure amidst the azure waters of the Arabian Sea.



*Lakshadweep-map*

The islands are inhabited by a mix of cultures, with a predominant Muslim population. Malayalam is the primary language spoken, reflecting the influence of Kerala, the neighbouring state. The economy of Lakshadweep relies heavily on fishing, coconut cultivation, and tourism. Traditional crafts such as coir making and boat building also contribute to the local economy. Tourism plays a significant role in the islands’ economy, attracting visitors with its picturesque landscapes, clear turquoise waters, and opportunities for activities like snorkelling, scuba diving, and sailing. Agatti, Bangaram, and Kadmat are among the popular tourist destinations, offering luxurious resorts and serene beaches.

The islands are also known for their ecological significance, hosting a variety of flora and fauna, including several endangered species. Efforts are underway to preserve the delicate ecosystem through conservation initiatives and sustainable tourism practices.



## The coral reef & NCFs role

The coral reefs around Lakshadweep are renowned for their biodiversity and ecological significance. However, they face several challenges that threaten their health and sustainability.

Rising sea temperatures due to climate change pose a significant threat to coral reefs worldwide, including those in Lakshadweep. Increased temperatures can lead to coral bleaching, where corals expel the symbiotic algae living in their tissues, causing them to turn white and become more vulnerable to disease and death. As the oceans absorb more carbon dioxide from the atmosphere, they become more acidic. This can hinder the ability of corals to build their calcium carbonate skeletons, essential for reef structure and growth.

Pollution from various sources, including agricultural runoff, sewage, and plastic waste, can degrade water quality around the islands. Excess nutrients from pollution can lead to algal blooms, which smother coral reefs and deprive them of sunlight. Unsustainable fishing practices, such as blast fishing and overfishing of herbivorous fish that control algae growth, can disrupt the delicate balance of coral reef ecosystems. Without these key species, coral reefs become more susceptible to algal overgrowth and degradation. While tourism provides economic benefits to the region, it also brings challenges such as coastal development, anchor damage, and physical disturbance to coral reefs from snorkeling, diving, and boating activities. Without proper management, tourism can contribute to reef degradation.

Understanding these issues, NCF has made several efforts to address these issues through its coral reef monitoring programs, and public awareness campaigns. By mitigating the impacts of climate change, reducing pollution, and promoting sustainable tourism and fishing practices, NCF envisions that they could work together with the people of the island to protect and preserve the valuable coral reefs of Lakshadweep for future generations.



*Coral Reef*



## 2. Stakeholders consulted

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The main stakeholder for this project is the marine ecosystem around the islands of Lakshadweep. The other human stakeholders of the project include

- a. The NCF team
- b. The fishing community within the islands
- c. The government
- d. Schools & educational institutions
- e. Forest Department
- f. Diving School Instructors

## 3. Methodology

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The Social Auditors of the Social Audit Network Team, Mrs. Latha Suresh Ms. Neeta Nair, conducted the social impact assessment for the Oceans project supported by Chola during the 2022-23 period within the purview of their respective projects and initiatives.

The engagement commenced with a Zoom call facilitated between the SAN Team and Mr. Rohan Arthur. These discussions encompassed various aspects such as project objectives, strategies, challenges encountered, achievements, and future plans. Such meetings are crucial for fostering collaboration, aligning goals, and ensuring clarity of vision among stakeholders.

Subsequently, to gain firsthand insights and evaluate the on-ground implementation of the projects, the SAN Team undertook field visits to the program sites located in Kavaratti and Agatti of the Lakshadweep archipelago. Mixed methods of evaluation techniques like observation, data collection, and interviews with relevant stakeholders were conducted at the field. These field visits, which occurred from March 22 to March 26, provided an invaluable opportunity for the team members to observe the initiatives in action, interact with project beneficiaries, local communities, and stakeholders, and assess the impact of the interventions.



## 4. Report on Performance

The following are the initiatives conducted by NCF in the Lakshadweep archipelago & the west coast of India during the reporting period

Target/ Identified Activities	Activities implemented (during the reporting period)	Geography
Tracking long-term changes to reef ecosystem health and reef accretion potential	Evaluate the Reef Accretion Potential (RAP) of coral reefs in Kadmat, Kavaratti and Agatti using census-based Reef Budget methodologies to determine the ability of Lakshadweep reefs to maintain reef frameworks and protect atoll islands.	Lakshadweep archipelago
	Scientific and conservation outputs (peer reviewed manuscripts and media reports).	Lakshadweep archipelago
Determining the drivers of recent commercial reef fishery	Monitor changes in commercial reef fishing in Lakshadweep, including evaluating the longer- term impacts of Covid-19 on the emerging fishery.	Lakshadweep archipelago
	Scientific and conservation outputs (peer reviewed manuscripts and media reports).	Lakshadweep archipelago
Evaluating freshwater budgets and land stability	Carry out structured household-level freshwater consumption surveys on three atolls (Kadmat, Kavaratti and Agatti) to determine per-capita usage of freshwater.	Lakshadweep archipelago
	Measure changes to soil moisture through time, to determine overall groundwater consumption by coconut plantations.	Lakshadweep archipelago
	Detailed inundation maps of Lakshadweep islands based on high-resolution digital elevation data	Lakshadweep archipelago
	Scientific and conservation outputs (peer reviewed manuscripts and media reports).	Lakshadweep archipelago



Target/ Identified Activities	Activities implemented (during the reporting period)	Geography
Evaluating the impacts of climate change on island habitability	Use an expert-based system to model the potential impact of climate change on the sustained habitability of Lakshadweep atolls.	Lakshadweep archipelago
	Scientific and conservation outputs (peer reviewed manuscripts and media reports).	Lakshadweep archipelago
	Use social media campaigns to increase knowledge of marine biodiversity and climate change in Lakshadweep communities. These will be conducted in Malayalam and English for the widest impact.	Lakshadweep archipelago
Use genetic tools to identify population boundaries of commercially important fish species along the west coast of India	DNA sequencing and analysis using Single Nucleotide Polymorphism (SNP) techniques to determine if they come from the same genetic population or represent separate genetic populations across the coastline.	West coast of India
	Scientific and conservation outputs (peer reviewed manuscript, policy brief, media reports).	West coast of India
Explore if genetic tools can be used to determine the vulnerability of individual fish populations to over fishing.	Allele frequency analysis to determine if samples collected in Objective 1.1 above belong to populations that have undergone significant bottlenecks.	West coast of India
	Scientific and conservation outputs (manuscript, policy brief and media reports).	West coast of India

The initiatives conducted in the Lakshadweep archipelago during the reporting period aimed to comprehensively understand and address various aspects of reef ecosystem health, reef fishing dynamics, freshwater budgets, land stability, habitability under climate change, communication with local communities, and the genetic assessment of fish populations. These efforts involved extensive data collection, analysis, and scholarly research, resulting in valuable insights into the challenges facing marine ecosystems. Scientific outputs, including peer-reviewed manuscripts and media reports, contributed to the understanding of ecological dynamics and informed conservation strategies. Furthermore, active engagement with local communities through social media campaigns, educational outreach, and cultural integration aimed to foster awareness and stewardship of the islands' natural heritage. Additionally, genetic studies on fish populations provided crucial information for fisheries management policies. These multifaceted initiatives underscored a concerted effort towards sustainable management and preservation of the Lakshadweep archipelago's marine resources in the face of environmental changes.



## a. Tracking long-term changes to reef ecosystem health

An analysis of long-term trends in ocean temperatures revealed a troubling pattern of consistent increase over the years, with an incremental rise in temperature documented between 1981 and 2022. Furthermore, the NCF conducted an extensive study on the long-term responses of various coral species, with a specific focus on the coral reefs within the Lakshadweep Archipelago. This research aimed to elucidate the factors influencing coral resilience in the face of recurrent mass mortality events.



*Tracking long-term changes to reef ecosystem health*

A significant aspect of this research is encapsulated in a forthcoming paper titled “Recovery time and local environment determine long-term coral responses to recurrent mass mortalities in the Lakshadweep Archipelago,” which had been submitted to the *Ecography Journal* for publication. This paper not only contributed to the scientific understanding of coral reef dynamics but also underscored the critical role of local environmental conditions in shaping coral responses to stressors, thereby informing targeted conservation and management strategies in vulnerable marine ecosystems.

**The High-Resolution Reef Accretion Potential:** Activities implemented during the reporting period included evaluating the Reef Accretion Potential (RAP) of coral reefs in Kadmat, Kavaratti, and Agatti using census-based Reef Budget methodologies to determine the ability of Lakshadweep reefs to maintain reef frameworks and protect atoll islands. The Reef Accretion Potential was measured for three atolls, and the analysis was completed. Future studies were planned. This study operated on the theory that net accretion equals accretion by algae minus erosion by parrotfish and internal bioerosion. This approach was crucial for understanding how coral reefs grew and maintained their structure over time, as it considered both constructive (accretion) and destructive (erosion) forces. The findings indicated that net carbonate production was already lower than optimum. This suggested that the coral reefs in these locations were not growing at the pace necessary to support the ecological balance of the ocean and support the island. This could have had significant implications for the biodiversity of these reefs and their resilience to environmental changes. Coral reefs are known for their rich biodiversity and for providing protection and habitat to many marine species. A decrease in their growth rate could have affected not only the marine life dependent on them but also the human communities that relied on reefs for food, income, and protection from storms.

