



Impact Assessment Report:
Strengthening Rural Healthcare – PHC Upgradation

Honeywell Hometown Solution India Foundation (HHSIF)

April 2026

Price Waterhouse Chartered Accountants LLP

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Notice to Reader

1. This report has been prepared solely for **HHSIF ('Client')** being the express addressee to this report. PWCALLP ('PW', 'we', 'our') does not accept or assume any liability, responsibility or duty of care for any use of or reliance on this report by anyone, other than (i) our Client, to the extent agreed in the relevant in our relevant agreement dated [Month Date, Year] for the matter to which this report relates (if any), or (ii) as expressly agreed by PW at its sole discretion in writing in advance.
2. By reading this you deem to agree and confirm the content of the same. If you do not agree, you are an unauthorised recipient and should return or destroy the document.
3. The reader of this report understands that the work performed by PW was performed pursuant to the requirement stated under Rule 8(3) of the Companies (CSR Policy) Rules, 2014 applicable to the Contributing Parties and was performed exclusively for **Client's** sole benefit and use. The reader of this report acknowledges that this report was prepared for the purpose stated herein and as per the terms agreed in the contract. Accordingly, it may not include all procedures deemed necessary for the purposes of the reader.
4. PW makes no representations or warranties express or implied regarding the information contained in this report and expressly disclaims any contractual or other duty, responsibility or liability to any person or entity other than its Client in accordance with the agreed terms of engagement.
5. This report by its very nature involves numerous assumptions, inherent risks and uncertainties, both general and specific. The conclusions drawn are based on the information available with us at the time of writing this report. We have not carried out any work or made any enquiries of management since the date of our report. Our report do not incorporate the effects, if any, of events and circumstances which may have occurred, or information which may have come to light, after such date. The information contained in this report is selective and is subject to updating, expansion, revision, and amendment. It does not purport to contain all the information that a recipient may require.
6. PW's Deliverable(s) should be read in full and in no way should be construed as an opinion, attestation, certification or any form of assurance. We have not performed any procedure which can be constituted as an audit or an examination or a review in accordance with generally accepted auditing standards or attestation standards in India or elsewhere. The comments in our report are not intended, nor should they be interpreted to be legal advice or opinion. Our report is not a substitute for any enquiries and procedures that you would (or should) otherwise undertake and judgements you would make for any purpose. **HHSIF** shall be fully and solely responsible for applying independent judgment, with respect to the findings included in this report, to make appropriate decisions in relation to future course of action, if any. We shall not take responsibility for the consequences resulting from any decisions made by anyone based on information included in the report.
7. While information obtained from the public domain or external sources or implementing partners or whatever source, if any, the same has not been verified for authenticity, correctness, genuineness, accuracy or completeness. We have obtained information, as far as possible, from sources generally considered to be reliable and no independent verification, assessment, audit or otherwise has been performed on those. It must be noted that information from public domain or websites may not be updated regularly. We assume no responsibility for the reliability and credibility of such information.
8. Our work was limited to the specific samples/ procedures described in this report and were based only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as sample respondents. Accordingly, changes in circumstances/ samples/ procedures or information available after the review could affect the findings outlined in this report. Further, the study did not include conducting any KYC checks/due diligence of the implementing partners, beneficiaries.
9. We assume no responsibility for any user of the report, other than **HHSIF**. Any person who chooses to rely on the report shall do so at their own risk.

10. Our observations represent our understanding and interpretation of the facts based on reporting of beneficiaries and stakeholders. The recommendations provided may not be exhaustive from the perspective of bringing about improvements in the CSR Project(s) and additional steps/efforts may be required on the part of the management to address the same.

11. PW performed and prepared the Deliverable(s) at Client's direction and exclusively for Client's sole benefit and use pursuant to the requirement stated under Rule 8(3) of the Companies (CSR Policy) Rules, 2014 applicable to the Contributing Parties. Our report is based on the completeness and accuracy of the above stated facts and assumptions, which if not entirely complete or accurate, should be communicated to us immediately, as the inaccuracy or incompleteness could have a material impact on our conclusions.

12. The reader agrees that PW its partners, directors, principals, employees and agents neither owe nor accept any duty or responsibility to it, whether in contract or in tort (including without limitation, negligence and breach of statutory duty), and shall not be liable in respect of any loss, damage or expense of whatsoever nature which is caused by any use the reader may choose to make of this report, or which is otherwise consequent upon the gaining of access to the report by the reader. Further, the reader agrees that this report is not to be referred to or quoted, in whole or in part, in any prospectus, registration statement, offering circular, public filing, loan, other agreement or document and not to distribute the report without PW's prior written consent.

13. In no circumstances shall we be liable, for any loss or damage, of whatsoever nature, arising from information material to our work being withheld or concealed from us or misrepresented to us by any person to whom we make information requests.

List of acronyms

Acronym	Full Form
AMC	Annual Maintenance Contract
ANC	Ante Natal Care
CBC	Complete Blood Count
CHC	Community Health Centre
CSR	Corporate Social Responsibility
FY	Financial Year
HHSIF	Honeywell Hometown Solution India Foundation
IDI	In-Depth Interview
INR	Indian Rupee
IP	Implementation Partner
IPHS	Indian Public Health Standards
IRECS	Inclusiveness, Relevance, Effectiveness, Convergence, Sustainability
JBR	Joint Business relationship
KM	Kilometers
KII	Key Informant Interview
KYC	Know Your Customer
MO	Medical Officer
NCD	Non-Communicable Diseases
NGO	Non-Government Organisation
OPD	Out Patient Department
OT	Operation Theatre
PHC	Primary Health Centre
PWCALLP	Price Waterhouse Chartered Accountants LLP
PW	Price Waterhouse
RO	Reverse Osmosis
SDG	Sustainable Development Goals

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Executive Summary

About the Project:

Honeywell Hometown Solutions India Foundation (HHSIF) supported the **Strengthening Rural Healthcare – PHC Upgradation programme** to address critical gaps in primary healthcare infrastructure. It was implemented by **Americares India Foundation** covering 197 Primary Healthcare Centers (PHCs) and 1 Community Healthcare Center (CHC) across Haryana, Karnataka, Maharashtra, Tamil Nadu and Uttarakhand between Dec 2021 to Mar 2025. The programme focused on strengthening diagnostic capacity, essential equipment availability and readiness of PHCs aligned with Indian Public Health Standards (IPHS) norms.

HHSIF engaged **Price Waterhouse Chartered Accountants LLP (PWCALLP)** to conduct the impact assessment of the CSR project – ‘Strengthening Rural Healthcare – PHC Upgradation’.

The assessment followed a **qualitative approach** using **KIs and IDIs** with key programme stakeholders. Interactions were conducted with Medical Officers, nursing staff, patients, the implementing partner and the HHSIF team across four states.

Need for the intervention

- **Limited diagnostic capacity at the primary level:** Absence of essential and advanced laboratory equipment limited comprehensive diagnosis, delayed reports and led to avoidable referrals.
- **Community Perception and Trust in PHC / CHC Services:** Repeated referrals, limited diagnostic availability and service interruptions shaped PHCs/CHCs as transit points, negatively affecting health-seeking behavior.

Impact Created:

Strengthened Clinical Readiness and Facility Functioning Through Reliable Diagnostics and Essential Equipment:

- Upgraded diagnostic and essential equipment enabled same-day investigations, reduced turnaround time and improved delivery room and emergency readiness.
- Equipment aligned to facility requirements, actively utilised and supported better clinical decision-making while reducing dependence on external labs

Enhanced Workflow Efficiency, Staff Coordination and Operational Confidence Among PHC Teams:

- Improved infrastructure reduced manual workarounds, improved coordination among staff and eased management of OPDs, ANC days and immunisation sessions.
- Reliable equipment and organised workflows increased staff confidence and supported smoother service delivery across locations

Improved Patient Confidence, Faster Care-Seeking and Higher Uptake of PHC Services:

- Communities increasingly used PHCs as trusted points of care, with facilities reporting noticeable increases in OPD attendance post-upgradation.
- Reduced waiting time, on-site diagnostics and quicker consultations improved care-seeking behaviour and follow-up adherence.

Reduced Referral Rate Through Expanded Local Care Management and Stabilisation Capacity:

- Upgradation addressed foundational gaps, enabling PHCs to manage more conditions at the primary level in alignment with IPHS-mandated functions.

- Faster diagnosis and improved stabilisation capacity reduced avoidable referrals ensured appropriate escalation and reduced patient expenses

Improved Community Health Outcomes and Reduced Household Burden Through Accessible Care:

- On-site diagnostics reduced travel, wage loss and out-of-pocket expenses, especially benefiting remote and low-income communities.
- Same-day reports and strengthened maternal, child and emergency services improved timeliness of treatment and adherence to follow-ups.

Recommendations:

1. Strengthen Post Warranty Maintenance Systems for Long Term Equipment Functionality

While PHCs acknowledged the quality and stability of newly installed diagnostic and maternal newborn care devices, maintenance after the expiry of one year warranty period should be addressed.

A structured model of post warranty upkeep can be ensured, whether through extended warranty agreements, AMC add-ons or inclusion of CSR supplied equipment in existing repair schedules at district level. This would ensure uninterrupted functioning. This is especially important for high end machinery provided to the PHCs, which directly influence timely diagnosis, emergency stabilisation, and maternal and newborn outcomes.

2. Consider Provision of Enabling Infrastructure to Optimise Use of IPHS-Aligned Equipment and Ensure Service Continuity

All core medical and diagnostic equipment under the programme was provided in alignment with Indian Public Health Standards (IPHS) and based on assessed facility requirements. To further support smooth execution and uninterrupted service delivery, select enabling infrastructure—over and above IPHS provisioning—may be considered.

Targeted additions such as power backup for diagnostic equipment, air-conditioning in OT and delivery rooms, RO water systems for patient use, and assured power supply during emergency stabilisation would enhance operational reliability. These measures would help PHCs fully leverage the equipment already provided, minimise service disruptions, and strengthen continuity of care, particularly in high-volume facilities.

Comprehensive analyses, detailed findings, observations and recommendations are presented in the subsequent sections of this report.

1. About Honeywell Hometown Solutions India Foundation¹

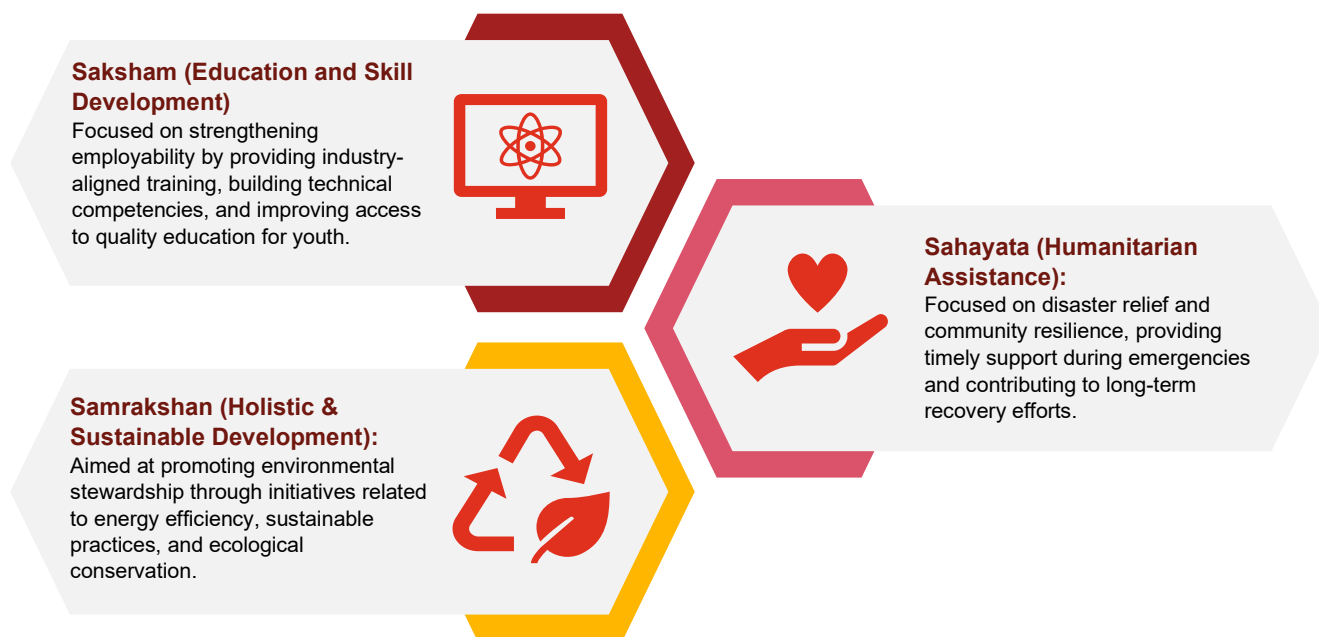
Honeywell Hometown Solutions India Foundation (HHSIF) is the corporate social responsibility arm of Honeywell in India. The Foundation focuses on creating sustainable and inclusive impact by supporting communities through initiatives in education, skill development, environmental sustainability, and humanitarian assistance.

HHSIF's approach is centred on improving access to quality education and enhancing employability among youth, particularly those from underserved and marginalised backgrounds. A key priority is to bridge the gap between academic learning and industry requirements by enabling students to acquire industry-relevant skills and practical exposure, thereby preparing them for future employment opportunities.

The Foundation works in close collaboration with onground partners, academic institutions, and industry experts to design and deliver programmes that are aligned with current market needs. This collaborative model ensures that beneficiaries receive not only technical training but also exposure to real-world applications and industry practices.

HHSIF's CSR initiatives are guided by key thematic areas, including:

Figure 1: HHSIF Key Focus Areas



Through these focus areas, HHSIF aims to create long-term, scalable impact while contributing to inclusive growth and sustainable development across communities.

¹ Source: [HHSIF's Website](#)

2. About the Programme under Assessment

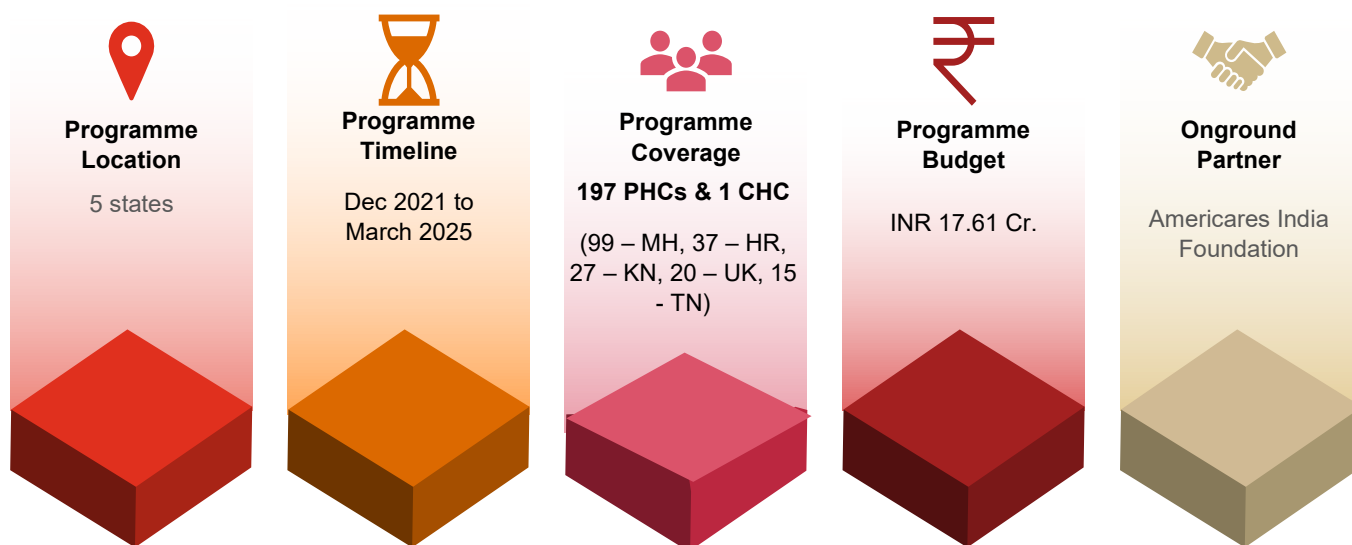
Healthcare is fundamental to human development, enabling individuals to live healthier and productive lives while supporting social & economic well-being. In India, an extensive network of public health facilities across rural and urban areas is intended to ensure access to essential health services close to communities. Primary healthcare facilities serve as the first point of contact for most populations and are crucial for promoting preventive care, early identification of health conditions, and continuity of treatment, especially in rural and remote settings.

India's health profile is evolving, with non-communicable diseases such as cardiovascular conditions, diabetes and chronic respiratory illnesses emerging alongside persistent communicable health concerns. This shift places growing responsibility on Primary Health Centres (PHCs) to support early screening, timely diagnosis and ongoing management of chronic conditions, in addition to routine and maternal health services. While PHCs are expected to address an increasingly broad range of health needs, many operate with limited infrastructure, diagnostic capacity and functional support systems. These elements often restrict on-site service delivery and result in higher referrals even for basic care, affecting service quality and continuity of care in public health facilities.

Recognising these systemic challenges, HHSIF, in partnership with AmeriCares India Foundation as the Implementing Partner (IP), supported strengthening of selected PHC in rural and remote areas across 5 states Haryana (HR), Karnataka (KN), Maharashtra (MH), Tamil Nadu (TN) and Uttarakhand (UK). The programme focused on enhancing facility readiness by addressing critical gaps in diagnostic capabilities, essential medical equipment, and enabling infrastructure, where required.

Below is the snapshot of key programme details:

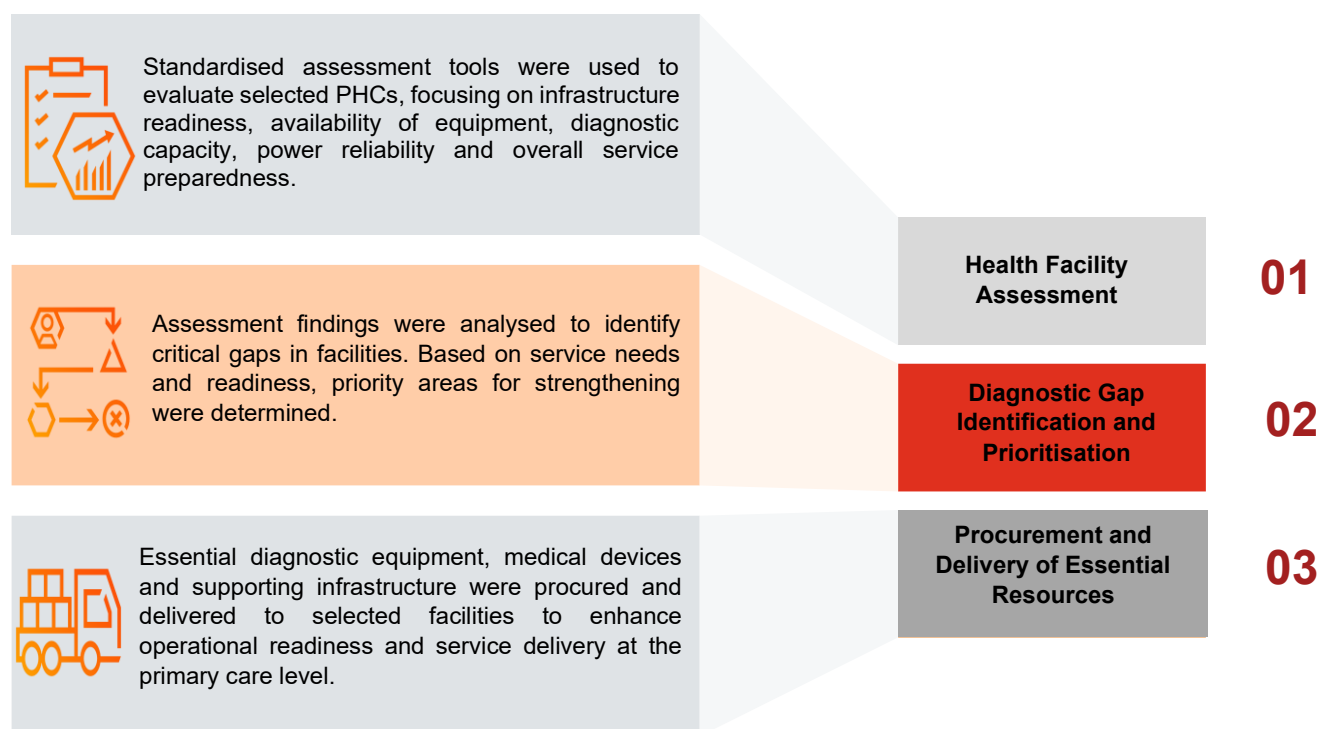
Figure 2: Key details of the programme under assessment



The programme undertook a series of activities for noting the specific needs of the PHCs and thereby fulfilling them through the intervention, as depicted below (refer Fig 3)²:

² Source: MoU documents from FY 2021 to 2025

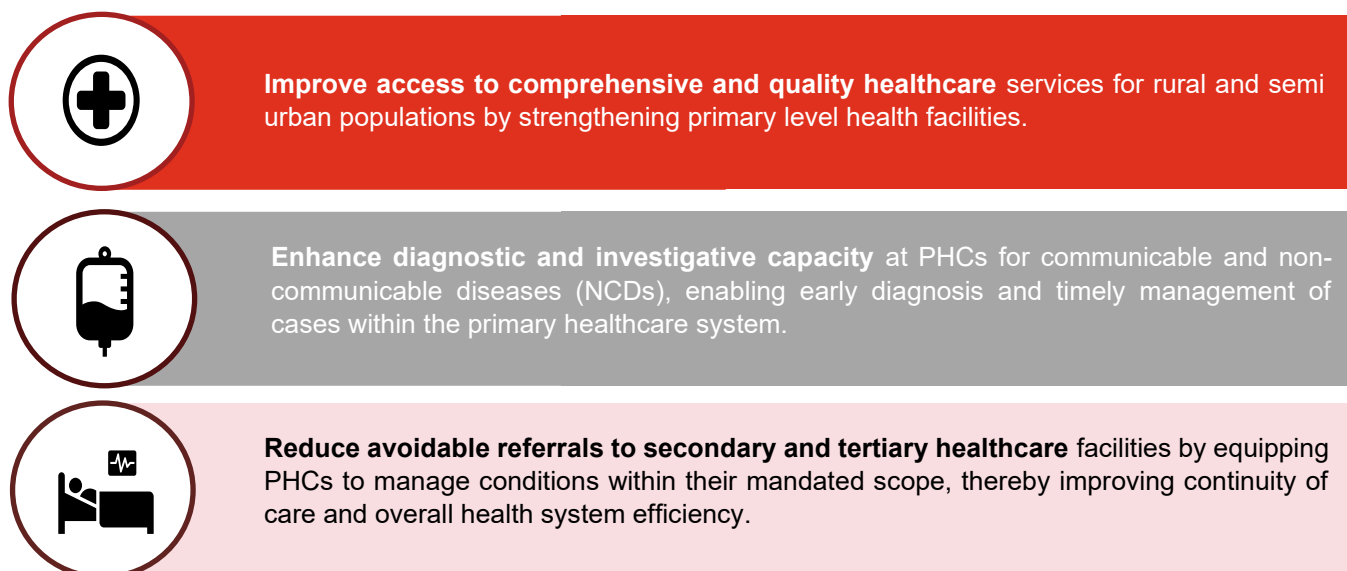
Figure 3: Key Activities undertaken for PHC Upgradation



Intended Programme Outcomes and other key details of the programme³

Based on the programme design and the key performance indicators outlined in the Memorandum of Understanding (MoU), the intervention was intended to achieve three key outcomes (refer Figure 4) .

Figure 4: Intended outcomes of the programme



³ Source: MoUs (Dec 2021 to March 2025) and year wise programme completion reports shared by HHSIF and Onground Partner

3. Method of Impact Assessment

HHSIF engaged PWCALLP to conduct an impact assessment of the '**Strengthening Rural Healthcare – PHC Upgradation**' programme implemented in 5 states (Haryana, Maharashtra, Karnataka, Tamil Nadu and Uttarakhand) covering 197 PHCs & 1 CHC between Dec 2021 to March 2025. The scope of work included reviewing the Key Performance Indicators (KPIs) established by HHSIF's management within the project implementation framework, focusing on the project's output, outcomes, and overall impact. The assessment framework followed **Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability (IRECS Framework)**, and recommendations were provided to support further evaluation and decision-making regarding the project's performance.

