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Hindalco Industries Limited
One International Center, Tower 4, 21st Floor, Senapati Bapat Marg
Prabhadevi, Mumbai-400013

Date: 6th July 2026

Subject: Final Impact Assessment report of Agriculture & Farm-based Livelihoods CSR Programme for Hindalco Industries Limited (HIL) in units: Renukoot, Renusagar, Lohardaga, Samri and Belagavi

Dear Mr Avijit,

This refers to our [engagement letter/engagement contract] dated 2nd December, 2025 with Hindalco Industries Limited("you") ('the Contract').

We appreciate the opportunity to assist Hindalco Industries Limited in providing Impact assessment services to Hindalco Industries Limited for their CSR programmes in units: Renukoot, Renusagar, Lohardaga, Samri and Belagavi

This is our final impact assessment report of the Agriculture & Farm-based Livelihoods CSR Programme supported by HIL. The performance of our Services and the report issued to you pursuant to the Services are based on and subject to the terms of the Contract.

This report is solely for your benefit and information and is not to be referred to in communications with or distributed or disclosed for any purpose to any third party without our prior written consent. We have been engaged by you for the Services and to the fullest extent permitted by law, we will not accept responsibility or liability to any other party in respect of our Services or the report.

It has been our privilege to work with you, and we look forward to continuing our relationship with you.

Yours sincerely

Full Signature
Jignesh Thakkar
Partner – ESG, KPMG India
KPMG Assurance and Consulting Services LLP

Impact Assessment Report

Theme: Sustainable Livelihood
Name of Project: Agriculture & Farm-based Livelihood Program (Project UNNATI)

Hindalco Industries Limited

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2026

Notice to readers

- Our report shall be prepared solely for Hindalco Industries Limited. KPMG 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 our Client, to the extent agreed in the Agreement.
- Impact assessment is limited to the projects allocated by Hindalco Industries Limited.
- OECD DAC framework has been used in preparing the report as detailed herein. No professional assurance standards ex. ISAE, SSAE etc. have been applied while preparing this report and accordingly the rigors applicable under such standards are not applicable for the scope covered by our report.
- Procedures, analysis and recommendations, if any, are advisory in nature basis the information collected from various sources both publicly and those provided by the client.
- Our observations represent our understanding and interpretation of the facts based on reporting of beneficiaries and stakeholders.
- Our report, by its very nature, may involve numerous assumptions, inherent risks, and uncertainties, both general and specific. The conclusions drawn shall be based on the information available with us at the time of preparing the report.
- We shall not perform an audit and shall not express an opinion or any other form of assurance. Further, comments in our report are not and shall not be intended, nor should they be interpreted to be legal advice or opinion. Client shall be fully and solely responsible for applying independent judgment, with respect to the findings included in the report, to make appropriate decisions in relation to future course of action, if any. We shall not take responsibility for the consequences resulting from decisions based on information included in the report.
- While information obtained from the public domain or external sources has not been verified for authenticity, accuracy, or completeness, we have obtained information, as far as possible, from sources generally considered to be reliable. However, it must be noted that some of these websites/third party sources may not be updated regularly. We assume no responsibility for the reliability and credibility of such information.
- Our work shall be limited to the specific procedures described in this Engagement Letter and shall be based only on the information and analysis of the data obtained through interviews of beneficiaries supported under the programme, selected as sample respondents and discussions with Hindalco Industries Limited team and stakeholders of the programme. Accordingly, changes in circumstances or information available after the review could affect the findings outlined in our report.
- 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.
- In accordance with its policy, KPMG advises that neither it nor any of its partner, director or employee undertakes any responsibility arising in any way whatsoever, to any person other than Client in respect of the matters dealt with in this report, including any errors or omissions therein, arising through negligence or otherwise, howsoever caused.
- In connection with our report or any part thereof, KPMG does not owe duty of care (whether in contract or in tort or under statute or otherwise) to any person or party to whom the report is circulated to and KPMG shall not be liable to any party who uses or relies on this report. KPMG thus disclaims all responsibility or liability for any costs, damages, losses, liabilities, expenses incurred by such third party arising out of or in connection with the report or any part thereof.
- By reading our report, the reader of the report shall be deemed to have accepted the terms mentioned hereinabove.