Scientific and conservation outputs such as peer-reviewed manuscripts and media reports were generated. Two MSc dissertations were submitted, and two papers from the RAP work (one on RAP values and another on parrotfish bioerosion) were sent to peer-reviewed journals. Reviews were awaited. The completion of two MSc theses by Mr. Wenzel Pinto and Mr. Farai Patel on this subject indicated a scholarly effort to understand and document the challenges facing these coral reefs. Such academic work was essential for building a foundation of knowledge from which solutions could be developed. Addressing the issues identified in their studies could have involved measures to reduce the impacts of bioerosion and improve conditions for coral accretion, thereby enhancing the resilience of coral reefs against climate change and other stressors.

*Climate change has had nefarious effects not just on land. It affects the oceans and marine life as well. There have been several instances of coral bleaching which is a major cause for worry. Through our work, we aim to comprehend the dynamics of change that accompany the recurrent mass bleaching events in the Lakshadweep atoll reefs. A predictive reef monitoring system is now in process to help us understand this better. Through research, advocacy, and community engagement, NCF wants to understand and address the issues plaguing Lakshadweep's coastal communities. - Rohan Arthur*

*My study on the erosion of coral reefs in Lakshadweep caused by parrot fish is crucial for assessing the overall erosion rates. Parrot fish, along with internal microorganisms and algae, significantly contribute to this erosion. Understanding these dynamics is essential for estimating the rate at which the reefs will degrade and the consequent impact on the island. The reefs act as a protective barrier against large waves and provide essential habitats for marine life, benefiting fishermen and supporting the local community. An understanding of these processes is vital for gauging the sustainability of fishing resources and community livelihoods. The study also feeds into our island habitability program- Wenzel*

## b. Determining the drivers of recent reef fishing

During the reporting period, activities aimed at determining the drivers of recent commercial reef fishery in the Lakshadweep archipelago were diligently pursued.

**Monitoring Changes in Commercial Reef Fishing:** Efforts were focused on monitoring changes in commercial reef fishing activities, with a specific emphasis on evaluating the longer-term impacts of Covid-19 on the emerging fishery. Fishery data spanning several years were systematically collected and analyzed. Data on fish catch, readily available since 2014, provided a baseline for comparison. Subsequently, data was collated by 2 scientists on fish catch trends post Covid-19. An analysis was used to identify the discernible shifts in fishing dynamics.



*Monitoring Changes in Commercial Reef Fishing*

**Scientific and Conservation Outputs:** Simultaneously, activities were geared towards generating scientific outputs to contribute to the understanding of reef fishery dynamics. This involved the preparation of peer-reviewed manuscripts and media reports based on rigorous research and analysis. While discussions surrounding a peer-reviewed manuscript were ongoing, significant progress was made during the reporting period. The analysis of several years' worth of fisheries data was completed, providing valuable insights into the drivers of commercial reef fishing in the region. As a result, the first draft of a peer-reviewed manuscript was prepared, marking a significant milestone in the project's progression.

The achievement during this period includes the successful completion of data collection and analysis phases, paving the way for deeper insights into the factors influencing commercial reef fishery in the Lakshadweep archipelago. Despite the challenges posed by the Covid-19 pandemic, the project remained on track, with activities being carried out as planned. Two Master of Science theses were completed as part of this research endeavor, led by Ms. Siddhi Jaishankar and Ms. Radhika Nair. These theses delved into the specific ecological dynamics of reef erosion caused by sea urchins, focusing on the species *Echinostrephus molaris*. They explored factors such as population dynamics, habitat preferences, feeding behavior, and the extent of their impact on coral reefs in the studied regions. These theses provided valuable insights into the mechanisms driving reef erosion and the ecological consequences thereof.



*It is vital to look at what's happening with commercial fishing and local fish consumption in places like Lakshadweep. In Lakshadweep, there are no fixed regulations for sustainable fishing and each inhabited island has a different way of working. Hence, a study that covers all the islands' gradients is required. - Radhika Nair*

*Up until a few years ago, Lakshadweep primarily concentrated its commercial fishing efforts on tuna, employing a fishing method known as "pole and line." This technique is sustainable and less harmful to marine ecosystems. By focusing on these offshore species, the fishing industry in Lakshadweep placed minimal pressure on coral reefs, thus aiding in the preservation of healthy populations of reef fish crucial for near-shore coral reef ecosystems. - Rajeshwari*

### c. Freshwater budgets and land stability

During the reporting period, several activities aimed at evaluating freshwater budgets and land stability in the Lakshadweep archipelago were undertaken.

Structured household-level freshwater consumption surveys were conducted on three atolls, namely Kadmat, Kavaratti, and Agatti. These surveys aimed to determine per-capita usage of freshwater. Data was collected through interviews conducted on the islands of Kadmat, Kavaratti, and Agatti. There was no existing information on household-level freshwater consumption at the beginning of the project.



*Freshwater Budget Tracking*

Efforts were made to measure changes in soil moisture over time to ascertain overall groundwater consumption by coconut plantations. Three Instruments for measuring soil moisture were procured. The instruments were tested during the reporting period, indicating progress in instrument readiness.

Another activity involved the preparation of detailed inundation maps for the Lakshadweep islands based on high-resolution digital elevation data. Initial inundation maps were prepared for all the islands in the archipelago. While there was no information on projected inundation due to sea level rise at the project's inception, initial maps were created and are currently undergoing refinement.

While data collection on freshwater budgets from the three atolls of Lakshadweep was achieved, the initial analysis of this data was still underway at the end of the reporting period. Thus, no peer-reviewed manuscripts or media reports were generated during this time frame.

*Because of the salinity of the surrounding water on the island, there exists what is known as a freshwater lens, which is essentially a layer of fresh water that sits atop the saline water. This freshwater is safe for drinking and consumption. The depth of this lens varies depending on the distance from the sea. It is essential to measure the levels of the freshwater lens at different points on each island and monitor them closely to comprehend how much longer each island will retain access to freshwater. This will essentially tell us how habitable the island will be in the next five, ten or fifteen years. - Siddhi Jaishankar*

## Community Speak

*Agatti and Kavaratti are beautiful islands, but people there have a big problem: finding clean water to drink. Even though they are surrounded by the sea, they can't drink that water. It is a tough situation that needs attention so everyone can have the water they need.*

*The water problem in Agatti and Kavaratti shows us how important it is to take care of our environment. Without enough clean water, life gets hard. We need to find smart ways to use what we have so everyone can have enough.*

*NCF team is doing something great in Agatti and Kavaratti. They've brought in special sensors to help measure the levels of drinking water wisely. It's a good step forward, to understand using the water sensors what we can do to help solve big problems like not having enough water.*

### d. Studying the Island's Habitability

The initiative focused on evaluating the impacts of climate change on the habitability of the Lakshadweep archipelago. The studies were conducted through a multi-faceted approach encompassing expert-based modelling, scientific research, and community engagement initiatives.

**Expert-based System for Modeling Impact:** The initiative used an expert-based system to model the potential impact of climate change on the sustained habitability of Lakshadweep atolls. This involved gathering data and insights from specialists in relevant fields to develop a framework specifically tailored for the unique environmental conditions of the Lakshadweep islands. This framework considered five drivers of habitability. The initiative encompassed various aspects, including research on sea urchins, a long-term study conducted focusing on reef growth measurement, examination of freshwater influence, and the assessment of sediment generation by different erosive agents such as sea urchins, parrotfish, and gastropods. Additionally, the initiative addresses concerns regarding coral damage induced by construction activities such as airport construction. An international conference is also being planned.

**Scientific Outputs:** Peer-reviewed manuscripts and media reports were produced to document the findings and implications of the research. A manuscript was conceptualized, which delved into the scientific assessments of habitability and the impacts of climate change on the Lakshadweep archipelago. These outputs aimed to contribute to the scientific understanding of the island's ecosystems and inform conservation strategies.



*Studying the Island's Habitability*

#### Siddhi Jaishankar

*Sea urchins are enigmatic creatures. These enigmatic creatures, particularly *E. molaris*, wield immense influence over reef health through their bio-erosive activities. By understanding the factors shaping their abundance and distribution, we gain critical insights into the delicate balance of coral reef ecosystems. This knowledge not only enhances our ability to mitigate reef degradation but also underscores the urgency of proactive conservation efforts in preserving these underwater wonders for generations to come."*





### Mr Jaleel, Fisherman, aged 49, Kavaratti

*I spent a large part of my life immersed in the rhythm of the sea; this is how it is for most people in Lakshadweep where fishing isn't just a livelihood but a cherished way of life. Born and raised in this environment, my upbringing resonates deeply with the essence of our cultural and social fabric. I've witnessed firsthand the challenges faced by fishermen, from the instability caused by administrative changes to the shrinking opportunities in our evolving economy. These trials demand resilience and perseverance as we navigate the unpredictable waters of our livelihood.*



*Traditional fishing practices hold a special place in my heart, evoking memories of simpler times when nets and buckets were our tools, and the sea was our provider. However, concerns about environmental degradation weigh heavy on my mind. From coral reef protection to combating plastic pollution, safeguarding our ecosystems is imperative for the well-being of future generations. Yet, amidst these challenges, there is hope. The role of organizations like NCF cannot be overstated.*

### Rajeshwari, Social Researcher, NCF

*Exploring marine ecosystems and comprehending their impact requires us to consider not only the ecological factors but also the intricate interplay of fishing dynamics, societal influences, and community behavior. It's crucial to understand how people perceive the atoll, the inherent dangers it poses, and the perceived reasons behind declining fish catches. Additionally, we need insight into what motivates future generations to continue fishing and how the community perceives the island's future. By integrating sociological perspectives with the findings of marine research, we can identify the changes that warrant attention and develop informed strategies for sustainable management.*

## e. Communicating marine biodiversity and climate change to local communities

Recognizing the paramount importance of engaging local communities, the initiative implemented social media campaigns to raise awareness and understanding of marine biodiversity and climate change among Lakshadweep communities. Leveraging platforms like Instagram and WhatsApp, these campaigns targeted a broad audience and were conducted in both Malayalam and English to maximize impact.