IRECS Framework used for the Impact Assessment



Inclusiveness

Ability of different stakeholders, particularly poorest and most marginalised to access the benefits of activities



Relevance

Are the services / inputs in the programme able to meet community priorities? How was the planning done? Was it participatory?



Effectiveness

Have the activities been able to effectively address community expectations? How efficiently have the resources been deployed, monitored and utilised?



Convergence

Degree of convergence with government/other partnerships; relationship between individuals, community, institutions and other stakeholders



Sustainability

Do communities feel ownership over assets created by activities and/or will the Project initiated community interventions sustain even after the exit?

The overall methodology adopted for conducting the impact assessment study can be categorised into four stages as illustrated below in Figure 5:

Figure 5: Key Stages of Impact Assessment

Stage 1: Desk Review

- A detailed understanding of the interventions was obtained through an inception meeting with HHSIF team.
- The scope of work was agreed upon, and HHSIF expectations were understood.
- A desk review of programme documents (FY wise MoUs, filled HFAs & completion reports) was undertaken.
- Mapping of programme stakeholders was carried out, based on the desk review and preliminary interactions with key stakeholders and in consultation with the HHSIF team for interaction purposes.

Stage 2: Planning and tool preparation

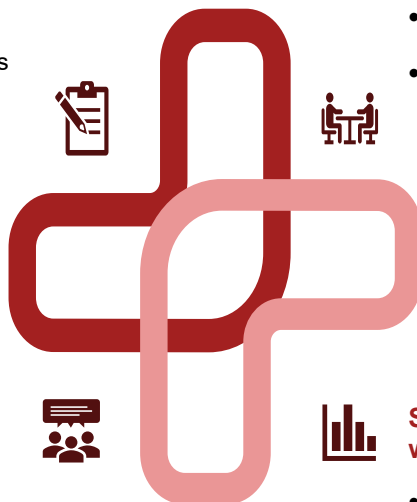
- The data collection plan was finalised in consultation with the HHSIF team and the Onground partner.
- Key indicators and research tools were finalised.
- The HHSIF team was apprised of the data collection plan for the field visit.

Stage 3: Data collection & field visit

- The field data collection process was initiated.
- In-Depth Interviews (IDIs) with Medical Officers, Nursing Staff at the PHCs / CHCs, Patients, On-ground Partner Field team member, and HHSIF team representative were conducted.

Stage 4: Data analysis and report writing

- The key findings were assimilated to better analyse the data.
- IRECS analysis was conducted using primary and secondary data.
- The draft of the impact assessment report was prepared for the HHSIF team.
- Feedback received from HHSIF was incorporated and the report was submitted to HHSIF for their management's consideration.



3.1. Sampling plan

The programme's impact was assessed using qualitative approach. For the assessment, multiple interactions were conducted to gather comprehensive feedback from stakeholders, including **In-Depth Interviews (IDIs)**, and **Key Informant Interviews (KIIs)**. These samples were drawn from four states including **Haryana, Karnataka, Maharashtra and Uttarakhand**.

Basis the discussion with HHSIF and IP, In-person interactions were conducted at 2 PHCs locations both in Maharashtra (Pune District) and Karnataka (Bengaluru District). Additionally, virtual interactions were organised with Medical Officers from Community Health Centre (CHCs) in Haryana (Charkhi Dadri District) and PHCs Uttarakhand (Dehradun District). Since the onground partner had no active programme team in Tamil Nadu post completion of this programme, this location was excluded in consultation with HHSIF. For Haryana and Uttarakhand locations, interactions with only the Medical Officers (MOs) were organised. Type of stakeholders interacted with has been detailed in the table below:

Table 1: Qualitative sampling plan

Stakeholder Name	Type of Interaction	Mode of interaction	No. of interactions
Medical Officer (Haryana & Uttarakhand)	KII	Virtual	3 (1 MO in Haryana responsible for 2 CHCs) & 2 MO in Uttarakhand)
Medical Officer – (Maharashtra & Karnataka)	KII	In-Person	4 (2 in Pune & 2 in Bengaluru)
Nursing Staff	IDI	In-Person	4 (2 in Pune & 2 in Bengaluru)
Patients	IDI	In-Person	4 (2 in Pune & 2 in Bengaluru)
Americares Team	IDI	In-Person	1
HHSIF Team	IDI	Virtual	1
Total			17

3.2. Assumptions and Limitations

General:

- The procedures we will be performing will not constitute an audit, examination or a review conducted in accordance with generally accepted auditing standards or attestation standards in India or elsewhere.
- We will not carry out any work or make any enquiries of management after the date of our Impact Assessment Report. Our Impact Assessment Report will not incorporate the effects, if any, of events and circumstances which may occur, or information which may come to light, after the date of our Impact Assessment Report.
- Our Impact Assessment Report will not be a substitute for any enquiries and procedures that Client shall otherwise undertake and judgements Client shall make for any purpose.
- We have not been engaged to, nor will we, provide any management functions or make management decisions.
- PW will not act in the capacity of the Client management; the Client will identify qualified personnel responsible for overseeing the CSR Project(s). We will not assign responsibilities to Client personnel. It will be the responsibility of the Client to identify the core member team who will assist us in this assignment. We will not act in a supervisory capacity over members of Client.
- The study did not include conducting any KYC checks of the implementing partner, beneficiaries interacted on fields.
- We will not chair any internal meeting of the Client or represent the Client / Client's management in meetings with the other partners and/or beneficiaries.
- We shall not perform any independent verification or assessment for verifying the completeness, accuracy, correctness, authenticity or genuineness of the documents to be provided by any concerned party.
- We will not provide any solution/recommendation for dispute resolution, for the Client, with the NGOs/ stakeholders.
- We should not be held responsible for slippage of schedule due to non – availability of personnel from Client side and delay in providing information or obtaining feedback or facilitating local consultations.
- Our scope of work, including any advice / assistance, will be limited to the scope of Services specifically defined in the Contract. We will not be responsible for the implementation of our recommendations. Any additional work beyond the scope of the assignment shall only be carried out upon mutual agreement by both parties.
- All information or data required for the assignment will be provided by the Client to PW. Any discrepancy in data or wrong information provided by any respondent shall be sole responsibility of the Client.

- Completion of Delivery of the Services is subject to, among other things, Client's timely cooperation including receiving necessary information and timely response to PW's queries. PW will keep Client informed of its progress and of any proposed changes in this timetable should PW believe it will be unable to complete delivery of the Services by the requested date.
- If there are any circumstances that reasonably restricts travel or physical presence of our personnel at your office/location, then without prejudice to your payment obligations, you shall allow such personnel to work from home or other remote location till the time such reasonable restrictions exist. Any delay/default in performing our obligations arising from such restrictions, shall not be attributable to us and shall not be considered a breach on our part and no consequent damage/penalties etc. arising there from would be imposed on us.
- PW will not be designing and/or implementing a CSR system for the Client or designing processes and controls related to it. This assignment does not relate to internal control over financial reporting and does not generate information that is related to accounting records or financial statements.
- We will not finalise the Client's CSR policy, CSR Project's implementation plan and monitoring & evaluation (M&E) framework relating to CSR. PW will only provide recommendations for improvements in the select CSR Project(s) assessed for management's consideration.
- We will not prepare any policy and procedures manuals and will not be responsible for the implementation of our recommendations and management remediation plan.
- We will be responsible only for providing options for consideration of the Client and not make any management decision for selection, prioritization and implementation of the same.
- The current sample estimated is indicative in nature and may change basis the actual condition on the field and availability/non availability of respondents, further information shared by **HHSIF** etc.

Pertaining to this report:

- The report prepared by the PWCALLP is based upon the (a) information/ documents provided by HHSIF and its onground partner and (b) data collected by the PWCALLP team. PWCALLP performed and prepared the Information at the client's direction and exclusively for the client's sole benefit and use pursuant to its client agreement. Our report is based on the completeness and accuracy of the above-stated facts and assumptions, which if not entirely complete or accurate, should be communicated to us immediately, as the inaccuracy or incompleteness could have a material impact on our conclusions.
- PWCALLP's work was limited to the samples/ specific procedures described in this report and were base only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as respondents. Accordingly, changes in circumstances/samples/procedures or information available could affect the findings outlined in this report.

4. Key Findings and Analysis

This section provides an overview of key findings that emerged from the discussions with key stakeholders undertaken both – in-person and virtually:

4.1. Need for the intervention

The team noted the following challenges that emerged prior to programme intervention:

- **Limited diagnostic capacity at the primary level:** While basic diagnostics were available, the absence of essential and advanced laboratory equipment limited comprehensive diagnosis at PHCs and CHCs, particularly for NCDs and routine investigations. This resulted in extended test durations, delays in report availability, and avoidable referrals to higher facilities such as district hospitals.
- **Community Perception and Trust in PHC / CHC Services:** Repeated referrals, limited diagnostic availability and interruptions in services shaped community perception of PHCs / CHCs as transit points rather than comprehensive and trusted care centres, negatively influencing their health seeking behavior.

4.2. Impact of the intervention

4.2.1. Strengthened Clinical Readiness and Facility Functioning Through Reliable Diagnostics and Essential Equipment

- Following the upgradation supported by HHSIF, an **enhancement in the ability to deliver timely and accurate primary healthcare services** was noticed at all PHCs that the team visited. Prior to the intervention, each PHC/CHC visited and interacted with described significant constraints caused due to outdated laboratory tools, rusted or non-functional equipment, and lack of diagnostic equipment and personnel that forced providers to depend on external facilities for even the most basic tests.
- The Medical Officer (PHC Chakrata, Uttarakhand) shared that prior to the intervention, basic tests were either not available or took two to three days because samples had to be sent to external laboratories for testing, which delayed diagnosis and treatment. However, with the installation of the biochemistry analyser, Hematology Analyser and HbA1c system, the PHCs can now conduct these investigations within the centre itself, **enabling same day diagnosis for most of the tests and reducing turnaround time for patients significantly.**
- Similar gains were observed in Maharashtra. Khanapur PHC staff shared that earlier, frequent shortages and outdated tools affected service quality. The upgraded equipment including **centrifuge, child weighing scales, AMBU bags and emergency kits** helped restore routine functioning and extend reliable services to neighboring villages.

Figure 6: Hematology Analyser & Serum Centrifuge made available in PHCs (Pune District)



Figure 7: Delivery table provided in one of the PHC in Pune and Baby Warmer at a PHC in Bengaluru



- In Bengaluru's Chandapura PHC, the replacement of a decade old newborn and delivery room equipment **directly improved maternal and neonatal care**. Staff further shared that the delivery table they previously relied on had become unstable over the years, requiring repeated patchwork repairs to continue its usage. With the new advanced table installed under the programme, they are now able to position mothers safely during labour and manage complications such as postpartum hemorrhage with greater control, significantly improving delivery room readiness.
- PHC teams across states highlighted that the **equipment closely aligned their service needs** rather than being generic, indicating that the provision was appropriate and responsive to actual clinical requirements. This has strengthened staff confidence in managing emergencies, conducting camps, or handling routine OPDs more efficiently. The assessment team also observed during field visits that equipment identified as priority requirements through facility assessments was available and installed at the PHCs visited, supporting effective utilisation.
- The On-ground Partner also highlighted that **equipment selection was guided by facility level assessments** and validated in consultation with district health authorities. According to them, only those devices that aligned with the PHC's service load and utilisation potential were prioritised, which helped ensure that all supplied equipment was actively used.
- Across all locations, Medical Officers shared that the upgraded diagnostic equipment and essential tools fundamentally changed how the **facilities could respond to routine and urgent healthcare needs**. Earlier, PHCs struggled with limited diagnostic capacity, unreliable equipment, and basic service gaps that delayed care and prompted frequent referrals.

The upgradation has enabled PHCs to move from a referral dependent environment to a more capable, self-sufficient system where first point of service and stabilization can be handled locally. This has contributed to reduced treatment delays, improved the quality of clinical decision making, and strengthened the ability of PHCs to deliver more comprehensive and dependable primary care aligned with the vision of strengthened public health delivery. PHC staff further indicated that the equipment provided was relevant to their needs and actively utilised for routine and emergency care, reflecting appropriateness and effective use of the support extended.

4.2.2. Enhanced Workflow Efficiency, Staff Coordination and Operational Confidence Among PHC Teams

- Infrastructural upgrade also made an impact on internal functioning of healthcare facilities. Before upgradation, staff across states described **spending substantial time managing workarounds** whether shifting nonfunctional equipment across rooms, managing long queues with limited seating, or coordinating referrals for even simple diagnostic needs. Nursing staff explained that they were often fatigued, especially during ANC sessions and immunisation camps, because the supporting equipment was unreliable or inadequate.

After receiving **upgraded devices along with other supporting equipment** (refer Figures 7 & 8) such as benches, organising trays, crash cart, OT Table (used for deliveries as well), Almirahs, baby warmers, trolleys, bio waste bins, adult and new born weighing machines and other essentials, staff reported **far more structured workflows**.

“With reliable equipment now in place, we are able to organise multiple camps—such as leprosy, ANC and vaccination camps—without the operational stress we faced earlier. The improved delivery room setup has also allowed us to resume normal delivery services, which were difficult to manage when equipment was inadequate.” - Nursing Staff, PHC Anungondunhalli (Bengaluru)

Figure 8: Crash Cart & Newborn child weighing scale



- In Uttarakhand, the Medical Officer highlighted that **lab related improvements reduced manual effort and freed up staff time** for patient engagement. In Karnataka, the upgraded seating areas created comfort for ANC patients and elderly beneficiaries, contributing to quieter, better managed waiting areas and reducing the burden on nursing staff for crowd management. Staff also reported smoother coordination between lab technicians, MOs, and nursing teams, with tasks being distributed more naturally due to the availability of appropriate equipment.

- Importantly, staff members including MOs across geographies mentioned that the improved setup **enhanced their professional confidence**. A Head Nurse in Bengaluru explained that earlier, working with outdated instruments created constant anxiety about equipment failure, but the new devices made the staff feel confident on undertaking their respective daily tasks appropriately. This sense of capability is crucial in PHCs that work with limited human resources and high patient load.

Figure 9: Honeywell branding in PHCs visited in Maharashtra & Karnataka



- PHC support staff and On-ground Partner field teams highlighted the short turnaround between needs assessment and delivery of equipment. Once facility requirements were finalised, procurement and installation were completed within a streamlined timeline, enabling prompt installation and early operationalisation of approved equipment. This efficient approach supported smooth integration of upgraded devices into routine service delivery and helped ensure uninterrupted access to essential services at the facility level.
- Alongside these implementation processes, field observations also noted variability in the visibility of programme branding across supported equipment and facilities. Consistent branding may help strengthen recognition of CSR support at the facility level without affecting routine service delivery.
- Some PHCs also pointed out infrastructure gaps that affected optimal utilisation of the upgraded devices. Support staff in Bengaluru and Pune PHCs noted the need for power backup solutions, air-conditioning for OT and delivery rooms, and RO water systems for patient use, which would further help ensuring uninterrupted and efficient functioning of key equipment.
- Across multiple PHCs, Medical Officers shared that the equipment provided under the intervention came with an average warranty period of one year, during which no major functional issues were reported. Staff noted that the improved quality of devices contributed to stable functioning in the initial months. Beyond the warranty period, most PHCs indicated that maintenance in their PHC is generally managed through technical partners empaneled by the Health Department, who service multiple government supplied devices during their scheduled visits. However, a few facilities particularly in Haryana highlighted that visiting technicians are sometimes reluctant to service equipment procured through CSR support, indicating a gap that may require system level coordination to ensure long term upkeep.

Based on this, it can be inferred that the improvements in equipment and internal arrangements have helped PHC teams now **manage their daily workload more efficiently**. Staff now operate within a more **reliable and organised environment**, which allows them to focus on patient care rather than compensating for infrastructural gaps. Better quality tools, smoother coordination between clinical and laboratory teams, and **reduced operational friction** have all contributed to a work setting where responsibilities are clearer and service delivery is more predictable. Importantly, the **increased sense of control and confidence reported by staff** suggests that the upgradation has improved their efficiency.

4.2.3. Improved Patient Confidence, Faster Care-Seeking and Higher Uptake of PHC Services

Communities demonstrated a noticeable shift in how they perceive and utilise the PHCs. PHCs that earlier had limited capacity were increasingly used as points of care following improvements in on-site diagnostics, clinical responsiveness and patient processes. These changes supported more consistent use of PHCs by the community for routine, preventive and follow-up services. This renewed confidence reflected in higher footfall and more regular attendance for preventive and follow-up services, as shared by the Medical Officers across PHCs.

- Prior to the upgradation, patients in several states reported turning to CHCs, private laboratories or local chemists because essential tests or basic services were often unavailable at the PHC. With the **strengthened facilities**, PHCs are now able to meet such routine needs within the facility itself, making them a more convenient and credible option for households who earlier relied on external providers.
- In consensus to this, the PHC staff also reported a **noticeable rise in OPD attendance** following the upgradation, reflecting a shift in **patient confidence and preference for PHC-based care**. PHCs such as Khanapur (Pune) recorded on an average, increase from 70 – 80 to around 110 OPD (approximately 40% increase in OPDs) cases per day. In Bengaluru, Chandapura PHC, which caters to a large population including migrant families, reported steady use of strengthened maternal and neonatal services. Nursing staff there shared that 10 to 15 deliveries continue to take place each month, supported by the upgraded equipment.
- Patients during interactions also expressed that their **waiting time at the PHC has reduced considerably**. A beneficiary of a PHC in Karnataka explained that they receive counselling and medicines within 15 minutes most days, reflecting smoother internal coordination and reduced dependency on external laboratories. For daily wage earners, this reduction in waiting time and travel directly lowers opportunity costs and makes the PHC a more practical choice for routine healthcare needs.
- Medical Officer from Uttarakhand (PHC Dudhli) shared that they are able to observe behaviour changes among the communities availing of PHC services. Earlier, patients normally avoided recommended tests or did not return with reports from external labs. With diagnostics now available on site, patients show **greater willingness to undergo investigations and comply with follow up advice**, resulting in earlier diagnosis and more consistent monitoring of chronic conditions. This pattern was particularly evident in Ante-Natal Care (ANC) services and NCD clinics, where same day test results improve counselling and treatment adherence.

"I have been coming to this PHC for nearly 30 years. Earlier, many services were unavailable, and we were often asked to go elsewhere. Now, everything gets done here itself." - Patient, Khanapur PHC (Maharashtra)

4.2.4. Reduced Referral Rate Through Expanded Local Care Management and Stabilisation Capacity

A Primary Health Centre is designed to serve as the first point of contact for outpatient care, basic diagnostics, maternal and newborn services, and management of routine acute illnesses (NCD & Non-NCD cases both). As per Indian Public Health Standards (IPHS)⁴, PHCs are expected to manage conditions that fall within the scope of primary care and to refer patients to higher level facilities only when specialised investigations, advanced imaging, surgical procedures or intensive care are required. In practice, however, many PHCs were compelled to refer patients even for conditions that could ordinarily be managed at the primary level, largely because essential diagnostic tools, basic emergency equipment or functional delivery room infrastructure were not available.

- The upgradation directly addressed these foundational gaps by providing them with the tools basis their requirement to **meet the service expectations defined in national guidelines**. As a result, staff across Haryana, Uttarakhand, Maharashtra and Karnataka reported **reduction in avoidable referral rates**.

⁴ https://nhsrcindia.org/sites/default/files/PHC%20IPHS_2022_Guideline_pdf.pdf

- During interactions, HHSIF team emphasised that the objective of the initiative was to strengthen public primary healthcare systems rather than create parallel service delivery. The focus was on enabling PHCs to **perform their mandated functions more effectively within the existing government framework**.
- Tests that previously required external support such as basic blood investigations or emergency first line management are now handled within the PHC. This has enabled patients to receive care closer to home and **eased unnecessary pressure on higher-level public health facilities**.
- In Haryana, Medical Officer explained that stabilisation of pediatric respiratory issues using nebulisers (equipment support provided by HHSIF) has **significantly reduced emergency referrals**. The availability of essential delivery-room equipment at facilities has strengthened their ability to manage routine, uncomplicated deliveries as mandated for PHCs, while ensuring that any C-section requirements or delivery-related complications continue to be referred to the CHC or district hospital as per IPHS referral norms. A PHC in Uttarakhand, (Dudhli), noted that emergency care for road accidents, dog bites, and snake bites could now be managed more effectively before referral.
- PHC / CHC staff also observed that **faster diagnosis resulted in better referral decisions**. Rather than sending patients prematurely or out of caution, PHCs could determine who genuinely needed secondary care. This helped reduce both patient expenses and the workload of higher-level facilities. In several interviews, providers emphasised that the community now sees the PHC as the first point of contact for larger parts of their healthcare needs rather than considering it for minor illnesses only.

“Earlier, we struggled to manage emergencies. Now, we stabilise patients and then refer them with proper coordination to the receiving hospital.” – Medical Officer, PHC Dudhli (Uttarakhand)

PHCs are now better able to **handle the level of care expected at the primary tier**, while ensuring that **escalations are appropriate and clinically justified**. This shift has strengthened the integrity of the referral pathway and reinforced the PHC's role within the broader public health system.

4.2.5. Improved Community Health Outcomes and Reduced Household Burden Through Accessible Care

Various programme stakeholders (MOs, Support staff, IP) across states shared that patients often travel several kilometers (an average of 5 KMs at least) to reach a government hospital when required services are not available at their nearest PHC. If their local PHC is unable to provide the required services, which can translate into **lost wages, out-of-pocket travel expenses, and delays in seeking care**.

- In this context, the presence of a PHC that is adequately equipped and functionally prepared marks an **improvement in accessibility**. With essential diagnostics and routine clinical services now available within the PHC itself, communities are better able to address health concerns promptly, receive appropriate counselling, and undertake travel to higher level facilities only for conditions that lie beyond the mandate and capacity of primary care facilities.
- In regions like Uttarakhand, where geographical terrain makes travel difficult, same day reporting for basic tests such as Complete Blood Count (CBC) or urine analysis has **allowed patients to start treatment immediately, preventing complications**. Providers noted that more **patients now adhere to follow up** schedules because they no longer need to travel long distances for basic investigations.
- Several PHCs reported improved outcomes in maternal and child health. In Haryana, MO highlighted that reliable neonatal equipment enhanced the safety and comfort of newborn care. In Maharashtra, frequent nebulisation for children with respiratory infections helped prevent escalation and unnecessary hospitalisation.

- The impact was equally meaningful regarding the financial stress. Patients shared that earlier, multiple visits to CHCs or private labs affected their finances and caused loss of wages, as large proportion of the patients who avail PHC facilities come from weaker economic background, as mentioned by IP. Having **reliable diagnostic and clinical services available within the PHC** allowed families to **save time, money, and effort**.

"The community saves both time and money now. Earlier, even the smallest test meant travelling far and losing a day's work, but most of those services are available at the PHC itself." – Medical Officer, PHC in Charkhi Dadri District (Haryana)

The intervention has therefore contributed not only to more **timely and comprehensive care**, but also to wider **social and economic relief for community members**, reinforcing the PHC's position as a critical and dependable institution supporting local well-being.

5. IRECS Framework

Based on the interactions with the key stakeholders and desk review, the impact of the programme was also assessed on the IRECS framework parameters. The IRECS analysis summary has been presented in the table below.