Table of Contents

<u>About Hindalco Industries Limited</u>	07
<u>Executive Summary</u>	08
<u>SDG Alignment</u>	10
<u>Approach & Methodology</u>	11
<u>Key Assumptions & Limitations</u>	13
<u>About the project: Agriculture & Farm-based Livelihood Program</u>	14
<u>Project's Theory of Change</u>	16
<u>Study Outreach</u>	17
<u>Study Findings</u>	18
<u>Comparative Analysis by HIL CSR units</u>	25
<u>Mapping to Theory of Change</u>	28
<u>Recommendations</u>	39

List of Tables

<u>Table 1: Theory of change of the project</u>	16
<u>Table 2: Impact Assessment Study Outreach</u>	17
<u>Table 3: Comparative Analysis by Hindalco CSR Unit</u>	25
<u>Table 4: Mapping Outcomes to Theory of Change</u>	28

Abbreviations

AAY	Antyodaya Anna Yojana
BPL	Below Poverty Line
CSR	Corporate Social Responsibility
DPDP	Digital Personal Data Protection Act (DPDP Act)
FGD	Focused Group Discussion
IDI	In-Depth Interaction
FPO	Farmer Producer Organisations
HIL	Hindalco Industries Limited
KII	Key Informant Interview
KVK	Krishi Vigyan Kendras
OECD DAC	Organisation for Economic Cooperation and Development - Development Assistance Committee
SHG	Self Help Groups
ToC	Theory of Change
UN-SDG	United Nations - Sustainable Development Goals

About Hindalco Industries Limited

About Hindalco Industries Limited

Hindalco, part of the Aditya Birla Group, ranks among the world’s largest aluminium rolling and recycling companies. It is a global leader in copper and a key player in specialty alumina and hydrates. With a presence in 10 countries and 48 manufacturing facilities, Hindalco is India’s leading copper producer.

Corporate Social Responsibility (CSR) at Hindalco

HIL’s top priority is to empower individuals within our communities and deliver meaningful

value to them. Through their CSR programs, they have positively impacted over 2.5 million lives across India, implementing projects in five key areas: Education, Healthcare, Sustainable Livelihood, Infrastructure Development, and Social Change.



HIL’s CSR Areas

Education

Initiatives work to empower children from economically weaker backgrounds and focus on:

- Pre-school education
- Educational support programme
- Vocational and technical education training
- Adult literacy programme
- School infrastructure development

Healthcare

Improving access to healthcare and building a strong healthcare infrastructure in and around local communities with a focus on:

- Preventive healthcare
- Curative healthcare
- Mother and child-care
- Quality/support programmes
- Healthcare infrastructure

Sustainable Livelihood

Developing interventions that help create sustainable and long-lasting livelihood for the communities with a focus on:

- Vocational trainings
- Trainings on technical skills with a special focus on women and farmers.
- Watershed development & irrigation projects

Infrastructure Development

Facilitating all-round development of communities with a focus on:

- Roads
- Community halls/kitchens
- Sports and recreation centres

Social Change

Countering social evils such as exploitation, inequality and trafficking in remote corners with a focus on:

- Social Welfare, Inclusion & Community Development
- Culture, Heritage & Nation-Building
- Health, Sports, Fitness & Safety

Executive Summary

KPMG has been appointed as an impact evaluation agency by Hindalco Industries Limited to assess the impact of their Agriculture and Farm-based livelihood program. In this report, KPMG India is evaluating the progress of the program across CSR units over the year 2022-23 and understand its relevance, coherence, effectiveness, efficiency, impact, and sustainability.

The study employed a cross-sectional research design utilizing a mixed-method framework for data collection. Qualitative and Quantitative data was gathered through surveys and focus group discussions (FGDs) during discussions with participants.



Under this study, respondents from 5 CSR units across 12 villages were covered.



A total of 173 respondents were surveyed for this study along with other key stakeholders.



5 IDIs were conducted during this study with village sarpanches.

Key Insights from the Impact Assessment



100%

Reported farming for commercial purposes along with their own use.



73%

Shared increase in income due to this intervention.



71%

Reported adopting new or improved farming practices



89%

Reported improved water availability, with access now available throughout the year.



100%

Mentioned improvement in earnings/profit.



98%

Shared increase in amount of irrigated land

Executive Summary

OECD DAC Evaluation

The various components/outcomes of the program were evaluated using the OECD DAC criteria, which include relevance, effectiveness, efficiency, impact, and sustainability. The findings of the study are categorized as follows:

OECD-DAC evaluation framework

Relevance

The program responds to clear gaps faced by small and marginal farmers who earlier depended on subsistence farming, limited irrigation and low yield seeds. Interventions such as agronomy training, improved seeds, horticulture support and irrigation systems reflects the need of the farmers. These activities align well with national priorities on sustainable agriculture and climate-resilient farming.

Effectiveness

The programme demonstrated strong results in achieving intended outcomes:

- ❑ >71% farmers adopted at least two improved farming practices
- ❑ 100% reported transition to commercial farming (alongside subsistence)
- ❑ >90% sapling survival rate under horticulture interventions
- ❑ 73% beneficiaries reported income improvement

Sustainability

Sustainability is strengthened where farmers consistently adopted new practices and maintained equipment. Improved irrigation and diversified crops help reduce climate-related risks and stabilise income. Long-term continuity will depend on regular follow-up, wider coverage of horticulture and soil health services and improved market access that allows farmers to realise full value of produce.