As part of the communication strategy, NCF developed comic strips showcasing facts about the Lakshadweep islands. These strips were compiled into a book titled 'Melezhum Keezham' and served as accessible and engaging tools to convey information about marine biodiversity, climate change impacts, and research findings to island communities. By presenting complex concepts in a visually appealing format, the initiative aimed to foster greater understanding and awareness among local residents. 300 copies of the book were made available in both English and Malayalam languages but only 200 were distributed. The beneficiaries were predominantly fishermen and school teachers, employees of the fisheries board.

Furthermore, the initiative aimed to promote an "island ethic" by integrating ecological identity into the history, culture, and society of the islands. Additionally, a series of documentaries titled 'Ways of Life' are in production, with the first installment, 'Chooru', ready for release.



*The documentary “Choorā” holds a profound purpose, serving as a heartfelt tribute to the fishermen community within Lakshadweep. Through the lens of this 15-minute film, the story of their lives, traditions, and invaluable contributions to their ecosystem are woven together, highlighting their resilience, wisdom, and symbiotic relationship with the surrounding marine environment. By delving into the intricacies of their daily existence, “Choorā” seeks to celebrate the essence of the island, fostering a deeper understanding and appreciation for their culture while also shedding light on the importance of conservation efforts in preserving the delicate balance of coastal ecosystems. Choorā will be the first of the documentaries.*

**- Rohan Arthur- Director, NCF**

## f. Understanding Population Boundaries of Fish

The project aimed to utilize genetic tools to identify population boundaries of commercially important fish species along the west coast of India. By employing DNA sequencing and analysis techniques, particularly Single Nucleotide Polymorphism (SNP) analysis, the project sought to determine whether these species belonged to the same genetic population or represented distinct genetic populations across the coastline. Additionally, it aimed to produce scientific and conservation outputs, such as peer-reviewed manuscripts and policy briefs, to contribute to informed decision-making in fisheries management. Samples of commercially important fish species were collected along the west coast of India.

The project successfully completed genetic analysis for all collected fish samples, marking a significant achievement towards understanding the population boundaries of commercially important species along the west coast of India. Additionally, the submission of the policy manuscript to the international peer-reviewed journal “Fish and Fisheries.” represented a crucial step in disseminating findings and informing fisheries management policies.

*If we want any shot at saving coral reefs, we need to get real about what’s happening with fishing. We need to understand how much fish is being caught and eaten locally, and how that is affecting the reefs. It’s only by knowing the full story that we can start making smart moves to protect the island. - Radhika Nair*

## g. Explore if genetic tools can be used to determine the vulnerability of individual fish populations to over fishing.

Efforts were undertaken to explore the potential of genetic tools in assessing the vulnerability of fish populations to overfishing along the West coast of India. Initial steps included plans for allele frequency analysis to discern if collected samples had undergone significant bottlenecks, with communication established with experts from the University of Edinburgh for collaboration. Additionally, data analysis was underway to produce scientific outputs, including manuscripts, policy briefs, and media reports. Notably, research findings were presented at three international conferences: ECSA59 in Spain, ICYMARE in Germany, and SCCS in India, contributing valuable insights to the global discourse on fisheries management strategies.



## 5. Evaluation of the program using the REESS Framework

The REESS Framework provides a structured approach to evaluating the effectiveness and alignment of programs, such as the one conducted by NCF and Chola. It comprises five key components: Relevance, Effectiveness, Efficiency, Sustainability, and Social Impact.

### a. Relevance

The program stands as a frontrunner in the realm of environmental conservation and sustainable development, addressing pressing issues such as coral reef degradation, overfishing, and climate change impacts on island ecosystems.

**Need for the Program:** Lakshadweep's coral reefs face escalating threats from climate change, including rising sea temperatures and ocean acidification, exacerbating coral bleaching and degradation. Human activities such as overfishing, pollution, and unregulated tourism further compound these challenges, endangering the resilience of reef ecosystems. The Coral reefs also hold profound cultural significance for the indigenous communities of Lakshadweep, shaping traditions, spiritual beliefs, and cultural practices. Preserving these reefs is essential not only for safeguarding cultural heritage but also for maintaining social cohesion and identity. The program addresses all these pressing environmental concerns, overfishing, freshwater management, and the impacts of climate change on island ecosystems. These issues are vital for the sustainability of marine ecosystems and the livelihoods of communities dependent on them.

**Beneficiaries' Receptivity:** The program's focus on engaging local communities in awareness campaigns and educational initiatives demonstrates a commitment to involving stakeholders directly affected by environmental changes. By communicating scientific findings in accessible formats and involving communities in conservation efforts, the program fosters a sense of ownership and empowerment among beneficiaries.



*Beneficiary responsiveness*

#### Fishermen speak..

*The coral reefs used to be teeming with vibrant colours and life. Now, they're fading away before our eyes.*

*Without larger boats, we're limited in our ability to reach deeper waters where the fish populations thrive.*

*The decline in fish stocks is a slow threat to our livelihoods.*

**Unavailability of Research in India:** The program fills crucial gaps in research related to marine biodiversity, climate change impacts, and fisheries management, particularly in the context of the Lakshadweep archipelago and the west coast of India. By conducting long-term, extensive studies and generating scientific outputs, the program contributes valuable data and insights to the existing body of research.





## Community Speak...

*Educating the younger generation about the importance of protecting our oceans is essential for creating lasting change.*

*The government needs to take action now before it's too late. Our island's future depends on something significant done to handle these issues.*

**UN SDG Mandate:** The program directly contributes to several United Nations Sustainable Development Goals (SDGs), including Goal 14 (Life Below Water) and Goal 13 (Climate Action). By promoting marine conservation, sustainable resource management, and community engagement, the program supports international efforts to achieve these SDGs.

**Government of India's Mandates:** The program aligns with the Government of India's mandates on environmental conservation, sustainable development, and climate change adaptation. By conducting research, generating scientific knowledge, and implementing conservation measures, the program supports national initiatives aimed at protecting natural resources and biodiversity.

**NCF's Mandate:** As an organization dedicated to wildlife conservation and environmental research, NCF's mandate inherently aligns with the objectives of the program. By undertaking interdisciplinary research, collaborating with local communities, and advocating for policy changes, the program contributes to the protection of ocean ecosystems.

**Chola's Mandate:** The program's emphasis on understanding and mitigating the impacts of climate change on island ecosystems resonates with the Chola's Mandate, which emphasizes the importance of environmental sustainability and resilience. By addressing factors such as coral reef health, fisheries management, and freshwater availability, the program upholds the principles of sustainable development advocated by the Chola's Mandate.

## b. Effectiveness

The collaboration between the Nature Conservation Foundation (NCF) and Chola has the potential to significantly enhance conservation efforts in the Lakshadweep archipelago by leveraging expertise, sharing resources, expanding reach, fostering innovation, engaging local communities, and promoting long-term sustainability.

**Conducting Evidence-Based Research:** The organization conducted robust scientific research, evidenced by the submission of peer-reviewed manuscripts. Spanning various aspects such as long-term analysis of reef ecosystems, drivers of reef fishing, freshwater budgets, and genetic assessment of fish populations, these studies contributed significantly to scientific understanding and conservation efforts in the Lakshadweep archipelago. Presenting research findings at international conferences further underscored the program's commitment to advancing global discourse on marine conservation.



### Fishermen speak..

*NCF's research team is very proactive. They have been working here for over seven years and we see them diligently diving in the waters. We don't know what exactly they do but we know they want to help us fishermen and our island.*

### Fishermen speak..

*Through the support of NCF, we fishermen gain valuable insights into the problems faced by coral reef. This knowledge is indispensable as coral reefs protect our ocean.*

*NCF's team has been very proactive and has done a lot of research in understanding the problems faced by our marine ecosystems. As fishermen, we rely on healthy catch. We are happy that the team is working on this.*

**Pioneering Research Studies:** In working on pioneering studies, NCF addressed critical gaps in understanding within marine conservation. From analyzing long-term trends in coral reef health to evaluating reef accretion potential and exploring genetic tools for assessing vulnerability to overfishing, the program demonstrated a commitment to pushing the boundaries of scientific inquiry.

Upon recognizing that sea grass depletion was attributed to the influx of turtles, six sea grass enclosures were established. These enclosures effectively deterred turtles, leading to a noticeable increase in sea grass growth, thereby bolstering the marine ecosystem. This initiative garnered praise from the Fisheries board, prompting them to implement similar enclosures of their own.