Table 2: IRECS Table

Parameter	Assessment from Study
Inclusiveness	- The upgradation improved access for populations who earlier had to travel several kilometres to higher level facilities for basic tests and routine care, particularly affecting daily wage earners, ANC beneficiaries, elderly patients, and low-income households. - PHCs serving diverse communities including migrant populations in Bengaluru and multiple nearby villages in Maharashtra and Uttarakhand, reported increased utilisation of services, indicating broader inclusion across demographic groups. - On-site availability of diagnostics and routine care enabled more patients to seek timely treatment and adhere to follow ups schedule, reducing dependence on private laboratories and reducing out-of-pocket expenditure.
Relevance	- The intervention directly addressed critical gaps reported by PHCs across states such as outdated laboratory tools, nonfunctional delivery equipment, lack of emergency stabilisation tools, and shortages of essential devices (CBC analyser, Biochemistry analyser, HbA1c analyser, Centrifuge for serum separation), which were limiting service delivery. - Equipment provided matched facility specific needs rather than generic lists, as repeatedly emphasised by Medical Officers and nursing staff. - The upgrades aligned with the service expectations defined under IPHS norms for PHCs, enabling them to perform mandated primary care functions more effectively.
Effectiveness	- PHCs reported significant improvements in routine service delivery, including same day reporting of basic tests, enhanced ANC profiling, and timely management of common acute conditions. - Multiple PHCs reported a visible rise in daily outpatient attendance following the upgradation, indicating that strengthened service readiness and improved patient

Parameter	Assessment from Study
	experience have contributed to higher and more consistent utilisation of public primary healthcare services across locations. • Staff highlighted smoother workflows, reduced operational fatigue, improved coordination between clinical and lab teams, and stronger confidence in handling daily caseloads. • Enhanced readiness improved patient experience resulting in shorter waiting times, faster diagnosis, and reduced reliance on external facilities for basic investigations.
Convergence	• The intervention demonstrated coordination between HHSIF, Onground Partner, PHC staff, and District Health Authorities, especially during needs assessment, validation, and installation of equipment. • Provisioning of equipment complemented and further strengthened existing government service delivery processes rather than creating parallel systems, particularly evident in laboratory functioning and emergency stabilisation pathways.
Sustainability	• Improved utilisation patterns and stronger patient trust indicate that PHCs are better positioned to sustain higher service uptake without additional behaviour change efforts. • Government AMC mechanisms were available for some equipment categories, and staff expressed confidence in continuing to use devices effectively with periodic training support. • By strengthening core infrastructure and enabling PHCs to perform their mandated IPHS level services, the intervention supports long term operational stability and reduces dependence on higher facilities for basic care.

6. Alignment to the HHSIF's CSR Policy and the UN SDGs

The programme aligns with HHSIF's **Key Focus Area - Sahayata**⁵. It also supports the achievement of **Sustainable Development Goals**⁶, specifically SDG 3, SDG 10, SDG 16 & SDG 17.

- **SDG 3 (Good Health and Well-being)**: Improved access to same-day diagnostics, maternal and newborn services, and basic emergency stabilisation has strengthened frontline primary care. The intervention enabled patients to seek timely care within their own communities, reducing delays in treatment and improving early case management.
- **SDG 10 (Reduced Inequalities)**: Strengthening PHCs in rural, remote and economically weaker geographies ensured that essential services are available to populations who previously travelled long distances or relied on private providers. By reducing out-of-pocket expenditure and improving local access, the intervention narrowed disparities in healthcare utilisation among underserved groups.
- **SDG 16 (Strong Institutions)**: Upgraded PHCs demonstrated improved reliability, operational efficiency, and stronger adherence to IPHS mandated service delivery norms. The enhanced readiness and smoother workflows increased community confidence in public facilities, reinforcing the role of PHCs as credible institutions within the government health system.
- **SDG 17 (Partnerships for the Goals)** The initiative illustrates effective collaboration between Honeywell HHSIF, Americares India Foundation, PHC teams and district health authorities, resulting in targeted and relevant upgrades. The coordinated approach ensured that investments complemented government systems and built long-term capacity rather than creating parallel structures.



7. Recommendations

The following recommendations have been suggested based on our observation and the discussion with the programme stakeholders.

1. Strengthen Post Warranty Maintenance Systems for Long Term Equipment Functionality

While PHCs acknowledged the quality and stability of newly installed diagnostic and maternal newborn care devices, maintenance after the expiry of one year warranty period should be addressed.

A structured model of post warranty upkeep can be ensured, whether through extended warranty agreements, AMC add-ons or inclusion of CSR supplied equipment in existing repair schedules at district level. This would ensure uninterrupted functioning. This is especially important for high end machinery provided to the PHCs, which directly influence timely diagnosis, emergency stabilisation, and maternal and newborn outcomes.

2. Consider Provision of Enabling Infrastructure to Optimise Use of IPHS-Aligned Equipment and Ensure Service Continuity

All core medical and diagnostic equipment under the programme was provided in alignment with Indian Public Health Standards (IPHS) and based on assessed facility requirements. To further support smooth execution and uninterrupted service delivery, select enabling infrastructure—over and above IPHS provisioning—may be considered.

Targeted additions such as power backup for diagnostic equipment, air-conditioning in OT and delivery rooms, RO water systems for patient use, and assured power supply during emergency stabilisation would enhance operational reliability. These measures would help PHCs fully leverage the equipment already provided, minimise service disruptions, and strengthen continuity of care, particularly in high-volume facilities.

⁵ Source: <https://www.honeywell.com/in/en/csr#our-impact>

⁶ Source: <https://sdgs.un.org/goals>

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Impact Assessment Report: Holistic Rural Development Project

Honeywell Hometown Solutions India Foundation
April 2026

Price Waterhouse Chartered Accountants LLP

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List of acronyms

Acronym	Full Form
CSR	Corporate Social Responsibility
FGD	Focus Group Discussion
FY	Financial Year
HHSIF	Honeywell Hometown Solutions India Foundation
HRD	Holistic Rural Development
IDI	In-Depth Interview
KII	Key Informant Interview
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NRM	Natural Resource Management
P.V.	Photovoltaic
PWCALLP	Price Waterhouse Chartered Accountants LLP
RYK	Name of Respondent (used in success story)
SDG	Sustainable Development Goals
SF	Swades Foundation
ST	Scheduled Tribe
VDC	Village Development Committee
WATSAN	Water and Sanitation

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Executive Summary

About the Project:

Honeywell Hometown Solutions India Foundation (HHSIF) partnered with **Swades Foundation** to launch a **Holistic Rural Development** project in 243 villages of Raigad and Nashik districts. The project focuses on concentrated efforts within a limited area to ensure holistic community development. Its primary goal is to establish a sustainable governance framework across six key areas: **Water & Sanitation, Natural Resource Management, Water for Irrigation, Livelihoods (farm and non-farm), Solar/Clean Energy, and Education & Skilling.**

HHSIF engaged **Price Waterhouse Chartered Accountants LLP (PWCALLP)** to conduct the impact assessment of the CSR project – ‘Holistic Rural Development’.

The assessment employed a **mixed-methods approach**, combining quantitative and qualitative techniques for comprehensive insights. A quantitative survey was conducted with project beneficiaries, while the qualitative assessment included In-Depth Interviews (IDIs) with village development committee (VDC) representatives, field staff from the on-ground partner and HHSIF project team, Focus Group Discussions (FGDs) with community members, and Key Informant Interviews (KIIs) with Panchayat Raj Institution (PRI) members.

Need for the intervention

- **Severe Water Scarcity:** The community faced acute shortages of safe drinking and irrigation water. Women traveled long distances to fetch water, wasting hours and limiting agricultural activities mostly to a single crop season, reducing productivity.
- **Poor Sanitation and Hygiene:** Widespread open defecation due to lack of toilets contaminated water sources, causing waterborne diseases and compromising hygiene, privacy, and safety, especially for women and children.
- **Limited Livelihoods and Low-Income Diversification:** Reliant on subsistence farming with low income, the community had few alternative livelihood options due to inadequate irrigation and skill training. Many were landless or had marginal land, deepening poverty.
- **Lack of Clean and Sustainable Energy:** The village lacked reliable electricity and renewable energy, limiting household lighting, safety at night, and the quality of learning environments in schools and childcare centers.

Impact Created:

- The project has demonstrably delivered on its objectives, as evidenced by measurable improvements in key outcome indicators; for example, **95% of respondents (n=43) have year-round access to safe drinking water, and 86% of households (n=43) report receiving sanitation units, leading to a reduction in open defecation.**
- Water management interventions have effectively increased irrigation efficiency through solar-powered drip and lift irrigation systems, resulting in a **37% reduction in irrigation costs and a 12% increase in total land under cultivation.**
- There has been a significant improvement in crop yields: **paddy increased by 25%, urad by 24%, wheat by 35%, groundnut by 27%, and gram by 54%.**
- The **average annual income from agriculture** has increased from INR 26,742 to INR 39,258, representing a **47% rise.**
- Livelihood support has successfully diversified income sources, with 79% of beneficiaries (n=24) reporting increased income diversification and sustainable income generation, with **average annual incomes from livelihood activities reaching approximately INR 31,744.**

- Skill development initiatives have led to relevant skill acquisition, with **64% of trainees (n=14) confirming skills aligned to the job market**, 50% securing new employment, and 14% initiating self-employment, reflecting the effectiveness of capacity-building efforts.
- Clean energy interventions have **improved quality of life** by providing reliable lighting in homes, schools, and public spaces, enhancing safety and extending productive hours.

Recommendations:

Use Local Goat Breeds for Improved Survival and Sustainability

During consultations with Goatary beneficiaries, concerns were raised regarding the suitability of the goats supplied through the project. It was observed that these goats were not local breeds and, as a result, exhibited poor survival rates in the prevailing environmental conditions. This mismatch between breed and environment has adversely affected the goats' health and longevity. To enhance the effectiveness and sustainability of the project, it is recommended that future distributions focus on providing local breeds that are naturally adapted to the specific climatic and ecological conditions of the area. Utilizing indigenous breeds would likely improve survival outcomes, promote resilience to local diseases and environmental stresses, and thereby ensure greater long-term benefits for the beneficiaries and the community at large.

Study Limitations:

- **Geographical Coverage:** Initially, the impact assessment was intended to encompass both Raigad and Nashik districts. However, the implementation partner communicated that mobilisation would be possible only in Nashik, and only for a limited period of three days, which restricted the extent of sample coverage. Consequently, the implementation partner could mobilise limited number of beneficiaries, and field interactions remained restricted to a narrow operational window. As a result, the planned sample size of 138 could not be achieved. A maximum coverage approach was adopted, prioritising all accessible and willing beneficiaries within the available timeframe. This resulted in completion of 43 quantitative surveys, conducted exclusively in Nashik district. Raigad district could not be covered at all, thereby narrowing the geographic scope of the assessment and limiting the ability to measure the impact of the interventions across the broader range of project activities originally planned.
- **Limited Details of Project Activities:** The project reports shared during desk review period outlined overall objectives, outputs, outcomes, and anticipated impact. However, they provided limited detail on the specific activities undertaken, the processes followed, and the nature of support provided for each programme component. For instance, activity level details related to drinking water scheme and support for Safed Musali cultivation were not documented in detail. This lack of granular activity-level clarity restricted the ability to design more nuanced assessment tools, thereby limiting the scope of inquiry. With availability of detailed documentation, the assessment could have captured certain aspects of the project activities in greater depth.

Comprehensive analyses, detailed findings, observations and recommendations are presented in the subsequent sections of this report.

1. About Honeywell Hometown Solutions India Foundation¹

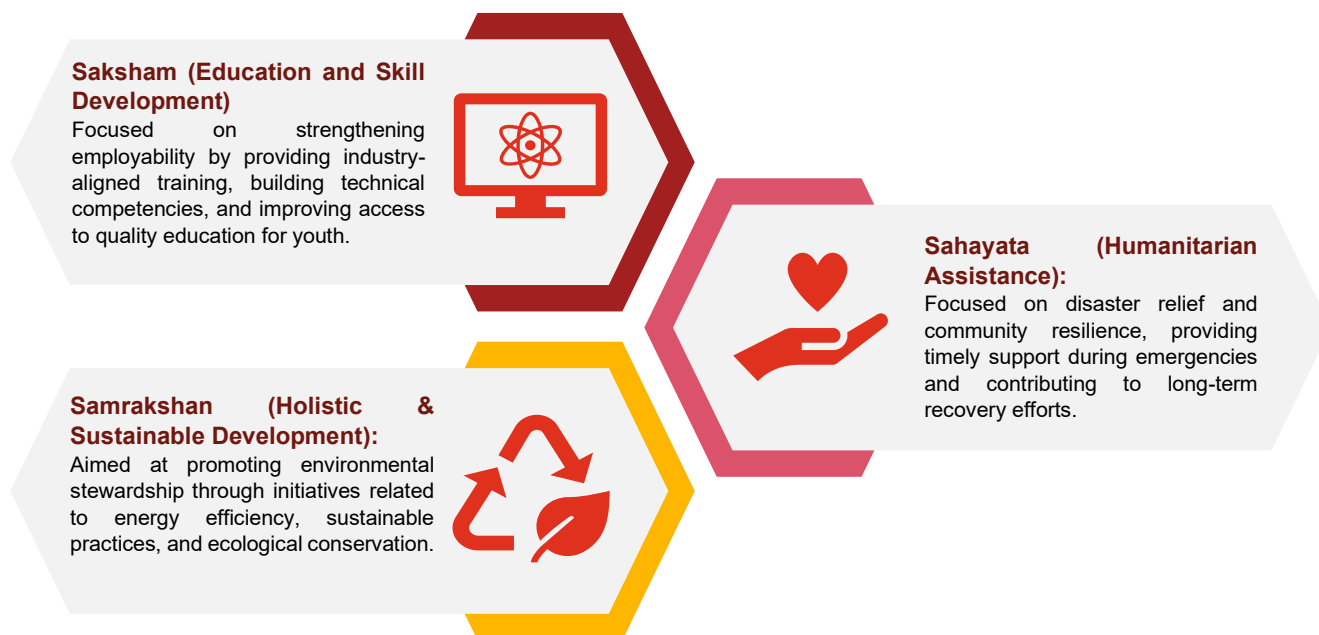
Honeywell Hometown Solutions India Foundation (HHSIF) is the corporate social responsibility arm of Honeywell in India. The Foundation focuses on creating sustainable and inclusive impact by supporting communities through initiatives in education, skill development, environmental sustainability, and humanitarian assistance.

HHSIF's approach is centred on improving access to **quality education and enhancing employability among youth**, particularly those from underserved and marginalised backgrounds. A key priority is to bridge the gap between academic learning and industry requirements by enabling students to acquire industry-relevant skills and practical exposure, thereby preparing them for future employment opportunities.

The Foundation works in close collaboration with implementation partners, academic institutions, and industry experts to design and deliver programmes that are aligned with current market needs. This collaborative model ensures that beneficiaries receive not only technical training but also exposure to real-world applications and industry practices.

HHSIF's CSR initiatives are guided by key thematic areas, including:

Figure 1: HHSIF Key Focus Areas



Through these focus areas, HHSIF aims to create long-term, scalable impact while contributing to inclusive growth and sustainable development across communities.

¹ Source: <https://www.honeywell.com/in/en/csr#our-impact>

2. About the project

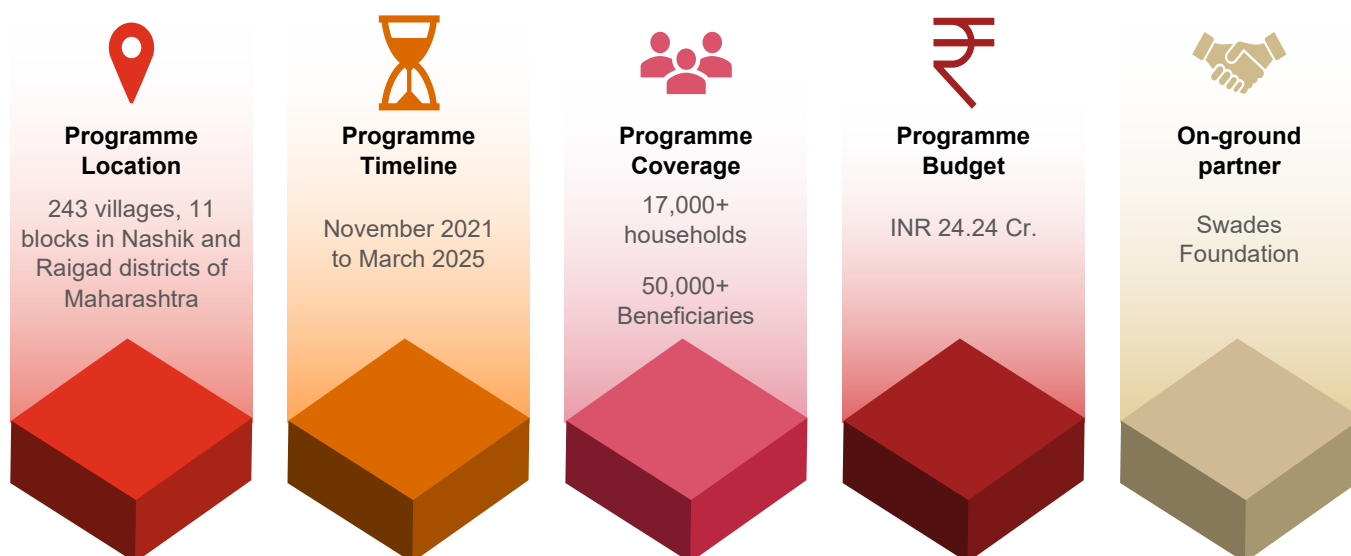
As mentioned in the MoU document, the project targets two districts characterised by a dense population, with a **significant proportion belonging to tribal communities**. Most residents rely heavily on agriculture as their primary source of livelihood. Approximately 80% of households earn less than INR 2 lakhs annually. This heavy dependence on a single income source exposes families to the risk of falling into persistent poverty, particularly if their main livelihood is affected. In addition to this economic vulnerability, the area faces serious challenges such as limited employment and self-employment opportunities, along with shortages of water for drinking and irrigation purposes.²

Responding to these issues, **Honeywell Hometown Solutions India Foundation** partnered with Swades Foundation (SF) to launch a **Holistic Rural Development (HRD)** project in 243 villages of Raigad and Nashik district. To ensure the holistic development of the community, **concentrated efforts are being made under the project**, which is therefore implemented within a limited geographic area. The project's main goal is to establish a sustainable governance framework by focusing on 6 key areas, **Water & Sanitation (WATSAN)**, **Natural Resource Management (NRM)**, **Water for Irrigation (WFI)**, **Livelihoods (Farm-based & Off-farm)**, **Solar / Clean Energy**, **Education & Skilling**.

The project specific objectives are to:

- Ensure that every household receives **safe and adequate drinking water** year-round.
- Improve **access to proper sanitation facilities** while promoting good hygiene behaviors within communities.
- Promote water conservation techniques, particularly by **transitioning from flood irrigation to drip irrigation** methods.
- Enhance local **income sources and stimulate economic growth by engaging rural populations** in both agricultural and non-agricultural livelihood activities.
- Provide **clean energy solutions**, such as the installation of solar-powered street lighting in communal village spaces.

Figure 2: Snapshot of the project under assessment³



² Source: MoU signed between HHSIF and SF

³ Source: Project information shared by HHSIF and SF

The key activities implemented under the Holistic Rural Development project include:

Table 1: Key Activities Implemented Under the Project⁴

Activity	Measuring Units	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024- 25	Total Achievement
Biogas Installation	Households				60	60
Dairy animal support	Households		20			20
Drumstick plantation	Households		22			22
Edu-Skilling Student	Number of students			2100		2100
Enterprise - Safed Musali Peeling and Washing Machine	Number				1	1
Fishing Net Distribution	Households		68	14		82
Food Forest	Households				12	12
Goatery support	Households		259	526	23	808
Meat Poultry	Households		26			26
Mini Flour Mill	Number of Flour mill	28				28
Mogra Plantation	Households				10	10
New Orchards Development	Households		52	1446	38	1536
NRM Bench Terracing	Acre				28	28
NRM Farm Pond	Number				12	12
Recharge Shaft	Number				5	5
Loose Boulder Structures (LBS)	Number				30	30
Jaltara (Recharge Shaft)	Number				240	240
Safed Musali Cultivation	Households				115	115
Construction of Sanitation Unit	Households	627	541	642	650	2460
School WATSAN	Number of schools			3		3
Skilling & Placement	Number of students	91		475	179	745
Solar for Anganwadi	Number of Anganwadi			4	11	15
Solar for homes	Households	646				646
Solar for school electricity	Number of schools			3	22	25
Solar for Street Light	Number	48	390	282	351	1071
Solar lamp for VDC	Number	4				4
Water Scheme (Drinking water pipeline connection)	Households	201	313	139	121	774
Water for Irrigation (WFI)	Acre	33.75	27	14	88	162.75

⁴ Source: Project Annual Report, Beneficiary details and KPIs shared by HHSIF and SF for the period of November 2021 to March 2025

3. Method of Impact Assessment

HHSIF engaged PWCALLP to conduct an impact assessment of the **HRD** project implemented in the Nashik and Raigad districts of Maharashtra. The assessment aimed to evaluate the impact achieved during the project period from **November 2021 to March 2025**. The assessment aimed to evaluate the outcomes and impact achieved during the programme period. The scope of work included reviewing the Key Performance Indicators (KPIs) established by HHSIF's management within the project implementation framework, focusing on the project's output, outcomes, and overall impact. The assessment framework followed **Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability (IRECS Framework)**, and recommendations were provided to support further evaluation and decision-making regarding the project's performance.

IRECS Framework used for the Impact Assessment



Inclusiveness

Ability of different stakeholders, particularly poorest and most marginalised to access the benefits of activities



Relevance

Are the services / inputs in the programme able to meet community priorities? How was the planning done? Was it participatory?



Effectiveness

Have the activities been able to effectively address community expectations? How efficiently have the resources been deployed, monitored and utilised?



Convergence

Degree of convergence with government/other partnerships; relationship between individuals, community, institutions and other stakeholders



Sustainability

Do communities feel ownership over assets created by activities and/or will the Project initiated community interventions sustain even after the exit?

The overall methodology adopted for conducting the impact assessment study can be categorised into four stages as illustrated below:

Stage 1: Desk Review

- Conducted an inception meeting with HHSIF & Swades Foundation (SF) to gain a detailed understanding of the interventions and align on the scope of work and expectations.
- Performed a desk review of key documents, including MoUs, annual project reports (FY 2021-22 to 2024-25), and beneficiary details from SF.
- Mapped project stakeholders based on the document review and initial consultations with HHSIF, IP and key stakeholders

Stage 2: Planning and tool preparation

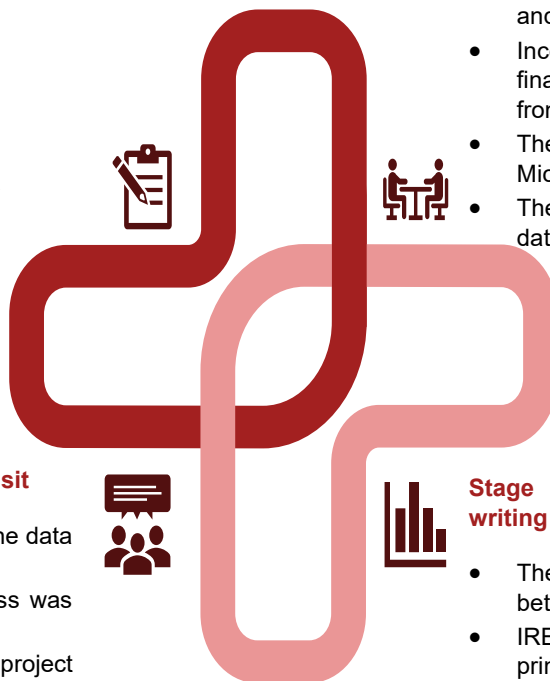
- The data collection plan was finalised in consultation with the HHSIF team and the implementation partner.
- Inception documents were shared and finalised after incorporating feedback from the HHSIF team.
- The developed tools were digitised in Microsoft Form.
- The HHSIF team was apprised of the data collection plan for the field visit.

Stage 3: Data collection & field visit

- The field team was trained on the data collection tools.
- The field data collection process was initiated.
- A quantitative survey with project beneficiaries was undertaken to record their feedback.
- Focus Group Discussions (FGDs) with beneficiaries, In-Depth Interviews (IDIs) with Field Representative, HHSIF team, On-ground partner and Village Development Committee (VDC) and Key Informants Interview with Upsarpanch were conducted.

Stage 4: Data analysis and report writing

- The key findings were assimilated to better analyse the data.
- IRECS analysis was conducted using primary and secondary data.
- The draft of the impact assessment report was prepared for the HHSIF team.
- Feedback received from HHSIF was incorporated and the report was submitted to HHSIF for their management's consideration.



3.1. Sampling plan

The project's impact was assessed using a mixed-methods approach, incorporating both qualitative and quantitative techniques to obtain comprehensive insights. Based on data from the Swades Foundation, the project impacted over 17,000+ households. From this population, a sample size of 138 was initially calculated with a 95% confidence level and a 5% margin of error.

The On-ground partner was able to mobilise only a limited number of beneficiaries. Additionally, the partner facilitated interactions in the field for just three days, which constrained the extent of sample coverage. Therefore, the assessment adopted a maximum coverage strategy, prioritizing the inclusion of all accessible and willing beneficiaries within the available timeframe. This approach resulted in the successful completion of 43 quantitative surveys.