Impact

The interventions led to significant livelihood transformation:

- ❑ Farmers moved from subsistence to commercial agriculture with annual incomes of INR 60,000–80,000
 - ❑ 43% reported increased income due to crop diversification
 - ❑ 40% noted reduction in crop failure events
 - ❑ Improved food security, income stability, and farmer confidence
- The programme also contributed to increased interest in agriculture among youth and strengthened community learning.

Efficiency

The programme improved resource utilisation and reduced operational burden:

- ❑ 98% reported increased irrigated land
- ❑ 89% reported improved year-round water availability
- ❑ Reduced dependence on manual labour and rainfall-based farming systems

Coherence

The project complements government efforts on sustainable agriculture, horticulture, soil health and water efficiency. Better alignment with local agriculture and market linkages can further enhance coherence and long-term value.

Does not meet expectation

Partially meets expectations

Meets expectations

The program evaluation above on OECD-DAC parameters effectively communicate the program's strengths and areas for improvement, providing a comprehensive overview for stakeholders and decision-makers.

UN-SDG Alignment

The Agriculture & Farm-Based Livelihood Program contributes to multiple Sustainable Development Goals by improving agricultural productivity, strengthening farmer livelihoods, promoting climate-resilient farming practices, enhancing efficient resource utilization, and improving food security among rural communities. Through irrigation support, capacity building, horticulture development, soil health management, and market-oriented agriculture, the programme contributes to sustainable and inclusive rural development.

SDG	Alignment with Programme
SDG 1- No Poverty	Enhances household income, livelihood security, and economic resilience of small and marginal farmers through improved agricultural productivity and diversification.
SDG 2 – Zero Hunger	Promotes sustainable agriculture, improved crop productivity, horticulture development, and increased food availability for farming households
SDG 5 – Gender Equity	Supports participation of women farmers and women members of farming households in agricultural training, livelihood enhancement, and decision-making.
SDG 6 – Clean Water & Sanitation	Improves water-use efficiency through irrigation systems, drip irrigation, sprinkler systems, and water resource management practices.
SDG 8 – Decent Work and Economic Growth	Generates income opportunities through commercial farming, crop diversification, value addition, and improved agricultural enterprises.
SDG 12 – Responsible Consumption and Production	Encourages soil health management, organic farming practices, efficient use of inputs, and sustainable agricultural production systems.
SDG 13 – Climate Action	Promotes climate-resilient agriculture through drought-resistant crops, efficient irrigation, horticulture, and risk-reduction measures against crop failure.
SDG 15 – Life on Land	Supports sustainable land management, soil conservation, biodiversity through horticulture, and improved natural resource management.
SDG 17 – Partnerships for the Goals	Strengthens partnerships with Farmer Producer Organizations (FPOs), Panchayats, Krishi Vigyan Kendras (KVKs), local institutions, and community stakeholders.

Impact Assessment: Approach & Methodology

Study Objectives:

The purpose of this study is to assess the impact of Hindalco's CSR project, **Agriculture & Farm-based Livelihood Program**, across their 5 units: Renusagar, Renukoot, Lohardaga, Samri & Belagavi implemented during FY 2022-23.

The primary objectives are:

- i. **Assess Programme Relevance:** Evaluate the extent to which programme interventions addressed the agricultural, livelihood, and resource-management needs of small and marginal farmers.
- ii. **Evaluate Adoption of Improved Agricultural Practices:** Assess beneficiary adoption of improved farming techniques, crop diversification, horticulture practices, soil health management, and modern irrigation methods.
- iii. **Measure Livelihood and Income Outcomes:** Examine changes in agricultural productivity, farm income, profitability, crop yields, and income diversification among beneficiary households.
- iv. **Assess Natural Resource and Productivity Outcomes:** Evaluate improvements in water availability, irrigated land area, efficient resource utilization, soil health, and reduction in crop failure.
- v. **Evaluate Capacity Building and Knowledge Enhancement:** Assess the effectiveness of training programmes, exposure visits, agricultural demonstrations, and technical support provided to farmers.
- vi. **Assess Sustainability of Outcomes:** Examine the extent to which farmers continue to use improved practices, maintain agricultural assets, and sustain benefits beyond project support.
- vii. **Inform future CSR strategy and sustainability:** To generate insights that guide programme refinement, long-term

- viii. **Evaluate programme across OECD-DAC parameters:** To assess relevance, effectiveness, efficiency, impact, coherence, and sustainability of the interventions.