*After identifying the cause of that sea grass depletion was due to the influx of turtles which eat the sea grass, six enclosures were established. These enclosures are cage like structures built of iron rods in small patches of land in the sea-bed on the lagoon. The turtles cannot enter these enclosures. We have found a significant increase in sea grass growth within the enclosures proving the point that turtles which have increased in numbers here are depleting the sea grass in the marine ecosystem here. We also found sea grass growing in the areas outside the enclosures. This effort received commendation from the Fisheries board, prompting them to adopt similar enclosures. They have now laid a few enclosures in the other side of Agatti. - Wenzel*



*Sea Grass Enclosure - Pioneering research initiatives*

**Providing Avenues for Planning Island Habitability:**

Utilizing expert-based modeling and comprehensive ecological assessments, NCF provided insights into the potential impacts of climate change on the habitability of Lakshadweep atolls. The program is aimed to offer crucial information for policymakers to develop strategies aimed at safeguarding the resilience and sustainability of island habitats.

**Understanding Threats to the Reef:** Through meticulous research efforts focused on identifying and understanding threats to coral reefs, such as temperature fluctuations, bioerosion, and overfishing, NCF highlighted the urgent need for conservation and management actions.

*The degradation of coral reefs caused by factors such as global warming, climate change, unsustainable fishing practices, and imprudent freshwater use poses significant threats to islands. Should this trend persist, several islands may become uninhabitable within the next two decades. Our immediate goal is to identify and assess the factors affecting coral reef vulnerability in Lakshadweep, leading to the creation of a resilience map. This map will prioritize both coral reef health and island habitability, enabling targeted interventions to mitigate these threats. - Rohan Arthur, NCF*



*Providing Avenues for Planning  
Island Habitability*

**Effective Communication to the Community:** By disseminating information in accessible formats and engaging directly with schools and colleges, the program fostered greater environmental awareness and stewardship among residents, empowering them to actively participate in conservation efforts. People from Diving schools were taught on the issues faced by the Coral reefs.

**Supporting to the Fishing ecosystem:** Through research on reef fishing dynamics and population boundaries of fish species, NCF will help provide insights for sustainable fisheries management, ultimately benefiting local fishing communities in Lakshadweep. The research on the impact of sea urchins to the reef degradation will be very beneficial to the fishing ecosystem.



## Divers speak...

*Our diving school saw firsthand the impact of Wenzel's training on coral reefs and sea grass enclosures. It equipped our divers with the skills to understand these vital ecosystems, we also pass this knowledge on to our diving students*

*The trainings given by NCF were quite effective. We understood the concepts clearly.*

*NCF did a training program for our divers on the need for coral reefs and sea grass areas effectively. Our diver graduates want to get more involved to preserve these precious habitats.*



*Divers speak*



*Diving School*

**Interdisciplinary Research:** The program facilitated interdisciplinary research bringing together experts from various fields to tackle complex conservation challenges. By integrating expertise in marine biology, ecology, climatology, genetics, and socio-economics, the initiative fostered a holistic understanding of the interconnected factors influencing marine ecosystems in the Lakshadweep archipelago.

**International Publications:** NCF actively engaged in international collaborations and published research findings in prestigious peer-reviewed journals, enhancing the global impact of its work and fostering knowledge exchange among scientists, policymakers, and conservation practitioners worldwide. For example, linkages with universities, research institutions, and conservation organizations in countries like the United States, United Kingdom, Germany, and Spain provided opportunities for joint research projects, data sharing, and capacity building initiatives. Furthermore, publication of research findings in international peer-reviewed journals such as "Ecography Journal," "Fish and Fisheries," and participation in international conferences like ECSA59, ICYMARE, and SCCS facilitated the dissemination of knowledge and contributed to global scientific discourse on marine conservation and management.



**Improving Awareness Among Communities:** Through strategic social media campaigns on platforms like Instagram and WhatsApp, alongside the development of engaging educational materials such as comic strips compiled into the book 'Melem Keezheyum,' NCF effectively heightened awareness about marine biodiversity and climate change among local communities in Lakshadweep. By integrating ecological identity into the cultural fabric of the islands and promoting initiatives like the 'island ethic,' the program cultivated a deeper sense of connection and responsibility toward the region's natural heritage. However, this was found to be not as effective and requires localised approaches as fishermen typically did not take to reading. Further, more efforts need to be taken to present the information to the communities. A video series called Chooru was also raised to raise awareness of the daily life of fisherfolk who are into Tuna fishing in Lakshadweep.

**Unrealized Impact Potential:** Research findings hold the potential to drive positive change and inform evidence-based decision-making processes that benefit both ecosystems and human communities. However, without effective translation of research into action through community outreach and engagement, the program may struggle to realize its full impact potential. This can result in a gap between knowledge generation and on-the-ground conservation outcomes, limiting the program's effectiveness in achieving its conservation objectives.

### c. Efficiency

The program demonstrates high efficiency through consistent adherence to MOU deliverables, a prolific publication record, and a multidisciplinary team equipped with diverse skill sets.

**Adherence to MOU Deliverables:** The program has consistently adhered to its Memorandum of Understanding (MOU) commitments, as evidenced by the completion of various research objectives outlined in the agreement. Activities spanning from long-term analysis of reef ecosystems to understanding population boundaries of fish have been meticulously pursued, ensuring alignment with the agreed-upon deliverables.

**Number of Papers Published:** A robust publication record underscores the program's dedication to advancing scientific knowledge and disseminating findings. With a diverse team boasting expertise in environmental science, marine biology, wildlife, and social work, the program has facilitated the publication of numerous peer-reviewed manuscripts and policy briefs, contributing valuable insights to the scientific community.

**Skill Sets and Strength of the Team:** The team comprises of individuals with a diverse range of qualifications and expertise, ensuring a multidisciplinary approach to research and conservation efforts. From marine ecologists and wildlife experts to social workers and development specialists, each team member brings unique skills and perspectives to the table, enriching the program's capacity to address complex conservation challenges effectively.

**Utilization of Technology:** The program leverages technology to streamline work processes and enhance efficiency. Software tools such as Grid and Size of Corals (Image J) and Lightroom for color corrections expedite data analysis and visualization, enabling researchers to derive insights more rapidly. Additionally, the manual grading of corals and age determination reflects a meticulous approach to data collection and analysis, ensuring accuracy and reliability in research outcomes.

*Utilizing latest software, and cutting-edge underwater equipment significantly help us in our exploration of marine ecosystems. For instance, since I work with coral reefs, comparing coral colour changes becomes feasible by employing swatches, allowing even minute shifts to be accurately measured. For the island habitability study, the integration of monitors utilizing ultrasound technology enables the capture of freshwater lens depth. This is how we try to seamlessly integrate technology into our daily operations.*

**- Wenzel Pinto**

**Time Effectiveness and Maintenance of Equipment:** By employing software solutions and utilizing specialized skills within the team, the program optimizes time effectiveness in data processing and analysis. Furthermore, the maintenance of equipment donated by Chola mandalam in good condition underscores the program's commitment to stewardship and responsible resource management. Well-maintained equipment facilitates uninterrupted research activities, contributing to the program's overall efficiency and productivity.



*Time Effectiveness and Maintenance of Equipment*

#### **d. Sustainability**

The efforts led by the NCF encompass a multifaceted approach rooted in scientific research, policy influence, community engagement, and cultural integration. Through rigorous scientific inquiry, the project generates crucial data to understand ecosystem dynamics, informing sustainable practices and policy development.

**Scientific Research and Monitoring:** By conducting research on coral reef health, fish populations, freshwater budgets, and land stability, the project generates valuable data to understand ecosystem dynamics and inform conservation strategies. This scientific understanding forms the basis for sustainable management practices.

**Policy Influence:** The project's scientific findings and research outputs, such as peer-reviewed manuscripts and policy briefs, contribute to informed decision-making and policy development. By advocating for evidence-based policies that prioritize environmental sustainability, the project helps create an enabling environment for conservation efforts.

*The forest department serves as the primary authority overseeing the island's marine ecosystem. Collaborating with them ensures scalability, as they possess the resources to implement the findings of our research effectively. For example, our study on seagrass exclosures successfully kept turtles at bay and improved the growth of seagrass in Kavaratti, prompting the forest department to set up their own exclosures upon realizing its effectiveness. This is an example of our approach to translating research findings into actionable measures, with the forest department as our valued partners.*

**- Rajeshwari, NCF**

**Fostering a connect with the island:** Localized interventions that foster a deep sense of connection to culture within communities are vital for sustainable conservation efforts. By integrating traditional knowledge, values, and practices into conservation initiatives, communities feel a stronger attachment to their cultural heritage while actively participating in environmental stewardship. For example, in the Lakshadweep archipelago, initiatives that incorporate traditional fishing practices or rituals into marine conservation efforts not only preserve cultural identity but also promote sustainable resource management. These interventions empower local communities by recognizing their role as custodians of the environment, instilling a sense of pride and responsibility in safeguarding their cultural and natural heritage. Through meaningful engagement and collaboration, such initiatives build trust, enhance social cohesion, and lay the foundation for enduring conservation outcomes that resonate with the cultural fabric of the community.