The samples were distributed across **2 villages, Belpada in the Peth and Somaj village in Igatpuri blocks of Nashik**, based on the availability of implementing partners' resources in the field and their capacity to mobilise beneficiaries for both quantitative and qualitative data collection. Since the implementation partner has not been able to mobilise the beneficiaries in Raigad district this location was excluded in consultation with HHSIF. The village-wise sample coverage is detailed in the table below:

Table 2: Village wise sample coverage

Block	Village	Sample distribution
Peth	Belpada	16
Igatpuri	Somaj	27
Total		43

For the qualitative assessment, diverse interactions were conducted to gather comprehensive feedback from stakeholders, including **In-Depth Interviews (IDIs)**, **Focus Group Discussions (FGDs)**, and **Key Informant Interviews (KIIs)**. These qualitative samples were drawn from two villages, Belpada in the Peth block and Somaj in the Igatpuri block. Details of the stakeholders interviewed are provided on the table below:

Table 3: Qualitative sampling plan

Stakeholder Name	Mode of interaction	No. of interaction
Community members	Focus Group Discussion (FGD)	2
PRI Members	Key Informant Interview (KII)	1
Village Development Committee (VDC) Representative	In-Depth Interview (IDI)	1
On-ground partner Field Representative	In-Depth Interview (IDI)	1
On-ground partner Project Team Member	In-Depth Interview (IDI)	1
HHSIF Team	In-Depth Interview (IDI)	1
Total		7

* Please note that the qualitative interactions were conducted based on the stakeholder mobilisation carried out by the implementing partner.

The responses collected from the stakeholders' interactions were analysed to arrive at detailed findings as depicted in next section.

3.2. Assumptions and Limitations

General:

- The procedures we will be performing will not constitute an audit, examination or a review conducted in accordance with generally accepted auditing standards or attestation standards in India or elsewhere.
- We will not carry out any work or make any enquiries of management after the date of our Impact Assessment Report. Our Impact Assessment Report will not incorporate the effects, if any, of events and circumstances which may occur, or information which may come to light, after the date of our Impact Assessment Report.
- Our Impact Assessment Report will not be a substitute for any enquiries and procedures that Client shall otherwise undertake and judgements Client shall make for any purpose.
- We have not been engaged to, nor will we, provide any management functions or make management decisions.
- PW will not act in the capacity of the Client management; the Client will identify qualified personnel responsible for overseeing the CSR Project(s). We will not assign responsibilities to Client personnel. It will be the

responsibility of the Client to identify the core member team who will assist us in this assignment. We will not act in a supervisory capacity over members of Client.

- The study did not include conducting any KYC checks of the implementing partner, beneficiaries interacted on fields.
- We will not chair any internal meeting of the Client or represent the Client / Client's management in meetings with the other partners and/or beneficiaries.
- We shall not perform any independent verification or assessment for verifying the completeness, accuracy, correctness, authenticity or genuineness of the documents to be provided by any concerned party.
- We will not provide any solution/recommendation for dispute resolution, for the Client, with the NGOs/ stakeholders.
- We should not be held responsible for slippage of schedule due to non – availability of personnel from Client side and delay in providing information or obtaining feedback or facilitating local consultations.
- Our scope of work, including any advice / assistance, will be limited to the scope of Services specifically defined in the Contract. We will not be responsible for the implementation of our recommendations. Any additional work beyond the scope of the assignment shall only be carried out upon mutual agreement by both parties.
- All information or data required for the assignment will be provided by the Client to PW. Any discrepancy in data or wrong information provided by any respondent shall be sole responsibility of the Client.
- Completion of Delivery of the Services is subject to, among other things, Client's timely cooperation including receiving necessary information and timely response to PW's queries. PW will keep Client informed of its progress and of any proposed changes in this timetable should PW believe it will be unable to complete delivery of the Services by the requested date.
- If there are any circumstances that reasonably restricts travel or physical presence of our personnel at your office/location, then without prejudice to your payment obligations, you shall allow such personnel to work from home or other remote location till the time such reasonable restrictions exist. Any delay/default in performing our obligations arising from such restrictions, shall not be attributable to us and shall not be considered a breach on our part and no consequent damage/penalties etc. arising there from would be imposed on us.
- PW will not be designing and/or implementing a CSR system for the Client or designing processes and controls related to it. This assignment does not relate to internal control over financial reporting and does not generate information that is related to accounting records or financial statements.
- We will not finalise the Client's CSR policy, CSR Project's implementation plan and monitoring & evaluation (M&E) framework relating to CSR. PW will only provide recommendations for improvements in the select CSR Project(s) assessed for management's consideration.
- We will not prepare any policy and procedures manuals and will not be responsible for the implementation of our recommendations and management remediation plan.
- We will be responsible only for providing options for consideration of the Client and not make any management decision for selection, prioritization and implementation of the same.
- The current sample estimated is indicative in nature and may change basis the actual condition on the field and availability/non availability of respondents, further information shared by **HHSIF** etc.

Pertaining to this report:

- The report prepared by the PWCALLP is based upon the (a) information/ documents provided by HHSIF and its implementation partner and (b) data collected by the PWCALLP team. PWCALLP performed and prepared the Information at the client's direction and exclusively for the client's sole benefit and use pursuant to its client agreement. Our report is based on the completeness and accuracy of the above-stated facts and assumptions, which if not entirely complete or accurate, should be communicated to us immediately, as the inaccuracy or incompleteness could have a material impact on our conclusions.
- PWCALLP's work was limited to the samples/ specific procedures described in this report and were base only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as respondents. Accordingly, changes in circumstances/samples/procedures or information available could affect the findings outlined in this report.

4. Key Findings and Analysis

This section of the report presents the key findings and analysis of the impact created by the HRD Project. As field mobilisation was possible in just two locations within these areas, we have covered all the intervention areas covered in Igatpuri and Peth blocks. The insights are drawn from the quantitative study, complemented by information gathered through qualitative interactions with key stakeholders.

4.1. Profile of the respondents

This section provides an overview of the respondents involved in the study. The data collected offers insights into the respondent profile and highlights key relevant aspects.

Out of the total respondents surveyed (n=43):



65% were male and 35% were female.



91% of respondents were married.



53% were the chief breadwinners of their households, while 47% were dependent on their parents or spouse.



19% of the respondents had not received formal education, while 26% had completed primary education, and 23% had completed secondary education. This distribution highlights that a significant portion of the respondents had received **limited formal schooling**.



98% respondents belong to the Scheduled Tribe (ST), and 2% belong to the General Category.



Almost 88% of them had agriculture as their primary source of income, while only 49% had alternate sources, such as animal husbandry, private job, shop/business/trade, and Unskilled workers.



42% of respondents reported a monthly income between INR 10,001 and 20,000, followed by 39% with incomes below INR 10,000. Additionally, 12% earn between INR 20,001 and 30,000, while only 7% have a monthly income above INR 30,000.

4.2. Challenges prior to the project

- 1. Severe Water Scarcity for Drinking and Irrigation:** The community faced acute shortages of safe drinking water. Villagers, especially women, had to travel long distances to fetch water from rivers or hand pumps, spending several hours which impacted their time for other activities. Additionally, water for irrigation was insufficient, limiting agricultural activities largely to a single crop season (mostly paddy). This scarcity hindered cultivation of diverse crops and reduced agricultural productivity.
- 2. Poor Sanitation and Hygiene Practices:** Open defecation was widespread due to lack of toilet facilities, which led to contamination of water sources and consequent waterborne diseases such as diarrhea and other health issues. The absence of sanitation infrastructure compromised village hygiene and especially affected the privacy and safety of women and children.
- 3. Limited Livelihood Opportunities and Low-Income Diversification:** The community primarily depended on subsistence agriculture with low income and little livelihood diversification. Lack of irrigation and inadequate skill

training limited options for alternative income sources. Many households were landless or had marginal land, further constraining economic opportunities and exacerbating poverty.

4. **Lack of Access to Clean and Sustainable Energy:** The village lacked reliable electricity and clean energy solutions. There was no access to solar lighting or renewable energy, affecting household lighting, safety during night hours, and the quality of learning environments in schools and childcare centers.

4.3. Impact of the intervention

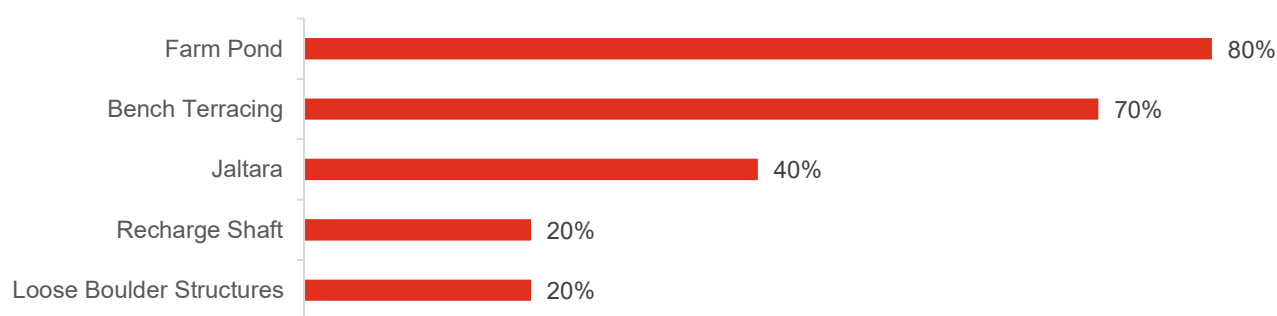
4.3.1 Improved water availability for irrigation and drinking purposes

Soil and Water Conservation

Beneficiaries reported facing severe water **shortages for drinking and irrigation** before the project implementation. Due to limited irrigation water, most farmers cultivated crops only during the Kharif season. In both Somaj village (Igatpuri) and Belpada village (Peth), beneficiaries on average had to travel approximately 2 kilometers to fetch drinking water, which was burdensome and negatively impacted their ability to manage household chores.

- As reported by the On-ground partner, **soil and water conservation activities** were planned based on the project's geographical location and the availability of water sources. During the field visit, it was observed that these **soil and water conservation activities have been implemented in the Peth block**. However, farmers in Igatpuri have been supported with irrigation water through the installation of solar lift irrigation and drip irrigation systems.
- As reported, **bench terracing (It is a farming method that creates flat steps on slopes to prevent soil erosion and conserve water) has been completed on 28 acres of land**. Additionally, a total of **12 farm ponds, 5 recharge shafts, 30 loose boulder structures, and 240 Jaltaras** (A traditional water conservation structure that captures and stores rainwater to enhance groundwater recharge and support irrigation in water-scarce areas) have been constructed as part of the soil and water conservation activities under the project.
- Of the total respondents, **23% (n=43) reported being beneficiaries of soil and water conservation structures**. Among these beneficiaries, 80% indicated benefiting from Farm Ponds, 70% from Bench Terracing, and 40% from Jaltaras (see Figure 3).

Figure 3: Soil and water conservation structures (n=10)

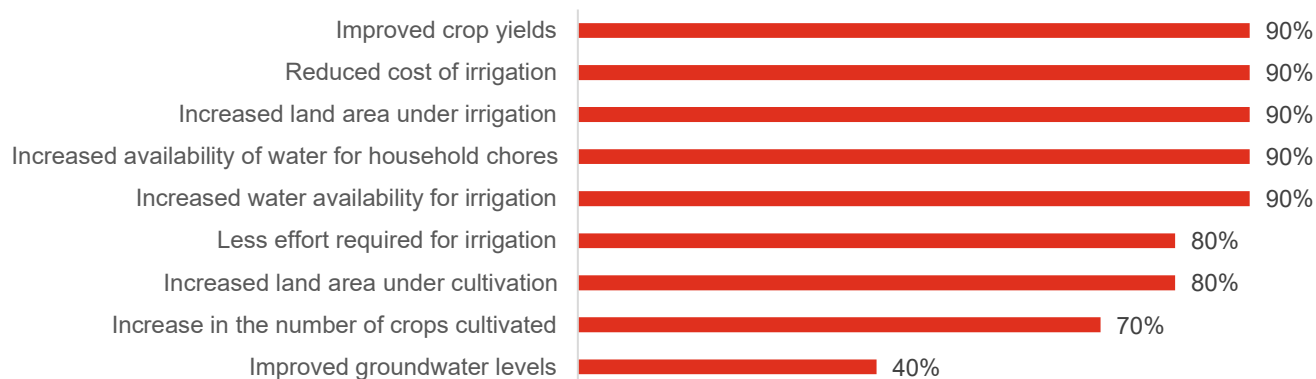


Multiple coding question, responses may add up to more than 100%.

- The implementation of soil and water conservation activities has benefited community members in multiple ways. As reported by community, water conservation efforts have **significantly increased water storage and availability**. As a result, beneficiaries whose land **previously lay idle during the rabi season are now able to cultivate a variety of crops**. These structures have also reduced soil erosion and enhanced water infiltration into the ground, leading to improved groundwater levels.
- As shown in Figure 4, the water conservation and management activities have had a positive impact on farmers. **90% of respondents who have been benefited (n=10) reported improved crop yields, reduced irrigation**

costs, expanded land area under irrigation, and increased availability of water for both household chores and farming. Additionally, 80% of respondents noted that irrigation now requires less effort and that the cultivated area has increased.

Figure 4: Benefits of water conservation and management activities (n=10)

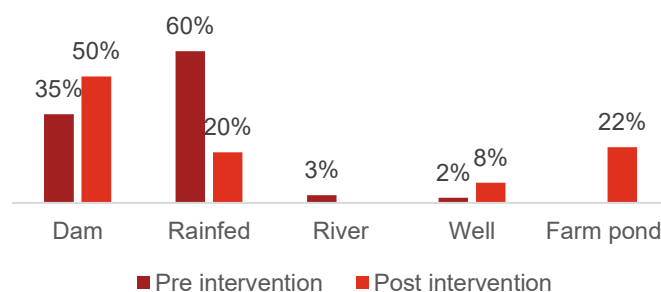


Multiple coding question, responses may add up to more than 100%.

Water for Irrigation

- Out of the 43 respondents interviewed, only 40 own agricultural land; therefore, questions related to irrigation were asked exclusively to these respondents. As shown in Figure 5, before the project implementation, **60% of respondents (n=40) primarily relied on rainfall and had no source of irrigation during the Kharif or Rabi seasons.** 35% used electric motors to pump water from the dam bearing the cost out of their own pocket, which increased their cultivation costs, while only 3% irrigated their land using wells. After the project implementation, the majority **(50%) of respondents now receive irrigation water from the dam**, followed by 22% who use farm ponds as their key source of irrigation.

Figure 5: Source of irrigation (n=40)



- In Somaj village of Igatpuri block, residents reported that although a dam was located close to their homes, they were unable to utilise its water due to a lack of means to lift it. According to the On-ground partner, the project supported farmers with **solar lift and drip irrigation systems under water for irrigation activities**, enabling them to pump water from the dam and wells **using solar energy and thereby eliminating electricity expenses.**
- 35% of respondents (n=43) reported benefiting from various irrigation systems. Among these beneficiaries, 60% (n=15) use the Solar Lift Irrigation system, and 53% have received drip irrigation support. These interventions have not only eliminated electricity charges but also significantly improved water use efficiency.

Figure 6: Visuals of solar panels and water sources



- Beneficiaries reported that since the implementation of water storage structures and the use of solar lift and drip irrigation systems, the **average time required to irrigate one acre of land has significantly decreased from 4.67 hours to 2.91 hours**. This reduction is primarily due to the improved efficiency and automation of these systems, as well as the elimination of reliance on electricity, which previously caused interruptions during power cuts. Consequently, these systems ensure a more consistent and steady water flow compared to electric-powered pumps. As a result, farmers spend less time managing irrigation and can focus more on other productive activities.
- In addition to improved irrigation efficiency, Solar Lift and Drip Irrigation systems have **reduced irrigation costs from INR 6,193 to INR 3,878 per acre**, representing approximately a **37% cost reduction per acre**.

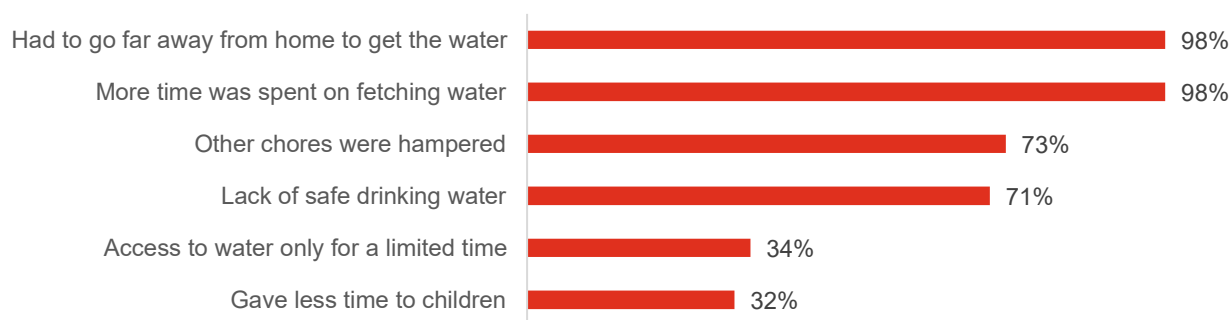
Table 4: Changes due to better irrigation practices

Parameter	Pre intervention	Post intervention	% Change
Change in time required to irrigate one acre land (hours)	4.67	2.91	-38%
Cost of irrigating one acre in one year (in INR)	6,193	3,878	-37%

Drinking water

- According to the Swades Foundation, the project has implemented **13 water schemes covering 774 households**. Under these schemes, the project has supported the **supply of drinking water through pipeline connections**. In the half water scheme, where a water source already exists, storage tanks, water chlorination systems, and pipelines have been installed to supply water to each household. In the full water scheme, a new water source has been constructed along with storage tanks, water chlorination systems, and pipelines to provide water to each household.
- 95% of respondents (n=43) confirmed that they have access to drinking water under the water scheme**, reflecting substantial progress in improving access to safe drinking water.
- When asked about the challenges faced regarding drinking water prior to the project implementation, **98% of respondents (n=41) who now have access to drinking water under the scheme reported having to travel long distances and spend considerable time fetching water**. Additionally, 73% said that the time spent collecting water hindered other household chores, and 71% reported a lack of safe drinking water, relying primarily on small dug wells near streams and hand pumps located around 2 km from their residences. (Refer figure 8).

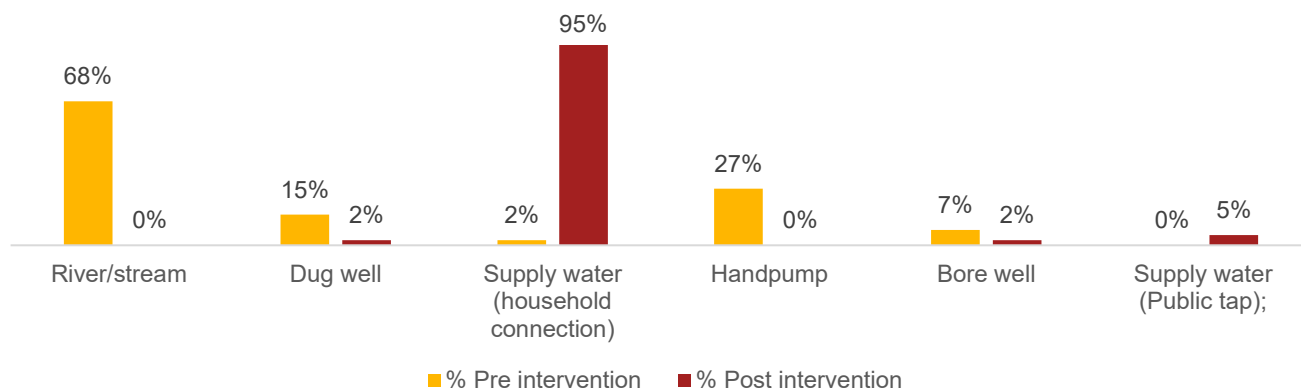
Figure 7 : Challenges faced prior to project regarding drinking (n=41)



Multiple coding question, responses may add up to more than 100%.

- In both project villages visited for the impact assessment, **residents faced critical challenges in accessing drinking water**. In Belpada village, beneficiaries reported that prior to the implementation of the water scheme, they had **to collect water from a small dug well near a stream located about 2 km from the village, which was time-consuming and required significant effort**. Additionally, conflicts sometimes arose among community members over access to the dug well, resulting in villagers queuing early in the morning to collect water. Similarly, in Somaj village, women had to fetch water from a handpump located in another hamlet approximately 2 km away from their homes. Thanks to the water scheme, which **provided drinking water connections to each household and ensured availability of water at their doorsteps, villagers now have access to safe drinking water, significantly saving time and reducing drudgery**.
- Before the program's implementation, **68% of respondents (n=41) relied on rivers or streams**, 27% depended on handpumps, and 15% used dug wells. After the project's implementation, **95% of people now receive water through household supply connections**, demonstrating a significant improvement due to the project.

Figure 8: Source of drinking water pre and post intervention (n=41)

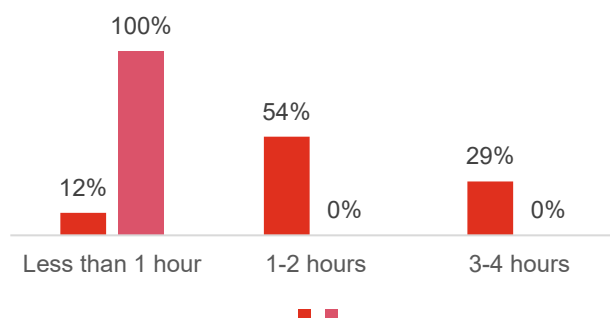


Multiple coding question, responses may add up to more than 100%.

Figure 9: Water supply tap in Somaj village

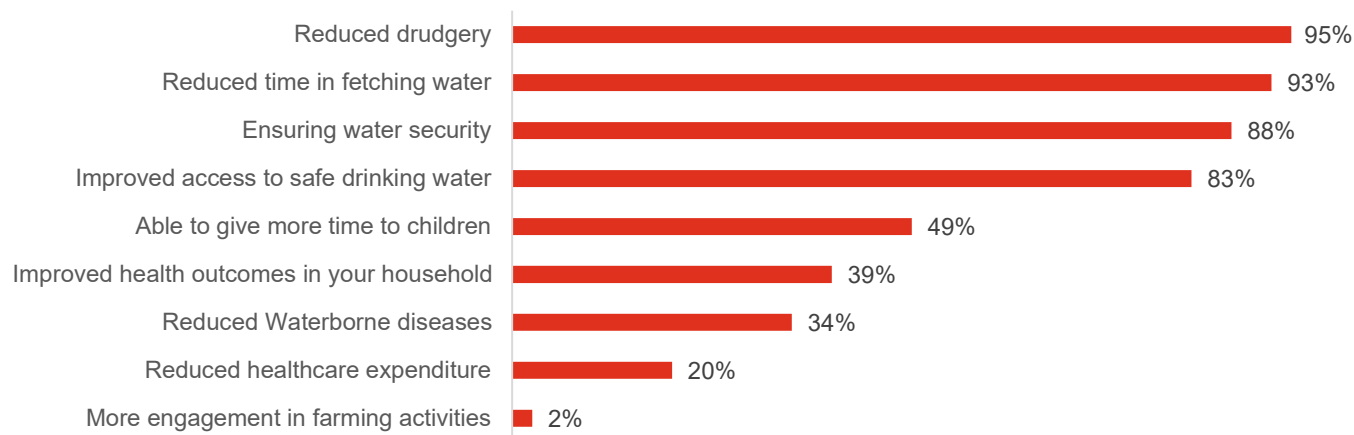


Figure 10: Time spent on fetching drinking water (n=41)



- The time **spent for fetching drinking water has significantly decreased**. Prior to the project, 54% of respondents (n=41) reported spending 1–2 hours daily collecting water, while **29% said they spent 3–4 hours per day and 5% reported more than 5 hours**. After the project’s implementation, **100% of respondents reported that the time spent fetching drinking water had reduced to less than 1 hour** (Refer figure 9).
- When asked if the water scheme has benefited them in daily life, **all respondents (100%, n=41) answered positively**. Of these, **95% reported a reduction in drudgery, 93% experienced decreased time spent fetching water, 88% ensured water security, and 83% indicated improved access to safe drinking water** (see Figure 11).

Figure 11: Benefits of water filter (n=41)



Multiple coding question, responses may add up to more than 100%.

- When asked whether they have a **regular supply of drinking water due to the intervention, 63% of respondents reported it is always available**, while 37% said availability is occasional with interruptions (see Figure 12). The Village Development Committee (VDC) appointed a dedicated member from the village to manage the water supply, who is paid INR 4,000 per month. However, during interactions, beneficiaries explained that interruptions occur due to motor malfunctions and human interventions, where water flow to other parts of the village is restricted until the current area takes its full supply.

Figure 12: Daily water availability (n=41)

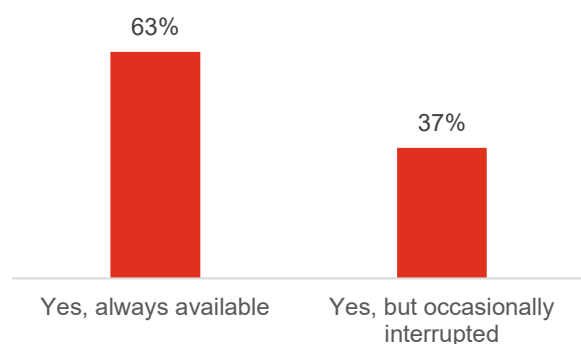
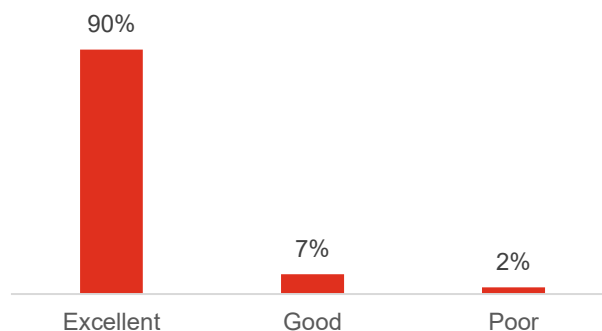


Figure 13: Rating on quality of water (n=41)



- **90% of respondents (n=41) rated the quality of water received under water scheme as excellent**, while 7% rated it as good based on their experience (Refer figure 13).

4.3.2 Boosting Agricultural Productivity

- As reported by community members, before the implementation of soil and water conservation activities, solar lift irrigation, and drip irrigation support, most farmers relied solely on rainfall for agriculture and cultivated mainly Kharif crops. They were generally unable to grow crops during the Rabi season due to insufficient irrigation water, only a **few farmers with personal wells and electric motors were able to cultivate Rabi crops (Grown between October to December)**. Since the project's implementation, **increased water availability has enabled farmers to cultivate crops during the Rabi season as well**. In Somaj village, farmers reported that solar lift irrigation provides them with **year-round water supply for irrigation, enabling the successful cultivation of various Rabi crops such as gram, groundnut, and vegetables**.

Since 40 of the respondents own agricultural land, questions related to agriculture were asked only to this group.

- As shown in the table below, improved water availability for irrigation has increased the total cultivated land area per household from **1.7 to 1.9 acres, marking a 12% increase**. Land under Kharif cultivation grew by 6%, while Rabi cultivation experienced a substantial 48% rise. The construction of soil and water conservation structures, along with irrigation support, has significantly enhanced overall land utilization. Farmers reported that they now have access to water for irrigating their fields during the Rabi season, enabling them to grow a variety of crops such as wheat, Groundnuts, and Gram.

Table 5: Impact of the project on land-related parameters (n=40)

Parameter	Pre intervention	Post intervention	% Change
Total land area under cultivation (in acre)	1.7	1.9	+ 12%
Land area under Kharif (in acre)	1.73	1.83	+ 6%
Land area under Rabi (in acre)	0.91	1.35	+ 48%
Total land area under irrigation (in acre)	1.16	1.33	+ 15%

- As shown in Table 6, the major crops grown during the Kharif season are **paddy and urad**. Since the program's implementation, farmers have **received sufficient water for irrigation**, resulting in improved crop yields. **Paddy yield per acre increased from 9.5 quintals (pre-intervention) to 11.9 quintals (post-intervention), representing a 25% increase**. Similarly, urad production improved by 24%.

Table 6: Kharif crop yield per acre in quintal (Pre and Post Intervention) (n=40)

Crop	Crop yield per acre (in quintal) Pre intervention	Crop yield per acre (in quintal) Post intervention	% Change
Paddy	9.5	11.9	+25%
Urad	5.1	6.3	+24%

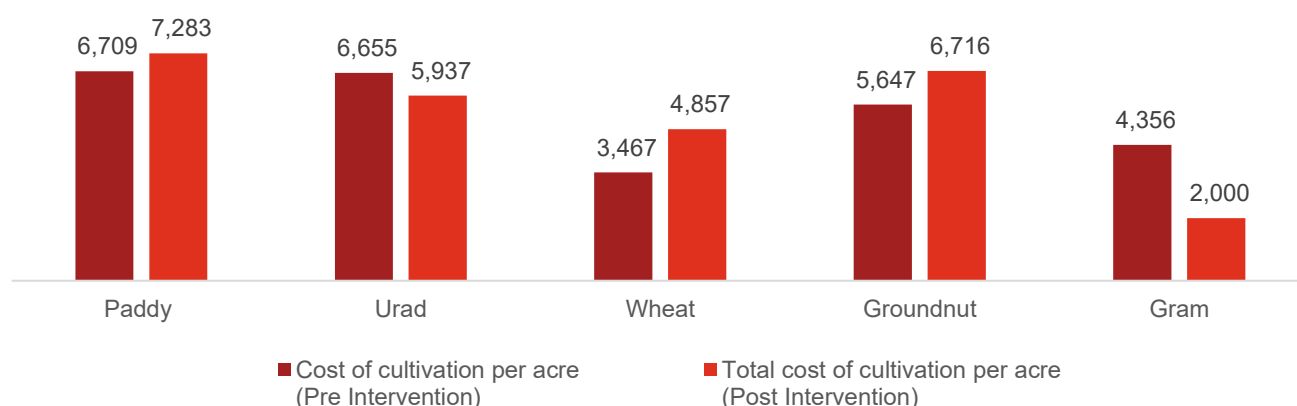
- As reported, increased water availability has enabled the cultivation of Rabi crops, with the three main crops being **wheat, groundnut, and gram**. As shown in the table below, the **average wheat yield has risen from 3.5 to 4.7 quintals per acre, representing a 35% increase**. Similarly, groundnut yield has improved by 27%, and gram by 54%.

Table 7: Rabi crop yield per acre in quintal (Pre and Post Intervention) (n=40)

Crop	Crop yield per acre (in quintal) Pre intervention	Crop yield per acre (in quintal) Post intervention	% Change
Wheat	3.5	4.7	+35%
Groundnut	5.1	6.4	+27%
Gram	1.5	2.4	+54%

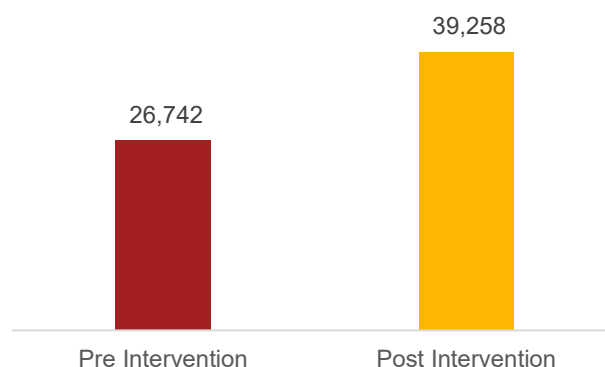
As shown in Figure 14, the average cost of cultivation has decreased for some crops but slightly increased for others post-intervention. The **cost of cultivating urad has reduced by 11% and gram by 54%**. In contrast, **cultivation costs for paddy increased by 9%, wheat by 40%, and groundnut by 19%**. During interactions, beneficiaries explained that the overall increase in cultivation costs is linked to their more active engagement in agriculture. With **improved water availability for irrigation, more farmers are cultivating Rabi crops**. Additionally, the **increased use of tractors for ploughing and higher expenses on chemical fertilizers and pesticides** (since farmers are dependent on traditional methods with heavy reliance on chemical fertilizers and pesticides) **have contributed to the rise in cultivation costs**. However, as farmers are receiving better returns, they are investing more in agricultural activities. Improved resource allocation toward land preparation and crop management has led to higher yields, encouraging farmers to invest more confidently in their farming. Farmers should be encouraged for the adoption of sustainable farming practices, including the use of organic fertilizers and biopesticides. Coupled with ongoing soil and water conservation activities, these measures will help improve crop yields while reducing input costs, thereby supporting both environmental sustainability and the economic well-being of the farmers.

Figure 14: Average cost of cultivation per acre pre and post intervention (INR) (n=40)



- The project's efforts to ensure consistent water availability have significantly **encouraged farmers to engage more actively in agricultural activities, particularly in Rabi and vegetable crops**. This increased participation, along with improved irrigation, has contributed to **higher crop yields and greater productivity**. Consequently, the **annual household income from agriculture has risen substantially, from INR 26,742 before the intervention to INR 39,258 after, representing an impressive 47% increase** (see Figure 18). This highlights the positive economic impact of the program in improving farmers' livelihoods through better resource management and enhanced agricultural practices.

Figure 15: Average annual income from agriculture activities (Pre and Post Intervention) (n=40)

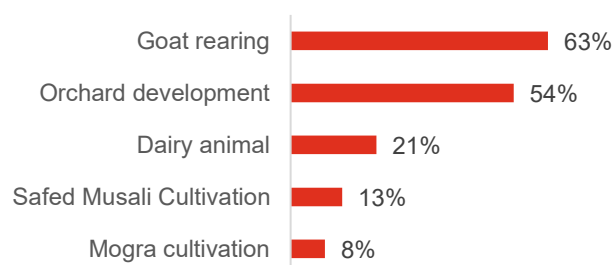


4.3.3 Livelihood Diversification for Income Enhancement

As reported by the implementing partner, the project has provided targeted support to villagers to strengthen their livelihoods. Assistance has been offered for a variety of livelihood activities, including **orchard development, drumstick plantation, Mogra cultivation, Safed Musali cultivation, food forest establishment, goat rearing, dairy farming, poultry farming, fishing net provision, and the establishment of a mini flour mill**.

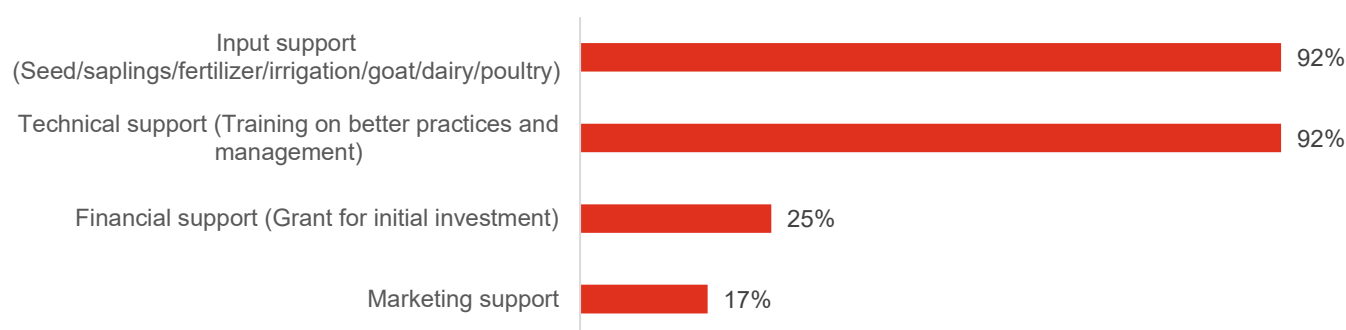
- 56% of respondents (n=43) reported receiving livelihood support.** Among these beneficiaries, 63% (n=24) received assistance for goat rearing, followed by 54% who received support for orchard development, 21% for dairy farming, 13% for Safed Musali cultivation, and 8% for mogra cultivation.
- When further asked about the types of support received under the project, 92% of respondents (n=24) reported receiving input support such as seeds, saplings, irrigation water, goats, dairy animals, and poultry.** Additionally, they received training on best practices and management. Furthermore, 25% reported receiving grants for initial investment.

Figure 16: Livelihood supports (n=24)



Multiple coding question, responses may add up to more than 100%.

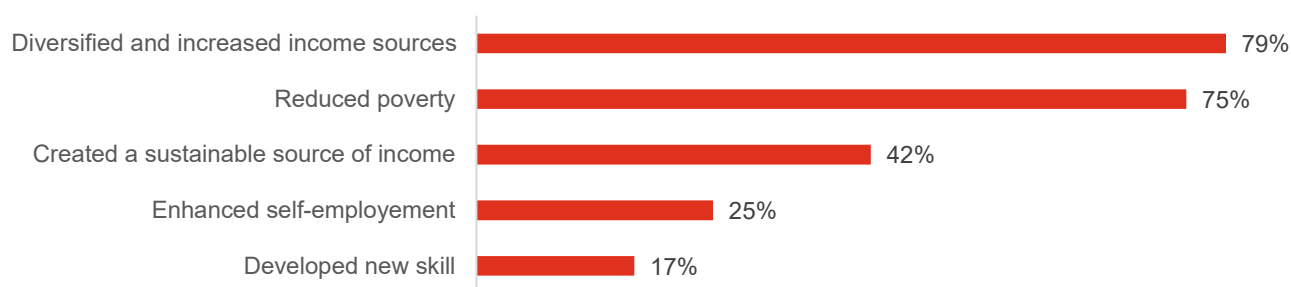
Figure 17: Type of support received under livelihood activities (n=24)



Multiple coding question, responses may add up to more than 100%.

- As reported by the implementing partner, **808 households have been supported under goatery initiative** across three different units: 1+1 (one male and one female goat), 5+1 (five female and one male goat), and 10+1 (ten female and one male goat). In addition to the goat provision, beneficiaries received training on goat care and were provided with medical kits.
- The implementation of livelihood activities has created new income opportunities for community members. A beneficiary reported selling **three goats at INR 8,000 each, earning a total income of INR 24,000**. It stated that the goat support has provided a sustainable source of income for her family. However, some beneficiaries reported that the goats provided under the project were not local breeds, which led to poor survival rates.
- As shown in the figure 18, **79% of respondents (n=24) reported that the support for livelihood generation activities has diversified and increased their sources of income**. Additionally, 75% indicated that the support has helped reduce poverty by raising their income levels, while 42% believe it has created a sustainable source of income.

Figure 18: Benefits of livelihood support (n=24)



Multiple coding question, responses may add up to more than 100%.

- A woman from Belpada village, supported with Mogra cultivation, **earned INR 11,000 last year from selling Mogra**. She shared that the income from this livelihood activity has enabled her to support her family financially. Overall, **16 beneficiaries have started earning an average annual income of INR 31,744** through the livelihood support received under the project.

4.3.4 Promoting education and skill development

- According to the On-ground partner, the project has **impacted 2,100 students by providing scholarships that enable them to complete their education and pursue their life goals**. The initiative offered two types of scholarships, **Mass Scholarships and Excellence Scholarships**. Mass Scholarships targeted students from economically disadvantaged backgrounds, helping them successfully complete their 11th and 12th-grade education. Excellence Scholarships were merit-based awards granted to students scoring above 70%, from families with incomes below 600,000 rupees, supporting them in completing their higher education. In addition to tuition support, the scholarships partially covered lodging and boarding expenses, significantly reducing financial barriers and facilitating students' successful progression through higher education.
- Considering the large number of unskilled youths working as laborers in nearby factories, the project has provided support for skill development training. According to the On-ground partner, **745 individuals have received skill development training aimed at enhancing their employment opportunities**. Among surveyed respondents, 33% (n=43) reported attending these training courses.
- Of those trained, **43% (n=14) received training as electricians, 29% were trained in photovoltaic (P.V.) solar installation, and another 29% received sewing machine training**. Nearly all participants successfully completed their courses and obtained certification upon completion.
- When asked about the relevance of the new skills to their job or business, **64% of respondents (n=14) confirmed they had acquired highly relevant skills**. Following the training, **50% of these respondents secured new jobs, and 14% became self-employed**, demonstrating the training's direct impact on employment and entrepreneurship outcomes.

- As reported by community members, the **skill development training provided by the project has had a significant positive impact on the lives of local youth**. Many trainees have successfully secured positions as electricians in nearby factories, marking a considerable improvement from their previous unskilled labor roles. This transition has not only ensured a more stable and sustainable source of income for these young individuals but has also offered them better job security and career growth prospects. By gaining specialized skills, these youths are now able to contribute more effectively to their households' financial well-being while enhancing their personal confidence and professional development.
- Additionally, some of the trained **youths are now practicing as electricians within the village**. This not only provides them with a steady source of income but also benefits the community by eliminating the need to call outsiders for electrical issues, **allowing problems to be resolved more quickly and conveniently**.

4.3.5 Sanitation and Hygiene Improvements

As reported by the implementing partner, the project has supported **2,460 households with sanitation units, effectively reducing open defecation and providing safe sanitation facilities to the villagers**. Additionally, 3 schools were supported under the WATSAN project, where sanitation facilities with water connections and handwashing stations were developed to improve hygiene for the schoolchildren.

- **86% of respondents (n=43) reported receiving sanitation units through the project**. Of those who received sanitation units, 100% (n=37) confirmed they obtained full support as provided by the project. Additionally, **93% of the respondents who received sanitation units previously practiced open defecation regularly**.
- When asked about the challenges faced **before the construction** of sanitation units, **97% of respondents (n=37) reported concerns about privacy and safety, especially for women and girls, due to open defecation**. Additionally, **97% highlighted the lack of proper sanitation facilities**, and 86% reported experiencing health issues related to poor hygiene (see Figure 19).

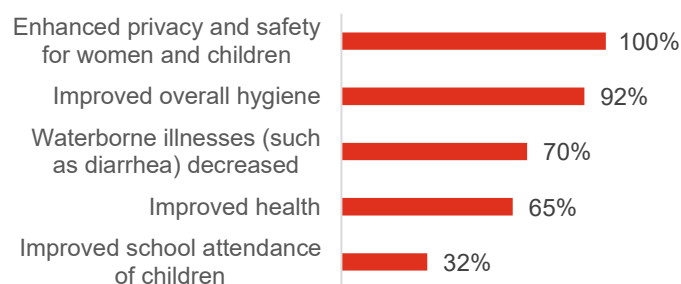
Figure 19: Challenges faced by community prior to construction of the sanitation unit (n=37)



Multiple coding question, responses may add up to more than 100%.

- All respondents (**100%, n=37**) who received sanitation units are now regularly using the toilets, ensuring safe sanitation facilities within the community. Additionally, **100% reported enhanced privacy and safety for women and children**, 92% noted improved overall health, and 70% observed a reduction in waterborne illnesses such as diarrhea due to regular toilet use.
- As a result of the construction of sanitation units, **community members have saved a significant amount of time previously spent going outside for open defecation**. Among respondents (n=37), **68% reported saving between 15 and 30 minutes**, 24% saved less than 15 minutes, and

Figure 20: Benefits of sanitation unit (n=37)



Multiple coding question, responses may add up to more than 100%.

8% saved more than 30 minutes. All respondents (100%) expressed high satisfaction with the sanitation units constructed under the project.

4.3.6 Enhanced Access to Clean and Sustainable Energy

- As reported by On-ground partner, project has made an impact by **providing clean energy solutions to the community and schools**. Specifically, **solar systems and lights were installed in 15 Anganwadi centers and 25 schools, ensuring continuous lighting, fan operation, and water availability**. This created a more favorable learning environment by eliminating disturbances and enabling students to fully focus on their studies. Additionally, **646 households received solar lights, 1,071 solar streetlights were installed across the project villages, and solar lamps were provided to 4 Village Development Committees**.
- Villagers from Somaj shared that before the installation of streetlights, their village remained pitch dark during the night, which not only caused **fear of wild animal attacks but also limited their mobility and daily activities after sunset**. Early morning commutes to nearby factories were fraught with anxiety and caution due to the darkness and potential dangers. Since the installation of the solar streetlights, **the entire village area is consistently well-lit, improving safety and security**. Residents can now move freely and confidently throughout the village at night without fear, and the extended lighting hours have positively influenced social interactions, economic activities, and overall well-being in the community.

Figure 21: Street solar lights



4.3.7 Community Engagement and Participation

- As reported by the implementing partner, **each project village has a Village Development Committee (VDC) actively engaged in all phases of the project**. The VDC is involved in various activities such as **conducting meetings with villagers, preparing village development plans, selecting sites for soil and water conservation structures, choosing beneficiaries, and collecting community contributions**. This involvement has ensured transparency and community ownership of the project.
- Twenty-six percent of respondents (n=43) reported being members of the VDC**. Of these members, 91% stated that they hold monthly meetings to discuss village development activities and address any issues.
- When asked about the maintenance of water conservation structures, **42% of respondents identified the VDC as responsible, and 100% confirmed that the water conservation structures are in good condition**.
- Community members reported that the **VDC collects INR 100 from each household with a drinking water connection on a monthly basis**. From these funds, INR 4,000 is paid to the individual managing the water supply, while the remaining amount is deposited into the VDC account. Similarly, those using irrigation water from the solar lift system contribute INR 500 annually to the VDC. These funds are utilized to address any system-related issues. Additionally, community members are willing to contribute extra funds when needed, demonstrating their commitment to the long-term sustainability of the interventions and ensuring continuous benefits.

5. IRECS Analysis

Based on the interactions with the key stakeholders and desk review, the impact of the project was also assessed on the **Inclusiveness, Relevance, Effectiveness, Convergence and Sustainability (IRECS)** framework. The IRECS analysis summary has been presented on the table below.

Table 8: IRECS Analysis

Parameter	Assessment from Study
Inclusiveness	- The HRD project specifically targets two districts with predominantly tribal populations that are economically vulnerable, with nearly 80% of households earning below INR 2 lakhs annually. This focus ensures that marginalised and underserved communities are reached. - Interventions benefit a wide spectrum of community members, including 17,000+ households, over 2,100 students from economically disadvantaged backgrounds, and hundreds of households engaged in diversified livelihood activities. - The project promotes gender and social inclusion by improving sanitation facilities that enhance privacy and safety particularly for women and girls, as well as providing scholarships to support education for economically disadvantaged students, including girls.
Relevance	- The project addresses critical and context-specific challenges prevalent in the project area such as acute water scarcity for both drinking and irrigation, high dependence on seasonal agriculture, limited livelihood options, poor sanitation and hygiene, and inadequate access to clean energy. - Interventions such as soil and water conservation structures, solar lift and drip irrigation systems, sanitation units, livelihood diversification initiatives (including goat rearing, dairy, orchard development), educational scholarships, skill development trainings, and solar energy installations are directly aligned with the identified needs and priorities of the target communities. - Significant improvements, such as increased crop yields, higher cultivated land under irrigation, increased household incomes and universal access to safe drinking water, demonstrate that project activities are highly relevant and appropriately contextualized. - The diverse portfolio of activities addresses short- and long-term social and economic vulnerabilities, thereby catering comprehensively to the complex realities faced by the beneficiary communities.
Effectiveness	- The project has demonstrably delivered on its objectives, as evidenced by measurable improvements in key outcome indicators; for example, 95% of respondents (n=43) have year-round access to safe drinking water, and 86% of households (n=43) report receiving sanitation units reducing open defecation. - Water management interventions are effective in increasing irrigation efficiency through solar-powered drip and lift irrigation, resulting in a 37% reduction in irrigation costs and a 12% increase in total land under cultivation. - There has been a significant improvement in crop yields: paddy increased by 25%, urad by 24%, wheat by 35%, groundnut by 27%, and gram by 54%. - The average annual income from agriculture has increased from INR 26,742 to INR 39,258, representing a 47% rise. - Livelihood support has effectively diversified income sources with 79% of beneficiaries (n=24) reporting increased income diversification and enabled sustainable income

Parameter	Assessment from Study
	generation with average annual incomes from livelihood activities reaching approximately INR 31,744. • Skill development efforts have led to skill acquisition relevant to the job market, with 64% of trainees (n=14) confirming highly relevant skills, 50% securing new jobs, and 14% starting self-employment, reflecting the effectiveness of capacity-building. • The clean energy interventions have effectively improved the quality of life by providing reliable lighting in homes, schools, and public spaces, enhancing safety and extending productive hours.
Convergence	• The project demonstrates convergence by integrating multifaceted interventions across Water & Sanitation, Education, Economic Development, and Clean Energy sectors, which mutually reinforce each other to generate holistic improvements. • Strategic partnerships between Honeywell Hometown Solutions India Foundation, Swades Foundation, local community institutions (VDCs), and government agencies create synergies and avoid duplication, thereby enhancing overall project coherence. • Community participation is institutionalised through Village Development Committees (VDCs), where about 26% of respondents (n=43) participate actively. These committees engage in all phases of the project from planning and beneficiary selection to resource management, ensuring transparency, accountability, and local ownership.
Sustainability	• Sustainability is ensured through strong community ownership facilitated by active VDC participation in governance, maintenance, and financial contributions that fund ongoing operations and address repairs. • The promotion of renewable solar energy systems reduces dependency on unreliable and costly electricity, lowering recurring costs and environmental footprint, thus ensuring sustainable energy access. • Livelihood diversification reduces economic vulnerability by creating multiple income streams, while capacity-building enhances the resilience and adaptability of beneficiaries. • Natural resource conservation through soil and water conservation structures improves ecosystem health, reduces erosion, enhances groundwater recharge, and secures water resources for future generations. • The positive changes in hygiene behavior and sanitation uptake create lasting health benefits that contribute to sustained community well-being. • Together, these factors create an enabling environment for sustained improvements beyond the project lifespan, making development gains durable and self-maintaining.