### Fishermen speak...

*Watching 'Choorā' brought tears to my eyes. It beautifully captured the essence of our life as fishermen, our struggles, and our deep connection to the sea. I feel proud to see our story told with such honesty and respect.*

*This documentary made me realize the importance of our traditions and the need to improve our fishing practices. Thank you to the scientist team for sharing our story with the world.*

**Community Engagement and Education:** Engaging local communities in conservation efforts fosters a sense of ownership and responsibility towards their natural environment. By raising awareness about environmental issues, and integrating traditional knowledge, the project empowers communities to actively participate in preserving their ecosystems. This aspect needs to be strengthened. Through initiatives like training programs, workshops, and educational outreach, the project builds the capacity of local stakeholders, including community members, researchers, and policymakers, to effectively manage and conserve natural resources. This strengthens the long-term sustainability of the program by fostering local leadership and expertise.

**Integration of Cultural Heritage:** Recognizing and integrating traditional knowledge and cultural practices into initiatives enhances community engagement and promotes sustainable management. By respecting and preserving cultural heritage, the project ensures that conservation efforts are aligned with local values and aspirations, thereby enhancing their effectiveness and sustainability.

**Donor Base and Long-Term Funding:** The NCF has been conducting these initiatives for a long time, indicating an organizational commitment to the projects. Sustainable funding mechanisms ensure continuity beyond initial phases. NCF's donor base and partnerships with governmental and non-governmental entities provide a foundation for ongoing support.





## e. Social Impact

NCF's research and activities in Lakshadweep have had significant positive social impacts on the environment, local communities, and the broader society.

**Scientific Research and Innovation:** The Coral reef conservation research programs of NCF have facilitated scientific research and monitoring efforts aimed at better understanding reef ecosystems and the impacts of human activities. This research not only informs conservation strategies but also contributes to scientific knowledge and innovation in fields such as marine biology, ecology, and oceanography.

**Resilience to Climate Change:** Coral reefs provide natural coastal protection by buffering against storms, waves, and erosion. By conserving coral reefs, the program helps enhance the resilience of coastal regions of the Lakshadweep archipelago to climate change impacts such as sea-level rise and extreme weather events.

**Biodiversity Conservation:** Coral reefs are among the most biodiverse ecosystems on the planet, supporting a wide range of marine life. By conserving coral reefs, the program helps protect this biodiversity, preserving important habitats and species for future generations.

**Livelihoods and Economy:** The Coral reefs of the Lakshadweep archipelago supports fishing and coastal protection. By conserving coral reefs, the program helps sustain the local fishing livelihoods and contributes to the economic development of coastal communities. The conservation and preservation of the coral reef ecosystems would also ensure continued access to seafood, thereby enhancing food security for these communities.

**Cultural Integration:** Coral reefs hold significant cultural importance for the community living at Lakshadweep. They are integral to their cultural practices, traditional knowledge, and spiritual beliefs. NCF's activities help preserve these cultural traditions and identities. By integrating ecological concepts into the cultural heritage of the Lakshadweep islands, the program strengthens the connection between residents and their natural surroundings. Incorporating traditional knowledge and practices into conservation initiatives not only preserves cultural identity but also reinforces the importance of environmental stewardship within the context of local traditions and beliefs.

**Community Awareness:** NCF's extension activities involves educational initiatives aimed at raising awareness about the importance of coral reefs and the threats they face. By engaging local communities and schools NCF has trying to build environmental stewardship among them. Through NCF's social media campaigns and educational initiatives, local communities in Lakshadweep are becoming more informed about marine biodiversity and climate change. This increased awareness empowers residents to make more sustainable choices and participate in conservation efforts.

**Community Engagement and Participation:** Localized interventions prioritize the active involvement of local communities in decision-making processes and conservation activities. By respecting traditional knowledge these interventions can enhance social cohesion, promote sustainable resource management, and build resilience to environmental change. The community seeks the support of NGOs to help them in waste management which is the next big issue in the community.



## Voices of concern

*Plastic bags, bottles, and wrappers littering the shores are the reason that fish is decreasing.*

*We need stricter regulations on plastic use and disposal to prevent further harm to our marine ecosystems.*

**Tourism:** The coral reefs of the Lakshadweep archipelago are major attractions for tourists, drawing thousands of visitors each year for activities such as snorkeling, diving, and recreational fishing. NCF's reef conservation research, when implemented, could help maintain the natural beauty and biodiversity that attracts tourists, thereby supporting local tourism industries and generating revenue for communities.

## 4. Recommendations:

### *Enhance Community Outreach and Engagement:*

The need of the hour is for NCF to spread the message on their research findings about the coral reef, its conservation and preservation techniques. NCF should appoint personnel specifically dedicated to engaging with local communities. These teams should understand the cultural nuances and dynamics of the community to effectively convey research findings and foster meaningful dialogue. This may involve conducting meetings in community centers, engaging with local leaders, and utilizing local languages to ensure effective communication. These interactions would translate scientific research into actionable steps for community members. It will further empower them to participate in conservation efforts by providing opportunities for involvement and ownership.

### *Improve Communication Channels:*

By Implement a mix of communication channels such as community meetings, radio broadcasts, social media platforms, and newsletters NCF should work in reaching to a broader audience. They should tailor make messages to different stakeholder groups locally, nationally, and globally. These messaged should resonate with local values and highlight how conservation efforts at the Lakshadweep archipelago would save the coral reef, sustain the fishermen's livelihoods, and enable future generations to enjoy the benefits of the reef.

As nearly 100% of the population belong to the Muslim community, the Mosque Heads could be involved in dissemination of information about preserving the reef. This ensures that information is communicated in a manner that is trusted and respected by community members.



### *Spreading awareness among Tourists*

Visitors to the islands can receive copies of the Melem Keezheyum books published by NCF. The books are available in both English and Malayalam. Due to their length, the book could be made available as separate books in English and Malayalam. By giving these books to the tourists, the awareness on the reef conservation initiatives would reach a larger number of people. The Diving schools could be utilized to distribute the books to tourists. Similarly the books that are kept in the school library should be circulated in a planned manner among the students and teachers.

### *Strengthen Stakeholder Collaboration:*

NCF to organize forums and workshops where diverse stakeholders within the community can come together to discuss conservation challenges, share perspectives, and co-create solutions. This would ensure that all voices are heard and considered in decision-making processes. This would also enable them to effectively collaborate with local government agencies, other NGOs, businesses, and community groups to leverage collective resources and expertise. Engaging diverse stakeholders in joint planning processes, will ensure that NCF's conservation initiatives align with local priorities and objectives.

### *Promote Community-Based Conservation Research:*

NCF to engage local communities in all further stages of the research process, from identifying research questions to collecting and analyzing data. By incorporating indigenous knowledge and traditional ecological practices into research methodologies, NCF will be able to enhance the relevance and effectiveness of conservation interventions during the implementation phase.

### *Empower Youth Engagement:*

NCF to develop programs and activities that actively involve young people in conservation efforts. By providing opportunities for education, skill-building, and leadership development, NCF could empower the youth of the islands to become agents of change within their communities.

## **5. Conclusion**

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Reef conservation initiatives in Lakshadweep are imperative due to the archipelago's reliance on coral reefs for various ecological, economic, and cultural reasons. These reefs support a rich biodiversity, providing habitat for numerous marine species crucial for fisheries, tourism, and sustaining coastal livelihoods. With over 90% of the local population dependent on marine resources for food and income, healthy reefs are fundamental for ensuring food security and economic stability. NCF's concerted reef conservation efforts in Lakshadweep when implemented to action would mitigate local stressors, establish marine protected areas, raise awareness, and enhance resilience to climate change impacts. NCF's research in safeguarding coral reef ecosystems, can facilitate Lakshadweep to secure its marine resources, support sustainable development, and protect the cultural heritage of its inhabitants.



## 9. Securing livelihoods to foster coexistence of people and wildlife

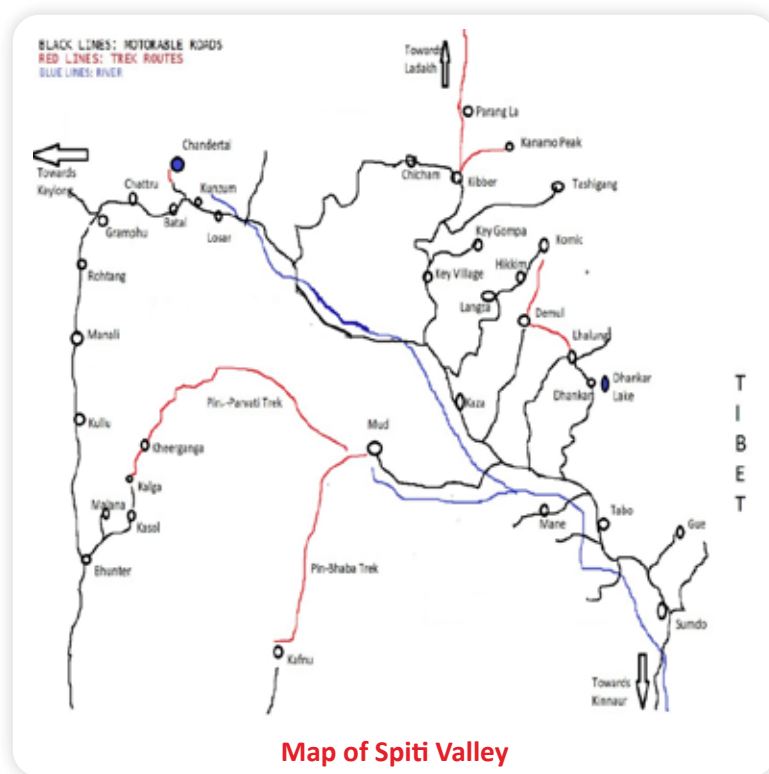
Location: Upper Spiti landscape, Himachal Pradesh

### 1. Background

Spiti Valley, situated in the northern Indian state of Himachal Pradesh, is a remote and rugged mountain desert region sandwiched by the high mountains of Kinnaur, Tibet, Ladakh, and Lahaul from all sides. Known for its stark and breathtaking landscapes, Spiti Valley is characterized by towering snow-capped peaks, deep gorges, pristine rivers, and ancient Buddhist monasteries. At an average altitude of around 4,000 meters (13,000 feet) above sea level, Spiti Valley is one of the highest inhabited regions in the world.