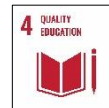
6. Alignment to the HHSIF's CSR Policy and the UN SDGs

The project aligns with **HHSIF's CSR policy**, which prioritises **STEM education, upskilling and research, sustainable community development, and humanitarian relief as key thematic areas**⁵, while also supporting the achievement of the **Sustainable Development Goals**⁶.

SDG 1: No Poverty- The project targets economically vulnerable tribal communities by enhancing livelihoods through diversified income sources such as agriculture, animal husbandry, and skill development, thereby increasing agricultural productivity, providing livelihood support, and creating alternative employment opportunities that collectively reduce poverty and improve economic resilience.



SDG 4: Quality Education- Supporting over 2,100 students with scholarships and providing skill development training, the project enables education completion, advances higher studies, and enhances employability and entrepreneurship, thereby fostering lifelong learning and capacity building.



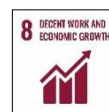
SDG 6: Clean Water and Sanitation- Installation of water schemes providing safe and adequate drinking water connections directly addresses water access challenges, complemented by soil and water conservation measures that increase water availability for irrigation and domestic use, promoting sustainable water management.



SDG 7: Affordable and Clean Energy- The project delivers clean, renewable energy through solar-powered street lighting, home lighting, and irrigation systems, improving energy access, reducing reliance on grid electricity, enhancing safety, and lowering operational costs.



SDG 8: Decent Work and Economic Growth- Livelihood diversification, skill training, and enterprise support foster sustainable economic growth and create decent employment opportunities, increasing incomes and reducing underemployment in rural communities.



SDG 11: Sustainable Cities and Communities- Development of essential infrastructure such as sanitation units, water supply systems, and community solar lighting enhances the resilience and sustainability of rural communities, while active community participation through Village Development Committees strengthens governance and social cohesion.



SDG 13: Climate Action- Water conservation and renewable energy interventions reduce environmental impacts and promote adaptation to climate variability, with improved natural resource management supporting ecosystem sustainability and resilience against climate change effects.



⁵ Source: <https://www.honeywell.com/content/dam/honeywellbt/en/documents/downloads/india-csr/hon-corp-honeywell-india-csr-policy.pdf>

⁶ Source: <https://sdgs.un.org/goals>

7. Recommendations

The following recommendation has been suggested based on our observation and the discussion with the community members.

Use Local Goat Breeds for Improved Survival and Sustainability

During consultations with Goatary beneficiaries, concerns were raised regarding the suitability of the goats supplied through the project. It was observed that these goats were not local breeds and, as a result, exhibited poor survival rates in the prevailing environmental conditions. This mismatch between breed and environment has adversely affected the goats' health and longevity. To enhance the effectiveness and sustainability of the project, it is recommended that future distributions focus on providing local breeds that are naturally adapted to the specific climatic and ecological conditions of the area. Utilizing indigenous breeds would likely improve survival outcomes, promote resilience to local diseases and environmental stresses, and thereby ensure greater long-term benefits for the beneficiaries and the community at large.

8. Study Limitations

- **Geographical Coverage:** Initially, the impact assessment was intended to encompass both Raigad and Nashik districts. However, the implementation partner communicated that mobilisation would be possible only in Nashik, and only for a limited period of three days, which restricted the extent of sample coverage. Consequently, the implementation partner could mobilise limited number of beneficiaries, and field interactions remained restricted to a narrow operational window. As a result, the planned sample size of 138 could not be achieved. A maximum coverage approach was adopted, prioritising all accessible and willing beneficiaries within the available timeframe. This resulted in completion of 43 quantitative surveys, conducted exclusively in Nashik district. Raigad district could not be covered at all, thereby narrowing the geographic scope of the assessment and limiting the ability to measure the impact of the interventions across the broader range of project activities originally planned.
- **Limited Details of Project Activities:** The project reports shared during desk review period outlined overall objectives, outputs, outcomes, and anticipated impact. However, they provided limited detail on the specific activities undertaken, the processes followed, and the nature of support provided for each programme component. For instance, activity level details related to drinking water scheme and support for Safed Musali cultivation were not documented in detail. This lack of granular activity-level clarity restricted the ability to design more nuanced assessment tools, thereby limiting the scope of inquiry. With availability of detailed documentation, the assessment could have captured certain aspects of the project activities in greater depth.

9. Success Stories

Success Story 1: Transforming Drinking Water Access in Belpada Village

Belpada village, situated in the Peth block of Nashik district, Maharashtra, is home to around 600 people across 121 households. Prior to the project intervention, the village faced severe challenges in accessing safe drinking water. The only nearby **source was a small dug well near the river, located about 2 kilometers away**. Women in the village had to wake up as early as 5 am to make multiple daily trips to fetch water. This physically taxing routine consumed significant time and effort. This arduous process not only limited time for other productive activities but also contributed to health and hygiene issues.

In response to these pressing challenges, the Human and **Holistic Sustainable Initiatives Foundation (HHSIF)**, in collaboration with the Swades Foundation, launched **HRD** project across several villages in Nashik and Raigad districts. Belpada was among the key project villages selected for targeted interventions. One of the cornerstone activities implemented here was the **Full Water Scheme**. This initiative entailed establishing a new, reliable water source and constructing essential infrastructure such as storage tanks, pipelines, and a water chlorination system to deliver safe, clean drinking water throughout the village. Crucially, each household was provided with direct tap water connections, completely eliminating the need for long and exhausting journeys to distant water points.

The impact of these efforts has been truly transformative for Belpada. **Safe and adequate drinking water now flows directly into homes, drastically reducing the time and physical burden previously endured by women and other community members**. This improvement has freed up valuable time, enabling villagers to engage more fully in agriculture, education, childcare, and other income-generating and developmental activities. Moreover, the introduction of chlorinated water has significantly lowered the **incidence of waterborne diseases, improved overall community health and reducing healthcare expenses**. The water security brought about by the project has markedly elevated the quality of life, dignity, and well-being of the entire Belpada community, setting a strong foundation for sustainable rural development.

Success Story 2: Empowering Farmers: How Dairy Support Changed RYK's Life

RYK, a 37-year-old resident of Somaj village in the Igatpuri block of Nashik district, Maharashtra, lives with his wife and two children. His primary source of income has been agriculture, with just one acre of land where he cultivates paddy during the Kharif season. However, the income from farming alone **was insufficient to meet the needs of his family**. To supplement his earnings, RYK had previously purchased one buffalo on his own, which provided some additional income but was still not enough to sustain his household comfortably.

Under the HRD project implemented by HHSIF in partnership with the Swades Foundation, RYK received valuable support in the form of financial assistance to purchase a second buffalo. **The project provided him with INR 30,000 specifically for this purpose**. This crucial support helped him expand his dairy enterprise beyond what he could achieve on his own.

According to Mr. RYK, both of his buffaloes have successfully given birth to calves, and the increased livestock has enabled him to produce and sell milk regularly. He now earns approximately INR 30,000 per month for eight months when the buffaloes produce milk twice daily. For the remaining four months, he earns around INR 15,000 per month. In total, RYK's **annual income from selling milk amounts to around INR 3,00,000**.

This significant increase in income has brought about profound changes in RYK's life. He was able to **build a new home for his family**, providing them with a more secure and comfortable living environment. Moreover, enhanced financial stability has allowed him to **invest in better education for his children**, opening up new opportunities for their future.

RYK expressed his heartfelt gratitude to **HHSIF** and the Swades Foundation for their support, which he credits with transforming his livelihood and improving the well-being of his entire family. This success story highlights the powerful impact that targeted rural development interventions can have in empowering families and communities towards sustainable prosperity.

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Impact Assessment Report:

Honeywell Centre for Advancing Girls in Science

Honeywell Hometown Solutions India Foundation

April 2026

Price Waterhouse Chartered Accountants LLP

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8. Our work was limited to the specific samples/ procedures described in this report and were based only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as sample respondents. Accordingly, changes in circumstances/ samples/ procedures or information available after the review could affect the findings outlined in this report. Further, the study did not include conducting any KYC checks/due diligence of the on-ground partners, beneficiaries.
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10. Our observations represent our understanding and interpretation of the facts based on reporting of beneficiaries and stakeholders. The recommendations provided may not be exhaustive from the perspective of bringing about improvements in the CSR Project(s) and additional steps/efforts may be required on the part of the management to address the same.

11. PW performed and prepared the Deliverable(s) at Client's direction and exclusively for Client's sole benefit and use pursuant to the requirement stated under Rule 8(3) of the Companies (CSR Policy) Rules, 2014 applicable to the Contributing Parties. Our report is based on the completeness and accuracy of the above stated facts and assumptions, which if not entirely complete or accurate, should be communicated to us immediately, as the inaccuracy or incompleteness could have a material impact on our conclusions.

12. The reader agrees that PW its partners, directors, principals, employees and agents neither owe nor accept any duty or responsibility to it, whether in contract or in tort (including without limitation, negligence and breach of statutory duty), and shall not be liable in respect of any loss, damage or expense of whatsoever nature which is caused by any use the reader may choose to make of this report, or which is otherwise consequent upon the gaining of access to the report by the reader. Further, the reader agrees that this report is not to be referred to or quoted, in whole or in part, in any prospectus, registration statement, offering circular, public filing, loan, other agreement or document and not to distribute the report without PW's prior written consent.

13. In no circumstances shall we be liable, for any loss or damage, of whatsoever nature, arising from information material to our work being withheld or concealed from us or misrepresented to us by any person to whom we make information requests.

List of acronyms

Acronym	Full Form
APL	Avasara Professional Learning
AYS	Avasara Young Scientists
CSR	Corporate Social Responsibility
FGD	Focus group discussion
HHSIF	Honeywell Hometown Solutions India Foundation
ICAI	Institute of Chartered Accountants of India
IDIs	In-Depth Interviews
IISER	Indian Institutes of Science Education and Research
INR	Indian Rupees
JEE	Joint Entrance Examination
MoU	Memorandum of Understanding
NEET	National Eligibility cum Entrance Test
PW	Price Waterhouse
PWCALLP	Price Waterhouse Chartered Accountants LLP
STEM	Science, Technology, Engineering, and Mathematics
UN SDGs	United Nations Sustainable Development Goals

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Executive Summary

About the Project:

Honeywell Hometown Solutions India Foundation (HHSIF), under its Corporate Social Responsibility (CSR) initiative, partnered with **Avasara Leadership Institute** to implement the '**Honeywell Centre for Advancing Girls in Science**' programme at **Avasara Academy**, Pune. The programme aimed to strengthen STEM learning among girls from underserved and economically disadvantaged backgrounds by improving access to experiential learning, laboratory infrastructure, and structured academic support.

HHSIF engaged **Price Waterhouse Chartered Accountants LLP (PWCALLP)** to conduct the impact assessment of the CSR project – "**Honeywell Centre for Advancing Girls in Science**' programme at **Avasara Academy**'.

The assessment adopted a **mixed-methods approach**. A quantitative survey was conducted with **109 students**, through a **self-administered tool**, while the qualitative assessment included one Focus Group Discussion (FGD) with beneficiary students and five In-Depth Interviews (IDIs) with teachers, the Principal, Avasara Leadership Institute representative, and the HHSIF team, resulting in a total of 6 qualitative interactions.

Need for the intervention

- **Limited access to experiential STEM learning and infrastructure:** Prior to the intervention, learning environments were largely theoretical and lacked access to laboratories, equipment, and practical learning tools, restricting conceptual understanding and application.
- **Low confidence and limited classroom participation:** Students reported hesitation in expressing ideas and solving STEM-related problems due to limited exposure to interactive and participatory learning environments.
- **Limited awareness of STEM careers and pathways:** Students had minimal exposure to diverse career opportunities in science and related fields, affecting their ability to make informed academic and career decisions.

Impact Created:

- The programme improved access to experiential STEM learning, with 100% of respondents (n=109) reporting participation in laboratory sessions and 89% (n=109) indicating a **balanced mix of theoretical and practical learning**.
- Access to infrastructure was significantly enhanced, with **98% of respondents** (n=109) reporting **access to science laboratories and regular engagement with hands-on learning tools**.
- Learning outcomes improved substantially, with the proportion of respondents able to easily understand science and mathematics concepts increasing from **32% before joining to 91% after participation** (n=109).
- Confidence levels improved notably, with respondents reporting "**very confident**" levels in solving science and mathematics problems increasing from **17% to 72%** (n=109).
- Academic performance improved, with 97% of respondents (n=109) reporting **better performance in STEM subjects, supported by practical and application-based learning approaches**.
- Experiential learning enhanced engagement, with 93% of respondents (n=109) reporting **more interactive classes and 91%** (n=109) indicating improved understanding of complex concepts.
- The programme strengthened interest in STEM, with 66% of respondents (n=109) reporting **increased interest in science and mathematics subjects**.
- The programme **strengthened critical life skills**, with 97% of respondents (n=109) reporting improvement in critical thinking and 85% (n=100) in collaboration and teamwork.

- Confidence and self-expression improved, with 97% of respondents (n=109) reporting increased confidence in expressing ideas and participating in academic discussions.
- Teacher capacity building through APL and integration of experiential pedagogy enabled institutionalisation of learning, supporting sustained programme outcomes beyond the intervention period.

Recommendations:

- **Strengthening integration of competitive examination preparation within the academic model** - While support for competitive examinations such as the National Eligibility cum Entrance Test (NEET) and Joint Entrance Examination (JEE) has been provided for interested students, there is an opportunity to further strengthen and expand this component to reach a wider group of students. This may include structured bridge modules, optional preparatory sessions, and continued academic guidance aligned with students' aspirations. Strengthening this aspect can support students in navigating multiple academic pathways, while continuing to benefit from conceptual understanding and application-based learning approaches.
- **Exposure to external academic and competition platforms** - While student engagement within school-level activities and competitions was evident, participation in external platforms remained limited. Students can be provided with exposure by facilitating participation in district, state, national level competitions, workshops, and academic forums. Strengthening this component would enable students to gain broader exposure, build confidence, and benchmark their learning beyond the school environment.

Study Limitations

- The assessment period coincided with the holiday break following student examinations, which restricted in-person data collection. As a result, a virtual, self-administered questionnaire was used to capture students' responses, potentially influencing ability to predetermine academic year wise cohorts, response rates and the depth of engagement compared to face-to-face methods.
- With respect to quantitative data, responses were sought from students across all years of programme implementation (2021–2025), the survey relied on voluntary, self-administered participation. As a result, responses were received unevenly across academic years, with a higher concentration of responses from the most recent cohort (2024–25) and relatively fewer from earlier years. This limits the ability to draw year-wise or cohort-specific comparisons of programme outcomes.
- Qualitative insights were gathered through interactions with current Grade 12 students, as students from other grades were not available during the assessment period. Many of them were absent from the residential campus as they had returned home post exams. IP could hence mobilise limited number of respondents. Therefore, the findings may not fully capture the experiences of students across other grades or the entire beneficiary group.

Comprehensive analyses, detailed findings, observations and recommendations are presented in the subsequent sections of this report.

1. About Honeywell Hometown Solutions India Foundation

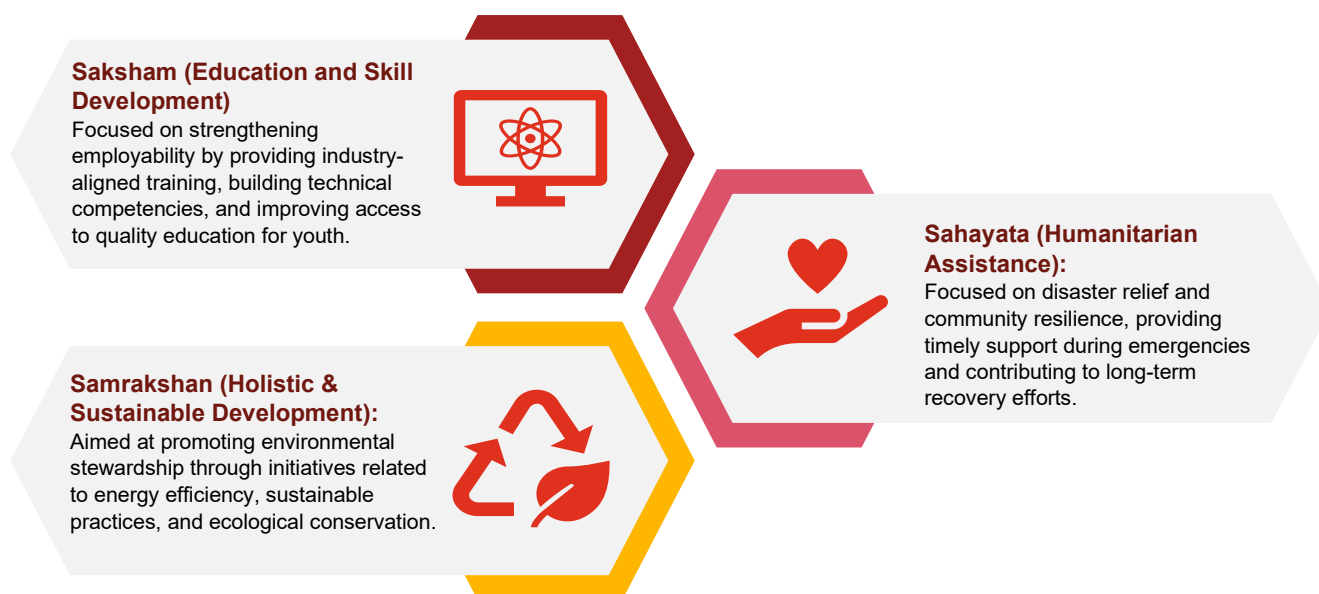
Honeywell Hometown Solutions India Foundation (HHSIF) is the corporate social responsibility arm of Honeywell in India. The Foundation focuses on creating sustainable and inclusive impact by supporting communities through initiatives in education, skill development, environmental sustainability, and humanitarian assistance.

HHSIF's approach is centred on improving access to quality education and enhancing employability among youth, particularly those from underserved and marginalised backgrounds. A key priority is to bridge the gap between academic learning and industry requirements by enabling students to acquire industry relevant skills and practical exposure, thereby preparing them for future employment opportunities.

The Foundation works in close collaboration with implementation partners, academic institutions, and industry experts to design and deliver programmes that are aligned with current market needs. This collaborative model ensures that beneficiaries receive not only technical training but also exposure to real-world applications and industry practices.

HHSIF's CSR initiatives are guided by key thematic areas, including: ¹.

Figure 1: HHSIF's CSR key area



Through these focus areas, HHSIF aims to create long-term, scalable impact while contributing to inclusive growth and sustainable development across communities.

¹ Source: [HHSIF's Website](#)

2. About the Programme under Assessment

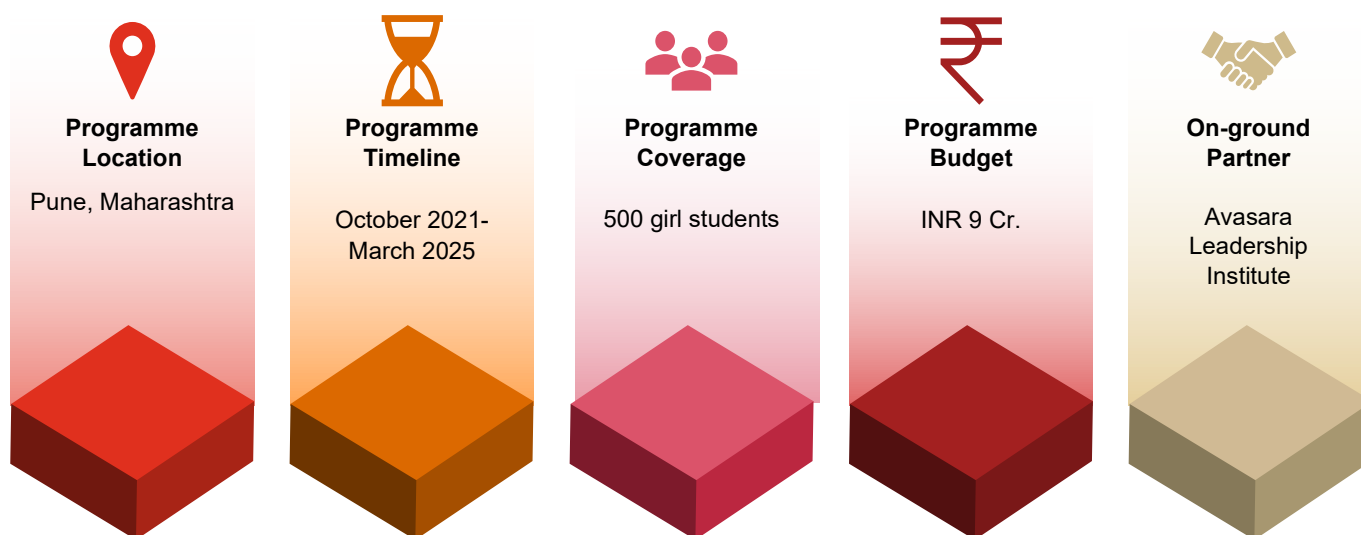
In India, girls from underserved and low-income backgrounds continue to face **multiple barriers in accessing quality education, leadership opportunities, and exposure to Science, Technology, Engineering, and Mathematics (STEM)**. These challenges are shaped by factors such as social norms, limited financial resources, unequal access to high quality schools, and the absence of enabling ecosystems that support girls in realising their full potential.

Improving access to quality and equitable education, particularly in STEM, remains a national priority, as highlighted by NITI Aayog and the National Education Policy 2020. However, disparities persist in access to experiential and application based STEM learning, especially for girls from economically disadvantaged backgrounds. **Conventional schooling systems often continue to be theoretical and exam oriented**, with limited opportunities for hands on experimentation, inquiry based learning, and real-world application of concepts².

Recognising these systemic gaps, HHSIF partnered with Avasara Leadership Institute (on-ground partner) to implement the '**Honeywell Centre for Advancing Girls in Science**' Programme at **Avasara Academy, Pune**. Avasara Academy (Avasara) is a non-profit residential secondary school in Pune that educates girls from economically disadvantaged backgrounds in India. The programme aimed to strengthen STEM learning for girl students in **Grades 6 to 12** by improving access to experiential learning and structured academic support. This was complemented by access to science laboratories, laboratory equipment, and hands-on learning resources, enabling students to engage in practical and application-based learning.