Spiti Valley, despite its stunning beauty and cultural richness, faces several challenges, particularly due to its remote location and difficult terrain. This makes it challenging to access, especially during the winter months when heavy snowfall blocks roads, isolating the region from the rest of the country. It experiences extreme weather conditions, with freezing temperatures and heavy snowfall during the winter months and relatively short summers. These conditions make agriculture difficult and limit the availability of basic necessities. Water scarcity is a significant issue in Spiti Valley, exacerbated by its arid desert landscape. The region relies heavily on glacial meltwater and snowmelt from the surrounding mountains, which is often insufficient to meet the needs of the local population, especially during the dry season.

The presence of snow leopards in Spiti Valley, while a testament to the rich biodiversity of the region, does pose certain challenges and conflicts for the local communities and wildlife conservation efforts. Snow leopards occasionally prey on domestic livestock, such as sheep, goats, and yaks, which are vital to the livelihoods of many families in Spiti. This can result in economic losses for herders, exacerbating human-wildlife conflicts. In response to livestock losses, some villagers may resort to retaliatory killings of snow leopards, either out of fear or to protect their livelihoods. This not only threatens the survival of snow leopard populations but also disrupts the delicate ecological balance of the region.



Managing human-wildlife conflicts involving snow leopards requires careful planning and implementation of conservation strategies. Climate change poses a long-term threat to snow leopard habitats and prey species in Spiti Valley. Changes in temperature and precipitation patterns can alter vegetation cover and prey availability, impacting the survival of snow leopards.

Understanding these problems, NCF has implemented many community-based initiatives ensuring the long-term survival of snow leopards in Spiti Valley while addressing the needs of local communities.

## 2. Stakeholders Consulted

An online zoom meeting was held by the Ms.Latha Suresh and Mr. Vimal of SAN Inda, with the NCF team based at Spiti to understand the work done by them during the year 2022-23. The following members of the NCF team interacted with the SAN team on 19<sup>th</sup> March, 2024

S.no	Name	Designation
1	Tanzin Thinley	Field Manager
2	Kesang Chunit	Field Technician
3	Rinchen Tobge	Field Technician
4	Tandup Chhering	Field Technician
5	Deepshikha Sharma	Programme Manager

The team further collected audio feedback from a few villagers in six villages which was recorded and sent to the SAN team.

The team discussed about the following activities that were implemented by NCF -

1. Reinforcement of livestock corral
2. Livestock Security Programme
3. Sustainable use of pastures through grazing-free reserves
4. Deploy guards to prevent crop damage
5. Printing and distribution of Himkatha

### 3. Report on Performance

The projects of NCF were implemented in 13 villages during the period April 2022- March 2023.

#### Village-wise activities of NCF

S.No	Villages	Reinforcement of livestock corral	Livestock Security Programme	Sustainable use of pastures through grazing-free reserves	Deploy guards to prevent crop damage
1	Demul	√			√
2	Komic	√			√
3	Sagmam		√		
4	Chichim		√		√
5	Kibber		√	√	√
6	Kiamo			√	
7	Losar			√	
8	Lalung			√	
9	Langza			√	√
10	Tashigang				√
11	Getey				√
12	Mulche				√
13	Hikkim				√

#### a. Reinforcement of livestock corral

A corral is an enclosure or pen used to confine animals, typically livestock such as cattle, horses, sheep, or goats. Corrals are commonly constructed using fencing, gates, and sometimes additional structural elements like panels or posts. They are designed to provide a controlled area where animals can be safely contained, managed, and cared for. Reinforcement of corrals typically involves strengthening the structures to ensure the safety and security of the animals housed within them. In regions where predators like snow leopards are present, corrals can offer protection for livestock against predation, especially during vulnerable periods such as lambing or calving.

The villages of Demul and Komic lie in one of the most snow leopard-dense areas, These villages are highly impacted economically and mentally due to frequent incidents leading to increased resentment towards the animal. In the year 2022-23 there were 5 cases of snow leopard attacks in the corral. In these two villages there were no measures employed to prevent snow leopards from entering the corrals and hence reinforcement efforts of the corral were done in these two villages.



2 individual corrals were set up in Demul and 1 in Komic during September 2022. The size of each corral was 10 feet by 10 feet and houses around 15 animals. Grilled wires are laid on the roof with a metal frame and meshed wire. These corrals are made for small animals like goat and sheep. The cost of setting up the reinforcements is around Rs.25,000 – 35,000. These structures have a life of around 15 years as the wires are zinc coated and are weather resistant. In case of any damage to the mesh, NCF repairs it for free for the villagers. But if the walls are damaged the owner takes responsibility for repairing the walls. Post reinforcement in September, NCF's field staff member who was in-charge of corral reinforcement efforts had a personal emergency and hence no corrals were further established in that year.

*In May 2023, in Shichiling village, a snow leopard entered a corral that was not reinforced and killed 35 animals in one night. This is a case of surplus killing by the leopard as it kills more animals than necessary for immediate consumption. This behavior is believed to occur when snow leopards encounter a group of vulnerable prey, such as a flock of sheep or a herd of livestock. Due to their opportunistic hunting nature and the relative scarcity of prey in their high-altitude habitats, snow leopards may engage in surplus killing to secure future food sources. This happens only during the nights and within a corral. During the day, when the cattle are grazing, the leopards attack one or two animals only. This is why corrals need to be reinforced in these villages. – NCF Coordinator*

Corrals can also be effective in providing shelter for livestock during the harsh winter months when temperatures drop significantly, and snow covers the ground. Well-built corrals with sturdy structures and adequate roofing can offer protection from strong winds, heavy snowfall, and extreme cold, thereby helping to keep the animals safe and healthy.

## b. Livestock Security Programme

Livestock security programs are essential to safeguard the well-being and economic interests of livestock owners and communities. These programs address various threats such as theft and predation that can jeopardize livestock health and livelihoods. By providing coverage for livestock losses due to snow leopard predation, this program offers a safety net for farmers and cattle owners, protecting their investments and livelihoods. It further helps to stabilize incomes, particularly for smallholder farmers who may lack the resources to absorb substantial financial losses resulting from livestock mortality.

### Premium Amount for Cattle

Livestock	Age	Gender	Compensation in Rs.	Monthly premium in Rs.	Annual Premium in Rs.
Yak	Adult	Male	26,000.00	60.00	<b>720</b>
Yak	Sub adult	Male	8,000.00	80.00	<b>960</b>
Yak	Young	Male	6,000.00	100.00	<b>1,200</b>
Yak	Adult	Female	14,000.00	40.00	<b>480</b>
Yak	Sub adult	Female	5,000.00	30.00	<b>360</b>
Yak	Young	Female	5,000.00	80.00	<b>960</b>





Livestock	Age	Gender	Compensation in Rs.	Monthly premium in Rs.	Annual Premium in Rs.
Dzomo	Adult	Female	7,000.00	30.00	360
Cow	Adult	Female	7,000.00	30.00	360
Donkey	Adult	Male	3,000.00	40.00	480
Donkey	Adult	Female	2,500.00	30.00	360
Horse	Adult	Male	26,000.00	50.00	600
Horse	Adult	Female	26,000.00	80.00	960
Horse	Young	Male	8,000.00	100.00	1,200
Horse	Young	Female	7,000.00	100.00	1,200

### Amount collected and compensated in 2022-23

S.No	Village	For the period 2022-23		
		Amount collected (Rs.)	Compensation given (Rs.)	No.of livestock lost
1	Sagnam	38,620	21,000	6
2	Chichim	25,980	21,000	6
3	Kibber	81,240	143,000	24

*When a claim is being made for an animal due to leopard attack, we follow some rules. The carcass should not be touched or removed from the spot where it was found dead. Nor should it be consumed by the family. The reason behind this is that leopards will feed on the dead animal for about 15 days till it is satiated. Otherwise, if the carcass is removed it would attack another animal thereby causing more damage. – Coordinator, NCF*

This was a program that was appreciated by the locals as it was highly beneficial to them. They had to pay an initial amount Rs 1000/- as a registration fee to enroll in the scheme. Then depending on the type of animal and numbers they had, they would accordingly pay the premium amount. The monies raised were put into a corpus fund which has now become a self-sustaining initiative after three years.