Below figure provides an overview of the project specifics:

Figure 2: Snapshot of the programme under assessment³



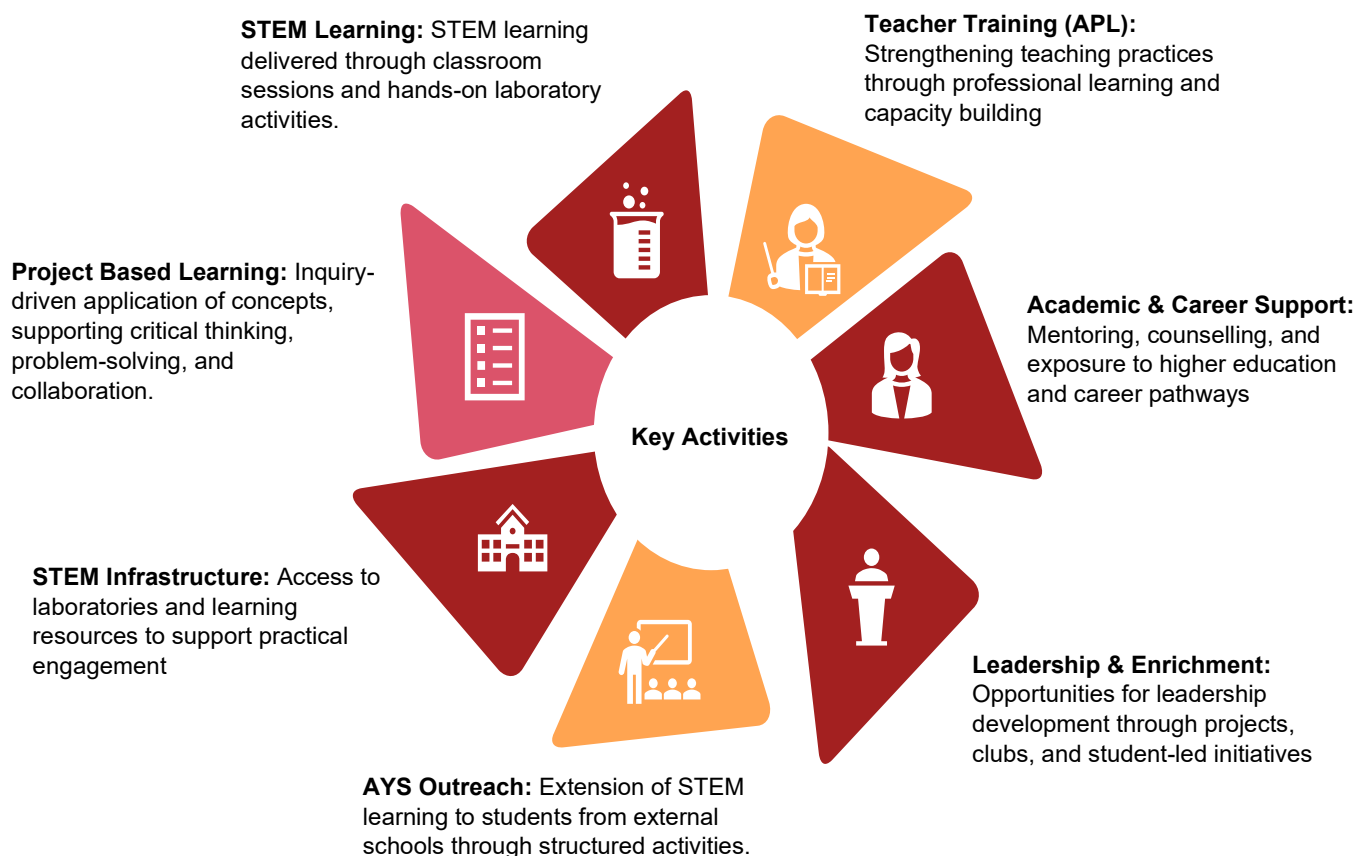
The programme was implemented as part of the school's regular academic and co-curricular activities, with learning integrated across classroom teaching, laboratory sessions, and project-based activities. In addition, structured initiatives such as Avasara Young Scientists (AYS), an outreach initiative providing experiential learning opportunities to students from external schools, and Avasara Professional Learning (APL), focused on teacher capacity building and strengthening pedagogical practices, enabled outreach and institutional strengthening beyond enrolled students. Academic and career support components were delivered through counselling sessions, exposure visits, and

² Source: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf and <https://niti.gov.in/divisions/division/education>

³ Source: Memorandum of Understanding (MoU), October 2021 and addendums between HHSIF and Avasara Leadership Institute and annual reports and shared by on ground partner during discussion

external learning opportunities. These components were implemented through a set of key activities, as outlined below:⁴

Figure 3: Key Activities under the Programme

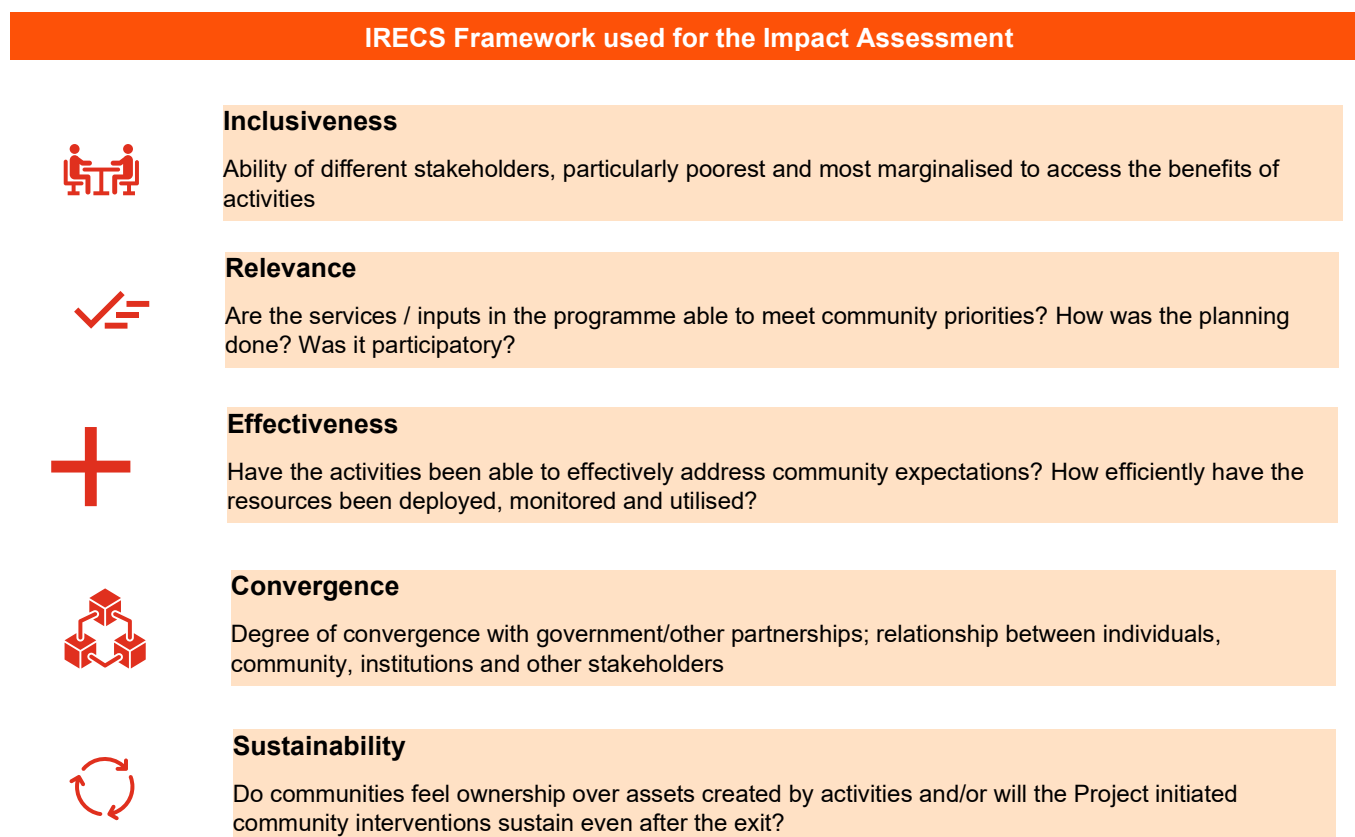


⁴ Source: Memorandum of Understanding (MoU), October 2021 and addendums between HHSIF and Avasara Leadership Institute and annual reports shared by on-ground partner

3. Method of Impact Assessment

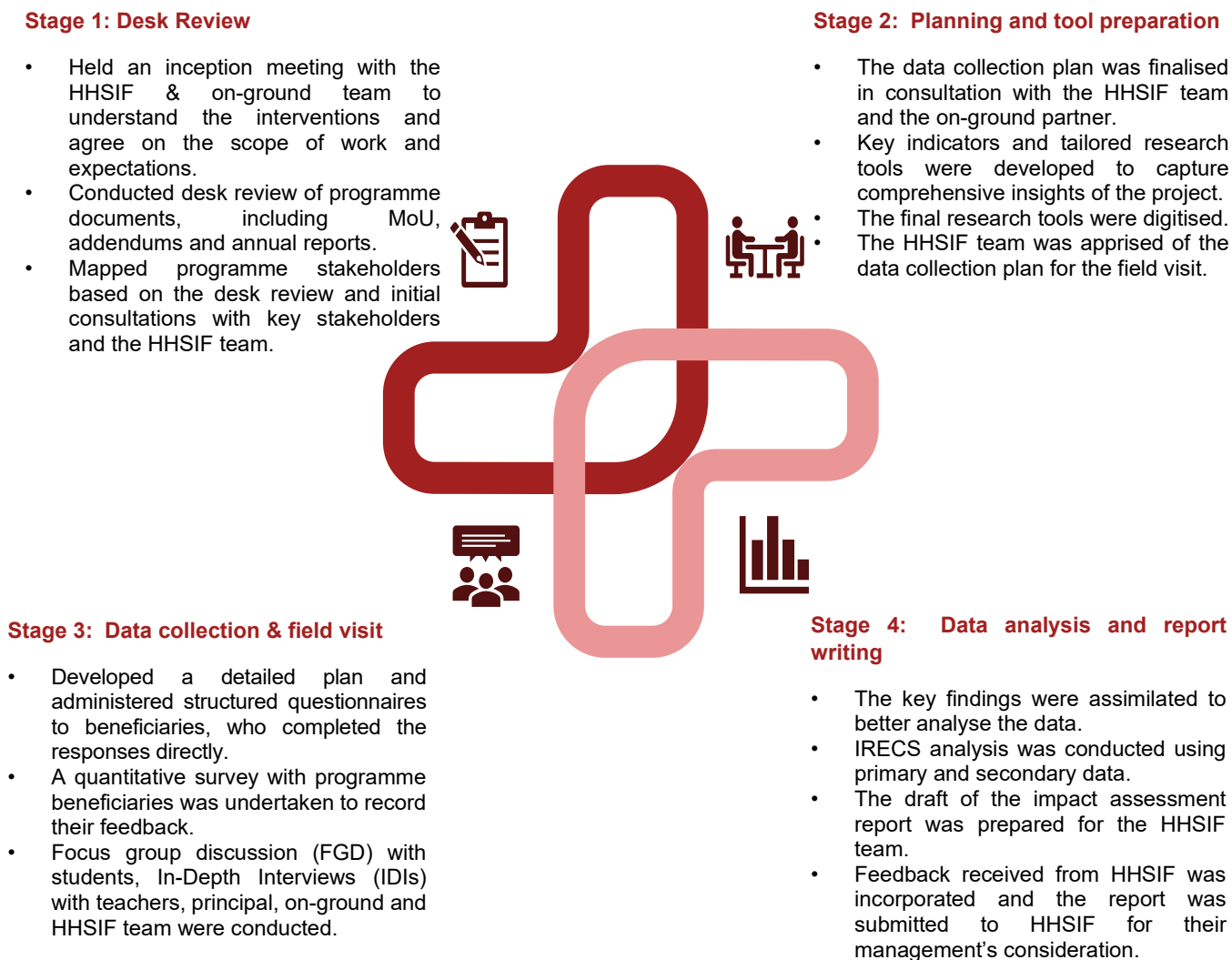
HHSIF engaged PWCALLP to conduct an impact assessment of the ‘**Honeywell Centre for Advancing Girls in Science**’ Programme implemented between **October 2021 to March 2025**. The assessment aimed to evaluate the outcomes and impact achieved during the programme period. The scope of work included reviewing the Key Performance Indicators (KPIs) established by HHSIF’s management within the project implementation framework, focusing on the project’s output, outcomes, and overall impact. The assessment framework followed **Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability (IRECS Framework)**, and recommendations were provided to support further evaluation and decision-making regarding the project’s performance.

Figure 4: IRECS Framework



The overall methodology adopted for conducting the impact assessment study can be categorised into four stages as illustrated below:

Figure 5: Key stages of Impact assessment.



3.1. Sampling plan

The programme's impact was assessed using a **mixed-method approach**, incorporating both qualitative and quantitative techniques to obtain comprehensive insights. For the quantitative component, a structured sampling plan was employed, and **a total sample of 109 students was covered**. The sample size was determined at a 95% confidence level and a 5% margin of error and considering the total number of students, covered by the programme (~500 students between 2021–2025) as the population.

The quantitative survey was self-administered virtually among 109 students using structured tools. As Avasara Academy is a residential school, most students had returned to their hometowns at the time of data collection under this assessment due to completion of academic examinations. In consultation with the IP and HHSIF, a virtual, self-administered approach was adopted. The survey tool was shared through the official email address of Avasara Academy to ensure timely responses.

While responses were sought from students across all years of programme implementation (2021–2025), the survey relied on voluntary, self-administered participation. As a result, responses were unevenly received across academic years, with a higher concentration of responses from the most recent cohort (2024–25) and relatively fewer from earlier years. This limits the ability to draw year-wise or cohort-specific comparisons of programme outcomes.

Table 1: Academic year wise responses

Sr. No.	Academic Year	No. of responses received
1.	2021-22	11
2.	2022-23	10
3.	2023-24	6
4.	2024-25	82
Grand Total		109

For the qualitative component, **a visit was undertaken to the institute**, during which interactions were conducted with teachers and students. In addition, an FGD was conducted with Grade 12 students who were available on the day of the visit to gather detailed perspectives. Details of the stakeholders interviewed are provided in the table below.

Table 2: Qualitative sampling plan

Stakeholder Name	Type of Interactions	Mode of interaction	No. of interaction
Beneficiary Students	FGD	In person	1
Teachers	IDI	In person	2
Principal	IDI	Virtual	1
Avasara Leadership Institute team member	IDI	Virtual	1
Honeywell CSR team	IDI	Virtual	1
Total			6

3.2. Assumptions and Limitations

General:

- The procedures we will be performing will not constitute an audit, examination or a review conducted in accordance with generally accepted auditing standards or attestation standards in India or elsewhere.
- We will not carry out any work or make any enquiries of management after the date of our Impact Assessment Report. Our Impact Assessment Report will not incorporate the effects, if any, of events and circumstances which may occur, or information which may come to light, after the date of our Impact Assessment Report.
- Our Impact Assessment Report will not be a substitute for any enquiries and procedures that Client shall otherwise undertake and judgements Client shall make for any purpose.
- We have not been engaged to, nor will we, provide any management functions or make management decisions.
- PW will not act in the capacity of the Client management; the Client will identify qualified personnel responsible for overseeing the CSR Project(s). We will not assign responsibilities to Client personnel. It will be the responsibility of the Client to identify the core member team who will assist us in this assignment. We will not act in a supervisory capacity over members of Client.
- The study did not include conducting any KYC checks of the on-ground partner, beneficiaries interacted on fields.

- We will not chair any internal meeting of the Client or represent the Client / Client's management in meetings with the other partners and/or beneficiaries.
- We shall not perform any independent verification or assessment for verifying the completeness, accuracy, correctness, authenticity or genuineness of the documents to be provided by any concerned party.
- We will not provide any solution/recommendation for dispute resolution, for the Client, with the NGOs/ stakeholders.
- We should not be held responsible for slippage of schedule due to non – availability of personnel from Client side and delay in providing information or obtaining feedback or facilitating local consultations.
- Our scope of work, including any advice / assistance, will be limited to the scope of Services specifically defined in the Contract. We will not be responsible for the implementation of our recommendations. Any additional work beyond the scope of the assignment shall only be carried out upon mutual agreement by both parties.
- All information or data required for the assignment will be provided by the Client to PW. Any discrepancy in data or wrong information provided by any respondent shall be sole responsibility of the Client.
- Completion of Delivery of the Services is subject to, among other things, Client's timely cooperation including receiving necessary information and timely response to PW's queries. PW will keep Client informed of its progress and of any proposed changes in this timetable should PW believe it will be unable to complete delivery of the Services by the requested date.
- If there are any circumstances that reasonably restricts travel or physical presence of our personnel at your office/location, then without prejudice to your payment obligations, you shall allow such personnel to work from home or other remote location till the time such reasonable restrictions exist. Any delay/default in performing our obligations arising from such restrictions, shall not be attributable to us and shall not be considered a breach on our part and no consequent damage/penalties etc. arising there from would be imposed on us.
- PW will not be designing and/or implementing a CSR system for the Client or designing processes and controls related to it. This assignment does not relate to internal control over financial reporting and does not generate information that is related to accounting records or financial statements.
- We will not finalise the Client's CSR policy, CSR Project's implementation plan and monitoring & evaluation (M&E) framework relating to CSR. PW will only provide recommendations for improvements in the select CSR Project(s) assessed for management's consideration.
- We will not prepare any policy and procedures manuals and will not be responsible for the implementation of our recommendations and management remediation plan.
- We will be responsible only for providing options for consideration of the Client and not make any management decision for selection, prioritization and implementation of the same.
- The current sample estimated is indicative in nature and may change basis the actual condition on the field and availability/non availability of respondents, further information shared by HHSIF etc.

Pertaining to this report:

- The report prepared by the PWCALLP is based upon the (a) information/ documents provided by HHSIF and its implementation partner and (b) data collected by the PWCALLP team. PWCALLP performed and prepared the Information at the client's direction and exclusively for the client's sole benefit and use pursuant to its client agreement. Our report is based on the completeness and accuracy of the above-stated facts and assumptions, which if not entirely complete or accurate, should be communicated to us immediately, as the inaccuracy or incompleteness could have a material impact on our conclusions.
- PWCALLP's work was limited to the samples/ specific procedures described in this report and were base only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as respondents. Accordingly, changes in circumstances/samples/procedures or information available could affect the findings outlined in this report.

4. Key Findings and Analysis

This section presents the key findings and analysis of the impact created by the programme. The insights are drawn from the quantitative study, complemented by information gathered through interactions with key stakeholders.

4.1. Profile of the respondents

This section provides an overview of the respondents involved in the study. The data collected offers insight into the respondent profile and highlights key aspects.

Table 3: Profile of the respondents (n=109)

	The respondent group comprised a mix of current students and alumni. As the study covered students associated with the programme from 2021 onwards, the age profile of respondents varied across cohorts, with 39% below 18 years of age and 31% in the 18–20 age group. (n=109) (refer figure 6)
	Respondents were at different academic stages, with the highest proportion (38%) pursuing undergraduate degrees in science-related fields, followed by 37% in Grades 11 and 12 and 18% in non-science undergraduate programmes. A small proportion (7%) were preparing for competitive examinations (n=109).
	Prior to joining Avasara school, 62% of respondents studied in government schools, while 35% attended private schools, indicating that a majority of respondents studied in government schooling systems, which typically have comparatively limited access to laboratory and experiential learning resources. (refer figure 7)
	The on-ground partner reported that many beneficiaries were first generation learners

Figure 6: Age of the respondents (n=109)

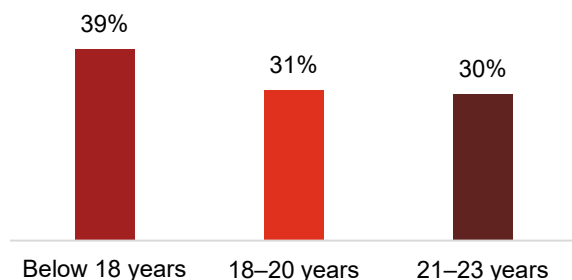
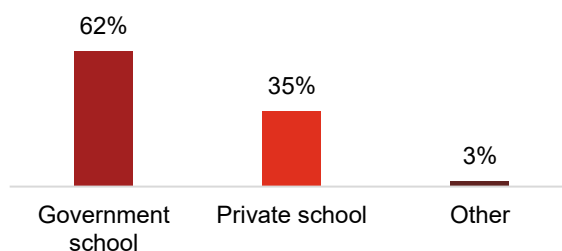


Figure 7: Type of school attended before Avasara (n=109)



4.2. Need for the intervention

As shared by stakeholders, the following challenges were highlighted prior to the project:

- Limited exposure to experiential STEM learning and Infrastructure:** Learning in previous schools was largely theoretical and textbook driven due to inadequate access to laboratories, equipment and experiential learning tools. This constrained students' practical engagement and limited their ability to visualise and apply scientific concepts.

- **Low confidence and limited classroom participation:** Students reported hesitation in expressing ideas and solving science and mathematics problems, influenced by limited interaction and fear of making mistakes in earlier learning environments.
- **Limited awareness of STEM careers and future pathways:** Students had restricted exposure to diverse career options in science and related fields, which affected their ability to make informed academic and career choices.

4.3. Impact of the intervention

4.3.1. Improved access to experiential STEM learning and shift in pedagogy

- The programme enabled access to STEM learning through structured lab exposure and dedicated learning infrastructure. As indicated by the on ground partner, this included access to laboratories, equipment, and resources designed to support practical engagement.
- This was reflected in the survey findings, with **100%** of respondents reporting participation in laboratory sessions (n=109). In addition, 89% described their learning experience as a balanced combination of theory and practical application (n=109) (refer Figure 8).

Figure 8: Nature of STEM Learning (n=109)

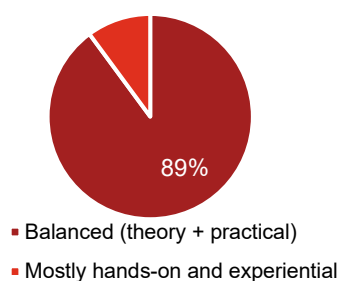
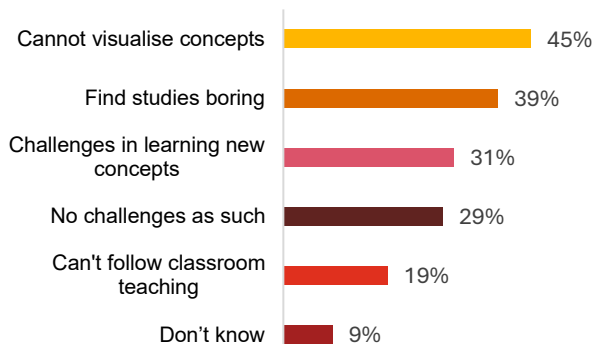


Figure 9: Challenges Faced in Learning STEM Subjects without lab (n=109)

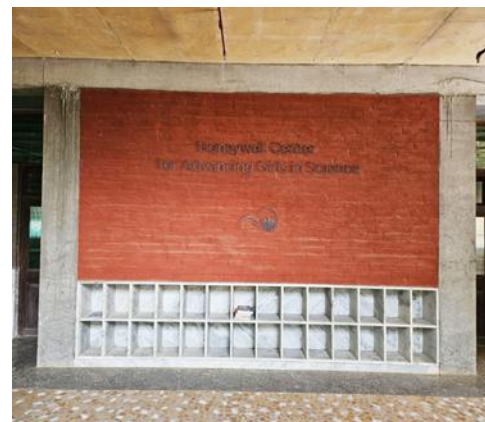


Multiple response question, total may not add up to 100%

- Prior to joining Avasara, respondents reported challenges such as difficulty in **visualising concepts (45%)** and finding studies unengaging (39%), indicating limitations in earlier learning environments (n=109) (refer Figure 9)
- Students indicated that earlier learning was largely **rote-based and exam-oriented, with limited opportunities for application**. In contrast, at Avasara, learning involved experiments, discussions, projects, and real-life examples, which supported better understanding and retention of concepts.

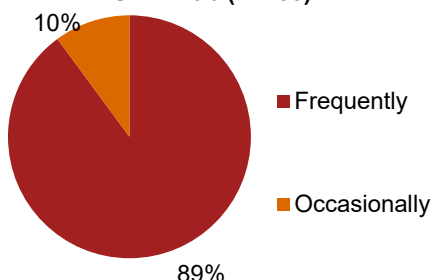
- Teachers indicated that classrooms functioned as active learning spaces, with regular use of group activities and practical exercises. They also highlighted a facilitative approach to teaching, with greater emphasis on exploration, questioning, and peer interaction rather than direct instruction.
- Teachers further indicated that the Cambridge curriculum followed at the institution emphasises application, analytical thinking, and conceptual understanding, which aligns with the programme's focus on experiential and inquiry-based learning.
- **Ninety eight percent** respondents reported access to science laboratories, 51% reported exposure to hands-on mathematics activities and 26% to STEM or innovation labs (STEM-related

Figure 10: Honeywell Branding at school



facilities experienced). This indicates that students were exposed to **multiple forms of practical learning infrastructure** (n=109).

Figure 11: Frequency of Engagement in STEM lab (n=100)

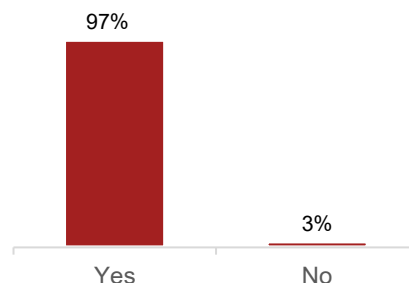


- This access was translated into regular use, with **89% indicating that they participated in hands on STEM activities frequently** (n=109). This suggests that experiential learning was embedded as a regular component of classroom practice (refer figure 11).
- In terms of learning preferences, **70% of respondents** preferred a combination of classroom teaching and laboratory sessions, while 30% preferred fully activity-based learning (n=109).

4.3.2. Improved conceptual understanding, confidence and academic outcomes

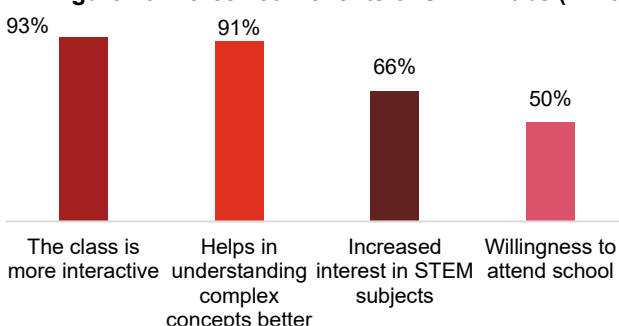
- As per the survey, the proportion of respondents who reported that they could understand science and mathematics concepts easily increased from **32% before joining Avasara to 91% after joining** (n=109). Similarly, **confidence in solving science and mathematics problems** showed a notable increase, with respondents reporting “**very confident**” levels rising from **17% before joining to 72% after joining** (n=109).

Figure 12: Improvement in academic performance post programme (n=109)



- Improvements in academic outcomes were also reported, with **97%** (n=109) of respondents indicating that their **academic performance in subjects such as science and mathematics improved** after the implementation of the programme (refer figure 12). Among those who reported improved academic performance (n=106), **81% indicated that practical learning** helped them understand complex topics more easily, while 61% reported improved retention of concepts.
- In addition, 99% of respondents reported that STEM Labs helped them understand STEM based subjects better and an equal proportion found **practical learning easier than relying on textbooks alone** (n=109). During interactions, students reported that realistic experiments and visual demonstrations helped them better understand abstract concepts and recall them during assessments. It was also noted that learning through activities and projects reduced reliance on memorisation.
- Teachers indicated that **continuous formative assessments, project-based learning, and problem-based teaching approaches were used** to track student progress and support understanding. It was noted that **students were able to engage more actively in classroom discussions** and demonstrate improved clarity in explaining concepts over time.
- Respondents also reported multiple benefits from STEM laboratory-based learning. **93% indicated that classes became more interactive**, while 91% reported improved understanding of complex concepts. Additionally, 66% noted increased interest in STEM subjects and 50% reported improved willingness to attend school (n=109) (refer figure 13).
- Further, all respondents perceived **STEM labs as a better learning experience compared to conventional teaching methods**.

Figure 13: Perceived Benefits of STEM Labs (n=109)



Multiple response question, total may not add up to 100%

- Perception based responses further **indicated improvements in the learning environment**. Ninety six percent students reported increased curiosity to ask questions, while 95% indicated improved ability to connect science and mathematics concepts to real-life situations and increased confidence in performing experiments (n=109).

4.3.3. Alignment of Academic Pathways and Career Orientation in STEM

- The programme contributed to strengthening academic pathways in STEM, supported by continuous engagement of students over multiple years. As indicated in the survey, **82%** of respondents reported being associated with Avasara Academy for 5–7 years (n=109), reflecting continued participation across grade levels within the residential schooling model (Grades 6–12). The remaining respondents reported shorter durations of association, indicating entry into the programme at later grade levels. (n=109).
- When enquired about respondents' current engagement, 38% were pursuing undergraduate degrees in science-related fields, while 18% were enrolled in non-science undergraduate programmes. (n=109) (refer figure 14).
- As reflected in the survey findings and indicated by the academy leadership, students were pursuing different academic paths. While many continued with science-related studies, a small proportion were preparing for competitive examinations such as the National Eligibility cum Entrance Test (NEET) and Joint Entrance Examination (JEE). Such preparation was typically undertaken outside the school through external coaching or additional resources.
- A shift in academic preferences towards STEM and related fields was observed. Prior to joining Avasara, 55% of respondents reported a preference for the science stream, which increased to 75% during their time at Avasara (n=109). Respondents attributed this shift primarily to classroom learning (54%), interactions with teachers and mentors (58%), and exposure to lab-based and project-based activities (45%) (n=109).
- Respondents reported **multiple motivating factors for joining Avasara**, including 92% mentioning improving life opportunities as a girl, access to scholarships at 88%, and better opportunities for higher education in STEM at 64%, as depicted in Figure 15 (n=109).

Figure 14: Current engagement (n=109)

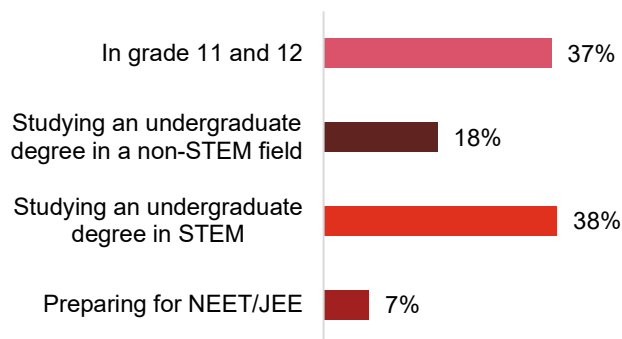
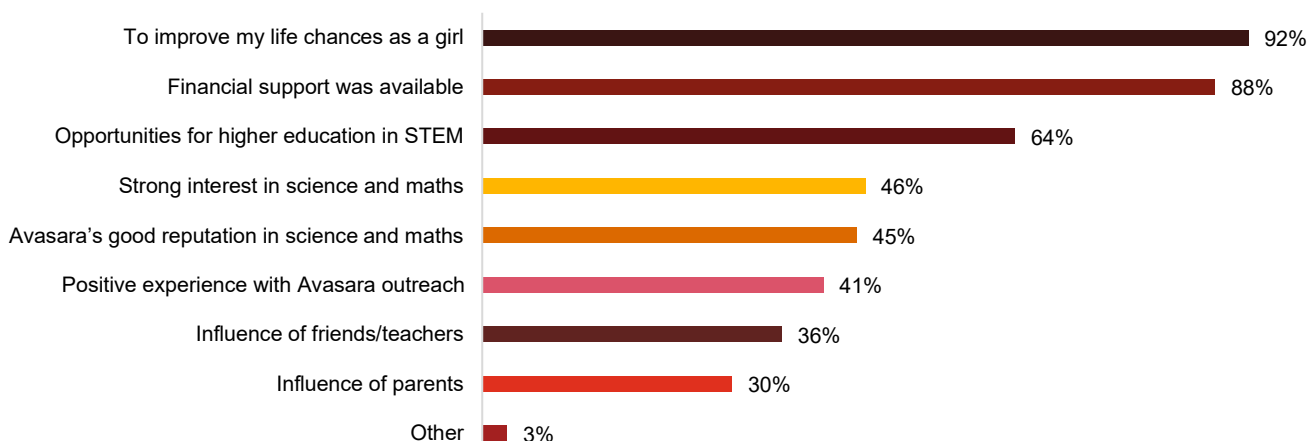


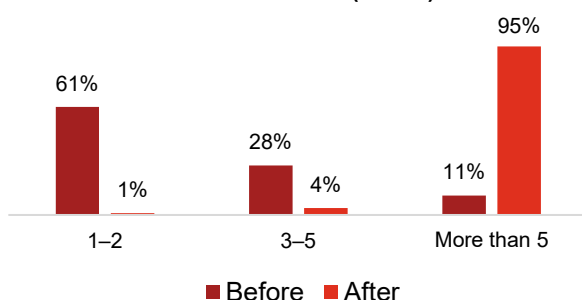
Figure 15: Motivation to join Avasara Academy (n=109)



Multiple response question, total may not add up to 100%

- The programme design included structured support systems such as career counselling, mentorship, and continued engagement beyond school. As indicated by the school leadership, students received guidance on college applications, scholarships, and academic pathways, with continued support beyond Grade 12 through mentorship and follow-up on their academic progression.
- It included exposure visits and external engagements to enhance students' awareness of academic and career opportunities. As indicated during interactions, students visited institutions such as Indian Institutes of Science Education and Research (IISER), where they engaged with scientific tools and interacted with experts from diverse fields. Visits to institutions such as Sanchiti Hospital also provided insights into the application of science and technology in healthcare settings.
- Students reported that exposure to applied learning, projects, and mentorship contributed to clearer academic direction and confidence in pursuing STEM related pathways. Teachers also noted that students demonstrated improved clarity regarding subject choices and future aspirations over time.
- This was reflected in the survey findings, where 75% of respondents reported feeling completely ready for higher education or entry-level opportunities, while 15% reported being moderately ready (n=109).

Figure 16: Shift in Students' Awareness of STEM-Related Careers (n=109)



- The programme also contributed to **increased awareness of career opportunities in STEM**. Before joining Avasara, 61% of respondents reported awareness of only 1–2 STEM careers, whereas after participation, **95% reported awareness of more than five career options** (n=109) (figure 16)

- Survey findings further indicated that **75% of respondents felt completely ready for higher education or entry level opportunities in STEM**, while 15% reported being moderately ready (n=109). During interactions, students noted that exposure to

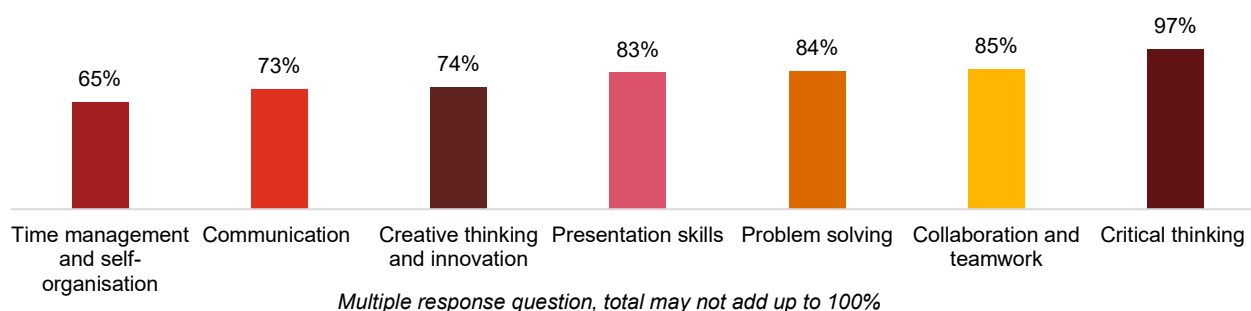
diverse learning experiences, including projects, mentoring, and academic support, helped them better understand higher education pathways.

- During interactions, students indicated that exposure to projects, mentoring, and academic support helped them gain clarity on subject choices and future pathways. Teachers also noted that students demonstrated improved confidence and clarity in making academic and career-related decisions over time

4.3.4. Strengthened Skills, Confidence and Personal Development Outcomes

- Improvements in higher-order cognitive and soft skills were reported, with Avasara Academy leadership highlighting gains in areas such as critical thinking and collaboration. This is supported by survey findings, where 97% of respondents reported improvement in critical thinking and 85% in collaboration and teamwork (n=100) (refer Figure 17).

Figure 17: Skills Developed through STEM Learning at Avasara (n=109)



- The programme also supported improvements in students' **confidence and ability to engage actively in learning environments**. 97% of respondents reported that they felt more confident expressing their ideas and supporting others (n=109) (refer Figure 18). During interactions, students shared that opportunities such as classroom presentations, science exhibitions, and project-based learning enabled them to **articulate their understanding and participate more actively in discussions**. This was also reflected in peer learning behaviors, with students supporting others through academic engagement (n=106), including helping classmates or juniors with homework or concepts 88%, explaining STEM concepts to siblings or peers 78%, assisting peers in exam preparation.

- Engagement in STEM projects enabled students to **apply their learning in practical contexts**. Among 83% (n=109) who undertook STEM projects, 95% reported engaging in science experiments, while 51% participated in working models as depicted in figure 19. It was also noted that 77% of these students presented their work in school exhibitions, providing

Figure 19: Types of STEM Projects Undertaken

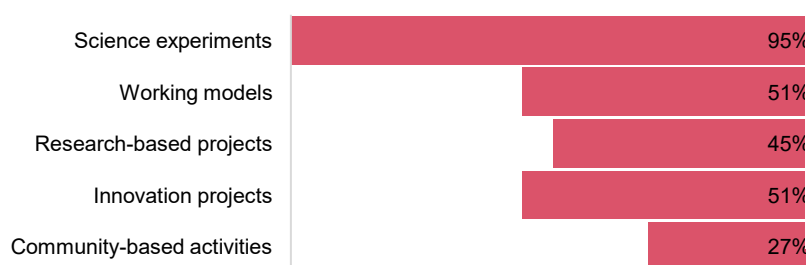
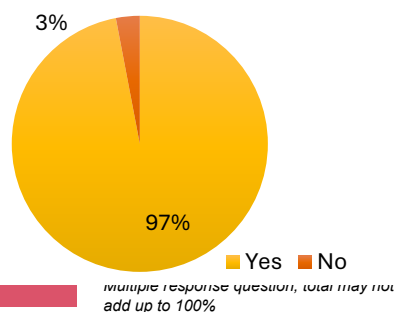


Figure 18: Change in Confidence level in Communication (n=109)



opportunities for communication and demonstration of learning (n=91)

- The AYS initiative served as an outreach component aimed at extending access to science and mathematics learning for non-Avasara students, particularly those from low-income communities in and around Pune. Led by trained Avasara teachers, the camps introduced participants to practical, application-focused methods of learning. By creating engaging, hands-on experiences for children with limited exposure to laboratory-based education, the program effectively reached and supported underserved groups.
- Involvement in competitions** was primarily concentrated at the school level. 79% reported participating in school-level competitions (n=109). It was noted that opportunities for participation were more readily available within the school through exhibitions and internal platforms. However, participation in external competitions was comparatively limited. It was reported that factors such as academic workload, competing priorities, and limited access to external platforms influenced participation levels. This indicates that while internal engagement in STEM related activities was high, exposure to external platforms remained comparatively constrained.

4.3.5. Enhanced Teaching Capacity enabling Sustained Improved Learning

- The programme incorporated a **structured approach to teacher capacity building** through initiatives such as APL. Indicated by on-ground, APL focused on training teachers, providing exposure to experiential pedagogy, and offering continuous academic support to enable effective delivery of hands-on and application-based learning.



Teachers reported that they were able to **independently facilitate STEM Lab sessions and integrate hands on and inquiry-based approaches** into regular classroom teaching. This is also reflected in the survey, where **100%** of the students indicated that teachers were able to conduct lab-based sessions independently.



Student feedback also **reflected the effectiveness of teaching practices**. All respondents reported satisfaction with the content taught, and the overall engagement during STEM Lab sessions was rated at **4.3 out of 5 (n=100)**.



In addition, 95% of respondents reported that **teachers encouraged them to think critically and solve problems independently**, while 91% indicated that teachers were able to address their questions and clarify doubts (n=109)

- The programme design enabled **continuity of improved learning practices within the institution**. Avasara Academy reported that experiential approaches were integrated into routine teaching processes, indicating that programme elements were embedded within the school system rather than being implemented as standalone activities.
- In addition, the **presence of trained teachers and established lab infrastructure** supported continued delivery of practical based education beyond the initial implementation phase. It was observed that these factors enabled consistency in the quality of learning experiences over time.
- The programme also extended its engagement beyond the school through teacher capacity building efforts and outreach initiatives. APL enabled the **dissemination of pedagogical practices and experiential learning approaches to a wider group of educators**, contributing to engagement at the ecosystem level.

In totality, the programme incorporated elements of sustainability through teacher capacity building, institutional integration, and continued utilisation of infrastructure, supporting the continuation of programme outcomes beyond the period of direct intervention.



After joining Avasara Academy, we were exposed to STEM learning beyond what we had experienced earlier, which helped us understand different subjects and make clearer decisions about our future pathways.

- As narrated by a student



5. IRECS Framework

Based on the interactions with the key stakeholders and desk review, the impact of the programme was also assessed on the IRECS framework parameters. The IRECS analysis summary has been presented in the table below.

Table 4: IRECS Table

Parameter	Assessment from Study
Inclusiveness	- Most students came from resource constrained schooling environments, indicating outreach among those with limited exposure to quality STEM learning. Financial support mechanisms such as scholarships enabled participation of students who may otherwise have had limited access to such opportunities. - The programme extended beyond enrolled students through the AYS initiative, which provided hands-on science learning opportunities to students from external schools, particularly those with limited access to laboratory-based learning, thereby expanding access to such opportunities. - Students also took on roles as volunteers and facilitators in AYS, supporting the delivery of activities and enabling peer-led learning. This, in turn, contributed to wider outreach and inclusion within the learning ecosystem
Relevance	- The programme addresses gaps in access to experiential science and mathematics learning among students from resource constrained educational backgrounds, where learning was largely theoretical and lacked opportunities for practical application. - It also addresses limited awareness of career pathways in these fields by integrating exposure to projects, mentoring, and career guidance within the learning process. Gaps in access to laboratory infrastructure and hands-on learning tools, including laboratories and hands-on learning tools, are addressed through the provision of dedicated labs and structured experiential learning opportunities.
Effectiveness	- The programme has demonstrated effectiveness in improving access to science and mathematics learning through structured laboratory exposure and experiential learning approaches. 100% reported participation in STEM Lab sessions, indicating strong coverage of programme activities (n=109) - Access to infrastructure was ensured, with 98% of respondents reporting availability of science laboratories, along with exposure to mathematics and innovation based learning spaces (n=109). Student engagement with experiential learning was high, with 89% reporting frequent involvement in hands on activities, reflecting integration of practical learning within classroom processes (n=109) - Improvements in learning outcomes were observed, with the proportion of students reporting ease in understanding science and mathematics concepts increasing from 32% before joining to 91% after participation (n=109) - Confidence levels also improved, with respondents reporting “very confident” levels in solving science and mathematics problems increasing from 17% to 72% (n=109) - Academic outcomes showed positive trends, with 97% of respondents reporting improvement in academic performance in science and mathematics subjects. - Experiential learning approaches contributed to improved learning experiences, with 93% reporting increased classroom interaction and 91% reporting better understanding of complex concepts.

Parameter	Assessment from Study
	Teaching practices supported these outcomes through the use of continuous assessments, project based learning, and inquiry led approaches, enabling effective delivery of STEM education.
Convergence	- The programme was implemented in alignment with the academic framework followed at Avasara, where the Cambridge curriculum emphasises conceptual understanding, analytical thinking, and application based learning. This was consistent with the programme's focus on experiential and inquiry-based learning. - The programme incorporated teacher capacity building through the APL initiative, enabling alignment between pedagogy, curriculum, and programme objectives - The programme[included an outreach component through the AYS initiative, through which STEM activities were conducted with students from government schools and other non-Avasara schools, enabling linkage with institutions that had limited access to laboratory based learning.
Sustainability	- Continued education in STEM was observed, with 38% of respondents pursuing undergraduate degrees in STEM fields (n=109) - The programme incorporated teacher capacity building through the APL initiative, which focused on equipping teachers with the skills required to deliver experiential and inquiry-based STEM learning. - Teachers were able to independently conduct science Lab sessions, indicating the development of internal capacity within the institution to continue programme activities.

6. Alignment to the HHSIF's CSR Policy and the UN SDGs

The programme is aligned with the CSR focus of HHSIF which supports initiatives in education, particularly those aimed at improving access to quality learning opportunities for underserved communities. The intervention focuses on strengthening STEM education through infrastructure, experiential learning, and sustained academic support, thereby contributing to improved educational outcomes and long-term academic progression.

The programme is also aligned with the following **Sustainable Development Goals**⁵

SDG 4: Quality Education- The programme contributes to strengthening access to quality and inclusive education by providing structured STEM learning supported by laboratory infrastructure, experiential pedagogy, and academic mentoring. Through hands-on learning, inquiry-based approaches, and integration of practical applications, it enhances conceptual understanding and supports improved academic outcomes among students.



SDG 5: Gender Equality- The programme contributes to advancing gender equality by enabling access to quality education and leadership opportunities for girls from underserved backgrounds. Through a supportive residential environment, exposure to science and mathematics education, and mentorship, it strengthens confidence, decision-making, and participation of girls in academic and career pathways



⁵ Source: <https://sdgs.un.org/goals>

7. Recommendations

The following recommendations have been suggested based on our observation and the discussion with the community members.

1. Strengthening integration of competitive examination preparation within the academic model

While support for competitive examinations such as the NEET and JEE has been provided for interested students, there is an opportunity to further strengthen and expand this component to reach a wider group of students. This may include structured bridge modules, optional preparatory sessions, and continued academic guidance aligned with students' aspirations. Strengthening this aspect can support students in navigating multiple academic pathways, while continuing to benefit from conceptual understanding and application-based learning approaches.

2. Exposure to external academic and competition platforms

While student engagement within school-level activities and competitions was evident, participation in external platforms remained limited. Students can be provided with exposure by facilitating participation in district, state, national level competitions, workshops, and academic forums. Strengthening this component would enable students to gain broader exposure, build confidence, and benchmark their learning beyond the school environment.

8. Study Limitations

- The assessment period coincided with the holiday break following student examinations, which restricted in-person data collection. As a result, a virtual, self-administered questionnaire was used to capture students' responses, potentially influencing ability to predetermine academic year wise cohorts, response rates and the depth of engagement compared to face-to-face methods.
- With respect to quantitative data, responses were sought from students across all years of programme implementation (2021–2025), the survey relied on voluntary, self-administered participation. As a result, responses were received unevenly across academic years, with a higher concentration of responses from the most recent cohort (2024–25) and relatively fewer from earlier years. This limits the ability to draw year-wise or cohort-specific comparisons of programme outcomes.
- Qualitative insights were gathered through interactions with current Grade 12 students, as students from other grades were not available during the assessment period. Many of them were absent from the residential campus as they had returned home post exams. IP could hence mobilise limited number of respondents. Therefore, the findings may not fully capture the experiences of students across other grades or the entire beneficiary group.

9. Success Stories

Success Story 1: Progression to Advanced STEM Pathways

Sristi (name changed), who enrolled at Avasara Academy in Grade 6, came from a low-income background with limited prior exposure to advanced STEM learning. Before joining the programme, her access to quality science education and awareness of higher education opportunities was limited.

During her time at Avasara, she was exposed to a structured STEM learning environment that combined academic instruction with practical application, mentoring, and career guidance. Through continuous engagement with laboratory-based learning, project work, and interactions with industry experts, she developed a strong interest in science and research.

The programme also provided sustained academic and career support, including college counselling, scholarship guidance, and mentorship. After completing Grade 12, she secured admission to an international undergraduate programme with scholarship support.

She further gained exposure through internships at leading research institutions, including laboratories associated with institutions such as Harvard and MIT. Building on this experience, she has progressed to pursue a PhD in Quantum Physics.

Her journey reflects the role of sustained academic support, exposure, and mentoring in enabling students from underserved backgrounds to access advanced STEM education and global research opportunities.

Success Story 2: Transition to Higher Education and STEM

Rati (name changed), an alumna of Avasara Academy from the Class of 2022, came from an underserved background with limited prior exposure to advanced STEM learning and higher education pathways.

During her time at Avasara, she was exposed to a structured learning environment that combined academic instruction with practical application, mentoring, and opportunities for skill development. Through engagement in STEM based learning and project work, she developed interest and confidence in pursuing science-related fields.

The programme also provided academic support and exposure to career pathways, enabling her to make informed decisions regarding higher education. Following completion of Grade 12, she secured admission to a Bachelor of Science programme in Computer Science at Ahmedabad University.

In addition to her formal education, she pursued external learning opportunities, including courses in Data Science and design through IBM Skills Build. She also engaged in institutional activities as part of a design team, reflecting on her continued participation in technical and collaborative environments.

Her journey reflects how access to STEM learning, mentoring, and continued academic support contributed to progression into higher education and sustained engagement in technology-related pathways.

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