*Insurance program in Sagnam village is nearing its closure for the year. Compensation will be declared in May 2023. The funds budgeted under this head were for potential NCF contribution towards insurance corpus funds. However, since there was no need to support the corpus this year, we have not made any payment to the committees. Therefore, some of the funds under the insurance program were used to support our other activities like grazing free reserves.*



This insurance provides coverage for the cost of replacement of lost livestock and even compensation for lost income from breeding or production.

*The insurance scheme offers peace of mind to owners, knowing that they have financial protection against the unpredictable nature of predator attacks. Sometimes we have had attacks by stray dogs also which is covered in this scheme. Moreover, it incentivizes proper preventive measures and management practices to minimize the risk of such incidents, promoting safer environments for animals. – Coordinator, NCF*

### Farmer speak...

*The people from my village have benefited a lot from the NCF's insurance scheme. We are mostly farmers here and we do not have adequate money. So, when the wild animals like cheetahs, snow leopards, wolves, etc. killed our cattle we never had money to recover the loss. But now after the animal insurance scheme was implemented in the village, we get compensated for the loss of the cattle within a day or two, when we need it the most. - Thakpat Ranjan, Chicham village*

## c. Sustainable use of pastures through grazing-free reserves

NCF is involved in creating grazing-free reserves as a strategy to prevent predator attacks. This involves establishing protected areas where livestock are not allowed to graze, thus reducing the potential for human-wildlife conflicts. The land is taken from the community members, and they are compensated for giving the land for this cause. These lands are cordoned off and will not have access to the local cattle. It is only meant for the wildlife to graze, and the flora and fauna of these reserves are untouched by the locals.

S.no	Location of the reserve	Area of the reserve in sq.ft.	No. of families that have contributed to the reserve
1	Kibber	20	80
2	Kiamo	5	22
3	Losar	5	45
4	Lalung	400	75
5	Langza	20	30
	<b>TOTAL</b>	<b>450</b>	<b>252</b>

These reserves have now provided a safe haven for wildlife, allowing predator species to thrive without the need to target livestock for food. This has significantly reduced the conflicts between snow leopards and domestic animals, such as sheep, goats, or cattle.

These grazing-free reserves have also helped to maintain natural predator-prey dynamics by ensuring that wild animals have access to their natural prey species without relying on livestock. This has led to healthier predator populations and a more balanced ecosystem overall.



*We have found that the number of blue sheep in this area has increased. This is a rare variety of sheep which is becoming endangered. A few months back we spotted two of them in one of the reserves. This has definitely helped in promoting biodiversity conservation apart from providing safety to the cattle from predator attacks – NCF Coordinator*

*We made the Grazing free Reserve at Kibber a few years ago. Charuji of NCF explained the concept to the villagers and we were happy to give our lands to the reserve. All the members contributing to the reserve have a joint account and we also have a reserve committee. The money gets transferred to the account and all we villagers have benefitted from this scheme. - Dorje Cherin, Kibar Reserve Committee*

*NCF has been built a reserve area during the last few years around our village and it is very beneficial Since the time this reserve area has been built, the number of blue sheep has increased a lot. They graze within the areas and do not enter the fields inside our village. This is very beneficial for the villagers and the animals. - Yishay Chuppel, Langza village*

#### d. Deploy guards to prevent crop damage

Agriculture was the major occupation in the area. Farming activities happen only for about 4 to 6 months during the summers. Green Peas, Barley, Black pea and potatoes are the crops grown in this region. The farmers in the area sell their produce and stock their homes with ration like rice, channa dal, etc needed for the next six to eight months. This would help them survive the winters. Hence safeguarding their crops during the summers was extremely important. Crop damages were sometimes caused by wild herbivores which would enter the farms, in spite of the farms being fenced, as they hopped over the fences. They come looking for food and eat the crops and also cause damage to the crops. Hence NCF introduced an intervention, where a guard was appointed through the village committee. The appointed guards would monitor the movement of the animals and prevent damage to the crops in the local community. By using a sling-bullet, these guards scare any animals from entering the farms or pastures. This continued monitoring and persistent chasing of wild herbivores has reduced the incidents of animals entering the pastures or farms. The major threat was posed by the Blue sheep which would rampage the crops and cause a lot of damage to the pastoral lands. This project has been implemented in 9 villages which has been beneficial to around 306 families.

S.no	Location of the reserve	No. of guards deployed	No. of families that have benefitted	Salary paid to the Guards
1	Demul	1	65	15,000
2	Komic	1	13	15,000
3	Chichim	1	75	15,000
4	Kibber	2	80	28,000
5	Kiamo	1	1	9,000
6	Losar	1	30	15,000
7	Lalung	2	6	30,000



S.no	Location of the reserve	No. of guards deployed	No. of families that have benefitted	Salary paid to the Guards
8	Langza	2	30	<b>18,000</b>
9	Tashigang	1	6	<b>15,000</b>
	<b>TOTAL</b>	<b>12</b>	<b>306</b>	<b>1,60,000</b>

Overall, deploying guards to prevent crop damage is a proactive and effective strategy that helps farmers protect their livelihoods while promoting sustainable agricultural practices.

*I am working as a crop guard in Tashigang. Earlier when this project was not started, there were a lot of blue sheep that would enter our fields and damage the crops. But since this project has started, villagers have got a very good result. We ensure that the blue sheep do not enter their fields, and this has given the villagers a lot of relief. - Anup Dorje, Tashigang village.*

*Since 2013-14 crop guards have been posted by NCF in our village. Since then, we have received a lot of help from crop guards. Our field are free from animal attacks and crop damages and they are saving our crops. We are getting a lot of help from this. Thank you. - Amduish, Demul village*

*For the past few years, the incidents of blue sheep coming to our fields has become very rare. The reason for this is that the NCF team has placed local guards who ensure that these animals do not enter our village. I would like to thank them very much. Lote Gaso, Komic village.*

## e. Printing and distribution of Himkatha

Himkatha is a trans-Himalayan community bi-annual newsletter published by NCF team at Spiti with a focus on sharing stories of human-nature relationships. The high Himalayan and trans-Himalayan landscape of Himachal Pradesh is home to over two lakh people and a diversity of unique plants, animals, and birds that are adapted to this high elevation region. The local communities have been the custodians of these natural landscapes through their traditional knowledge and practices. Most of this knowledge, however, remains implicit and localised.

Civilization in the Spiti landscape dates back several millennia. Remoteness and tough weather conditions made it difficult to get to these places. In the process, they formed their own unique identity. Underlying this was a sacred bond that people shared for the place which manifests in their folklore, traditions, beliefs, and their way of life. With improvements in accessibility, these regions became a subject of curiosity among explorers, academics: history, anthropology, geology, ecology, and many more. Through Himkatha, NCF plans to share the stories of such local traditions that have been crucial to the conservation of the rich natural heritage.

The 3-member team of Ms. Chemi Lhamo, Mr. Ajay Bijoor and Ms. Deepshikha Sharma are involved in the publishing of Himkatha. NCF has been releasing the newsletter 'Himkatha', bi-annually since the year 2020. They have released a total of 6 issues till March 2023, and have covered themes like water and soil, festivals, and agricultural practices in the high-altitude region. The newsletter has been circulated to 500+ online subscribers. 1300 printed copies were distributed to communities, schools, hotels/homestays, libraries, local officials etc



In July 2022, NCF released an online issue with the theme of water, and many crucial stories relating to the impact of climate change on their water sources which were shared by the locals. As water sources dry up or change course due to the climate crisis, these communities are pushed to the edge. These stories were published on the Himkatha website, mailed to 350+ subscribers and widely shared on social media and local WhatsApp groups. The stories can be read from their dedicated website - <https://www.himkatha.org/articles>

In December 2022, the issue on 'local handicrafts and fibre' was released and was updated on the website as well as sent out to 405 online subscribers. The issue was distributed on-field in Spiti and Kinnaur. One of the main objectives with Himkatha was to encourage more contributions by women. Out of all the articles in the 'local handicrafts and fibre' issue, majority of them were written by women. NCF hopes to keep the momentum going with this and will continue to encourage contributions by local communities, specifically women.

## 4. Evaluation using REESS Framework

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### a. Relevance

Villagers in Spiti Valley, India, lead a predominantly agrarian lifestyle, deeply rooted in traditional practices. They belong to diverse ethnic groups and are engaged in agriculture, cultivating crops like barley, potatoes, and peas in terraced fields. Livestock farming, particularly of yaks, sheep, and goats, is also common. Due to the region's remote location and challenging terrain, villagers often rely on self-sufficiency and community cooperation for survival. Their way of life reflects a harmonious relationship with nature, shaped by centuries of adaptation to the rugged Himalayan landscape.

Predator attacks in the Spiti Valley are frequent which can lead to devastating losses, both emotionally and financially. The elusive snow leopard, adapted to the harsh mountain environment, occasionally preys on livestock, leading to conflicts with local herders. These conflicts arise when snow leopards venture near human settlements in search of easier prey. Similarly, wolves, blue sheep etc. also target livestock, particularly in areas where their natural prey is scarce. Despite these occasional encounters, the overall risk to human safety in the Spiti Valley from predator attacks is a major problem faced by the villagers. Cattle insurance is also essential for livestock owners of Spiti valley to safeguard their investment in animals.

Efforts to minimize conflicts are vital not only for the safety of both humans and predators but also for maintaining the delicate ecological balance of the region, ensuring the continued survival of these iconic species in their natural habitat.

### b. Effectiveness

The reinforcement of Livestock Corral Program in Spiti Valley is significant in addressing the challenges faced by villagers in protecting their livestock. By reinforcing and constructing sturdy enclosures for livestock, the program aims to mitigate risks such as predation, theft, and adverse weather conditions. These reinforced corrals provide a secure environment for livestock, reducing the likelihood of attacks by predators such as snow leopards and blue sheep. This helps alleviate losses due to predation, safeguarding the economic interests of villagers who heavily rely on livestock for their livelihoods.



By establishing designated areas where grazing is prohibited, the program aims to restore and protect fragile ecosystems while ensuring the sustainable management of natural resources. These reserves serve as crucial habitats for native flora and fauna, promoting biodiversity conservation in the region. It also helps to maintain the health and productivity of grazing lands by allowing vegetation to regenerate undisturbed. This leads to improved pasture quality, which in turn enhances the health and productivity of livestock.

The cattle insurance program for villagers in Spiti Valley is substantial, and addresses the key challenges faced by livestock owners in the region. It provides financial security against potential losses due to predator attacks. Cattle insurance ensures the continuity of livelihoods dependent on livestock rearing, which is a primary source of income for many villagers in the valley.

By stationing guards to protect crops, particularly during vulnerable stages of growth, the program aims to mitigate losses caused by wildlife such as blue sheep, ibex, and sometimes stray cattle. These guards monitor the fields, and deter animals from entering agricultural areas, and take preventive measures such as scare tactics or non-lethal deterrents to protect crops. They play a crucial role in early detection and response to wildlife intrusion, allowing for timely intervention to prevent significant damage. This proactive approach can help reduce losses and ensure a higher yield for farmers in the Spiti valley.

Himkatha publishes stories or narratives associated with the Himalayan region. These stories encompass a wide range of themes, including cultural heritage, folklore, natural wonders, historical events, etc. reflecting the rich and diverse tapestry of traditions and beliefs in the Himalayan communities. It has served as a tool to spread awareness about Spiti across the nation and globally.

### c. Efficiency

The efficiency of the programs offered by NCF at Spiti valley lies in its ability to foster economic empowerment within the community.

The corral reinforcement program enhances protection against predator animal attacks, a significant concern in remote regions like Spiti Valley. Reinforced corrals serve as deterrents to predator attacks thereby reducing the incidence of livestock loss and minimizing financial losses for villagers.

Providing insurance schemes for cattle has led to financial stability and risk mitigation, enabling villagers to make strategic investments in livestock breeding and other agricultural activities, leading to an overall socio-economic development.

Deploying a guard who monitors predator movements is useful for all the farmers in the village. This practical approach and efficient use of resources can help reduce losses and ensure better returns for farmers.

Providing grazing free reserves promotes ecological resilience, supports traditional livelihoods, and fosters sustainable development in Spiti Valley. It represents an efficient strategy for balancing conservation goals with the socio-economic needs of villagers, ensuring the long-term well-being of both people and nature in the region.

The Online publication of Himkatha is an efficient way in spreading awareness about the people of Spiti Valley both locally and globally.



## d. Sustainability

The program's sustainability hinges on its ability to protect natural habitats and wildlife while effectively managing livestock. The sustainability of the program also relies on active community participation and ownership.

The villagers are involved in the design, implementation, and monitoring of the program and perceive it as beneficial to their needs and aspirations. This sense of ownership is likely to sustain over time and ensure the program's continuity and adaptability to changing circumstances.

The reinforced corrals help reduce human-wildlife conflicts and prevent overgrazing, soil erosion, and habitat degradation, and they contribute to the long-term ecological health of Spiti Valley.

Sustainable livestock management practices supported by reinforced corrals, the grazing reserves and by deploying guards leads to improved productivity and livelihoods for villagers. The insurance scheme helps reduce livestock losses due to predation and promotes responsible animal husbandry practices, which enhances economic stability and resilience within the community.

By regularly sharing stories through Himkatha, a sustained interest on the happenings at Spiti Valley is created in the minds of the readers.

## e. Social Impact

NCF's program that focuses on securing livelihoods to foster coexistence of people and wildlife in Spiti Valley has significant social impact on the local communities.

By enhancing the security of livelihoods dependent on agriculture and livestock rearing, the program provides stability to rural households. This stability reduces vulnerability to economic shocks and enhances the overall well-being of families, contributing to poverty alleviation and socio-economic development.

By addressing human-wildlife conflicts through establishing grazing reserves and deploying guards, the program promotes peaceful coexistence between villagers and wildlife. Reduced conflicts lead to improved community relations, decreased tension, and enhanced safety for both people and animals.

The program engages local communities in decision-making processes and capacity-building activities, empowering them to take ownership of conservation efforts. This fosters a sense of pride, responsibility, and stewardship among community members, strengthening social cohesion and collective action.

By promoting sustainable livelihoods that are rooted in traditional practices, the program helps preserve local cultures and indigenous knowledge systems. This strengthens cultural identity and pride among community members, safeguarding intangible cultural heritage for future generations. All these are also published in Himkatha which promotes environmental literacy and instills a sense of environmental responsibility among its readers, fostering a culture of conservation of Spiti Valley.





## 5. Recommendations

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NCF could document the best practices followed in all the villages where it is currently working and create a manual for replicating the activities in other villages. Spiti Valley is home to 30 to 40 villages scattered across its rugged terrain. NCF can replicate this program across many more villages as most of these villages face similar issues.

NCF could create environment watch groups in each village and handhold/mentor them for a year before exiting from the village. This would be a sustained exit strategy for NCF where the community is empowered and takes ownership of tackling the problems they face.

## 6. Conclusion

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NCF's program focused on securing livelihoods to foster coexistence of people and wildlife in Spiti Valley has the potential to bring about transformative social change, enhancing resilience, harmony, and well-being within local communities. All the activities implemented play a crucial role in safeguarding the economic interests and livelihoods of villagers in Spiti Valley, while also contributing to the sustainable development of the region's livestock sector. The collaborative efforts to secure livelihoods and coexist with wildlife has strengthened social bonds within communities. Through collective decision-making, cooperation, and mutual support, villagers of Spiti valley are working together towards common goals, promoting social cohesion and resilience in the face of environmental challenges.

## 10. SDG Alignment

NCF is actively engaged in addressing several United Nations Sustainable Development Goals (SDGs) through its various research and conservation efforts at Valparai, Hassan region, Lakshadweep and Spiti valley.



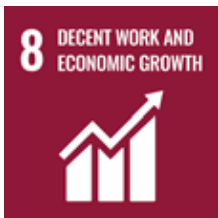
NCF's engagement with local communities, schools, and colleges through educational outreach initiatives fosters environmental literacy and promotes stewardship of natural resources. By raising awareness about marine biodiversity, climate change impacts, and conservation efforts, NCF empowers school students, college students and local individuals to become advocates for sustainable development and environmental conservation.



NCF has provided equal opportunities to both male and female scientists without any gender bias.



NCF is actively involved in a research in Lakshadweep to restore the freshwater table. This will result in the communities accessing clean water for their domestic purposes.



NCF has provided employment to many locals in Spiti valley, Valparai and Lakshadweep who are actively involved in the restoration and conservation efforts of NCF. This has led to their socio-economic development as well.



NCF has been very innovative in spreading awareness and communicating about the elephants and the wild animals presence to the villagers in Valaparai, Hassan and Spiti through WhatsApp and other software. NCF's active presence in social media and research platforms helps them to spread their research findings. NCF also tracks the movement of elephants and reports them to the factories to prevent loss of life of its workers.



NCF has helped the local communities and tribals in the areas where they work with livelihood opportunities thereby improving their living standards.



All the efforts by NCF at Anamalais, Spiti valley and Lakshadweep focusses on creating a sustainable community that will be able to manage its flora and fauna and contribute to the environmental sustainability.



NCF's efforts to monitor and evaluate commercial reef fishing activities aim to promote sustainable fisheries management practices. By studying fish population boundaries and vulnerability to overfishing, NCF contributes to informed decision-making and policy development to ensure the responsible use of marine resources.



Through initiatives focused on evaluating the impacts of climate change on habitability, as well as studying freshwater budgets and land stability, NCF is actively working to advance climate resilience and adaptation strategies in the Lakshadweep archipelago. By communicating research findings to local communities, other researchers and promoting environmental awareness within local communities where it works, NCF seeks to mobilize action towards climate mitigation and adaptation.



NCF's analysis of long-term trends in ocean temperatures and coral reef dynamics directly contributes to understanding and mitigating the impacts of climate change on marine ecosystems. By studying coral responses to stressors and evaluating reef accretion potential, NCF aims to safeguard marine biodiversity and promote sustainable management of ocean resources.



NCF's carbon sequestration project works on reviving the rainforest regions of Anamalai and Hassan and improving the biodiversity of the regions. NCF's research on reef erosion, freshwater influence, and sediment generation contributes to understanding terrestrial and marine interactions, particularly in fragile island ecosystems like the Lakshadweep archipelago. By studying the impacts of land-use activities on coral reefs and coastal habitats, NCF aims to promote sustainable land management practices that preserve biodiversity and ecosystem integrity.



The program recognizes the importance of partnerships in achieving sustainable development goals and actively collaborates with various stakeholders, like the communities, schools, panchayat, local industries, forest department, research agencies etc to effectively implement all the conservation and restoration activities.



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