Study Approach:

The key steps in the approach are as below:

Consultation and Scoping

- An initial scoping and inception meeting was held with Hindalco team to establish the parameters and objectives of the engagement.
- A comprehensive project plan was subsequently formulated to guide the overall programme of work.
- Mapping of internal and external stakeholders, was undertaken to identify an appropriate sample for consultation.
- A review of secondary data was conducted to contextualise Hindalco's strategic contributions within its wider CSR framework.

Study design:

- A mixed approach, consisting of both quantitative and qualitative methods, was adopted for the assessment to provide a more comprehensive understanding of the project impact across multiple time points.
- A theory of change-based impact framework was developed to articulate the intended outcomes and impact parameters.

Study tools:

Semi-structured survey tools were developed, grounded in the research questions and objectives of the assessment, designed to capture both quantitative and qualitative data were developed. All tools were finalised after consultation with Hindalco team. Tools for the study included:

- One-to-one surveys
- Focus Group Discussion
- Key Informant Interviews

Impact Assessment: Approach & Methodology

Stakeholder Consultation:

Data was collected during field visits to all 5 study locations.

Sampling:

A mix of stratified random and purposive sampling method was employed to ensure a structured, representative sample reflective of the target geography.

Data Analysis:

The data collected through stakeholder consultations was subjected to both qualitative and quantitative analyses. Triangulation of data was done through:

- Comparing quantitative findings with other data sources such as qualitative interviews or focus group discussions.
- The OECD-DAC evaluation framework has been applied to assess the programme's impact, encompassing dimensions such as design, planning, implementation, monitoring, and evaluation.

Report Preparation

- The results of the study are compiled in a detailed final report, encompassing key findings and actionable recommendations for improving future research and practices.
- The report has been structured in accordance with the OECD-DAC framework to ensure consistency and rigour in evaluation.

by implementing robust data governance frameworks, conducting internal compliance reviews and ensuring protection of data.

For the data collection process, KPMG has adhered to ethical considerations for data privacy:

- **Informed Consent:** All participants were briefed about the purpose of data collection and asked for consent before participating.
- **Confidentiality:** Personal identifiers were removed or anonymised to protect participants' identity.
- **Secure Data Storage:** All collected data has been stored in secure, access-controlled environments to prevent unauthorised access.
- **Limited Access:** Only authorised personnel involved in the project have access to the project data.
- **Use of Data:** Data is used solely for research and program evaluation purposes, in line with the consent provided by participants.

Ethical Considerations for Data Privacy

KPMG has followed the guidelines outlined as per the latest Digital Personal Data Protection (DPDP) Act guidelines

Key Assumptions & Limitations of the Study

Assumptions:

1. The analysis is based on the assumption that responses provided by beneficiaries and stakeholders reflect their actual experiences and outcomes.
2. Data collected through surveys and interviews is assumed to be accurate, consistent, and representative of broader programme impact.
3. Findings rely on the premise that programme design and implementation were carried out as intended and that observed changes can be reasonably linked to interventions.
4. External data and secondary sources used in the study are considered reliable, though not independently verified.
5. The theory of change framework assumes a logical linkage between inputs, outputs, outcomes, and long-term impact.
5. External sources and publicly available data were not independently validated, which may affect reliability in certain cases.
6. The study involves assumptions and inherent uncertainties, and results should be interpreted within these constraints.

These considerations should be taken into account when interpreting the findings and applying them for decision-making or future programme design.

Limitations:

1. The assessment is restricted to selected programmes and sample respondents, and may not fully capture the impact across all beneficiaries or locations.
2. Findings are based on self-reported data, which may be subject to recall bias or respondent perception.
3. The study does not constitute an audit or formal assurance exercise, and conclusions are indicative rather than definitive.
4. Outcomes are assessed based on information available at the time of the study, and may change with evolving programme implementation.

About the project: Agriculture & Farm- based Livelihood Program

Project Rationale:

Agriculture is the primary source of livelihood for a large proportion of households across Hindalco's CSR intervention areas in Renukoot, Renusagar, Lohardaga, Samri, and Belagavi. However, most farmers in these regions are small and marginal landholders who face multiple constraints, including inadequate irrigation facilities, dependence on erratic rainfall, limited access to quality seeds and farm inputs, low adoption of improved agricultural practices, weak market linkages, and declining soil productivity. These challenges have resulted in low crop yields, limited income opportunities, vulnerability to climate-related risks, and continued dependence on subsistence farming.

Introduction to Hindalco's program:

To address these systemic gaps, Hindalco's Agriculture & Farm-based Livelihood Program focuses on strengthening farmer capabilities and promoting sustainable, climate-resilient agricultural practices. The programme emphasises capacity building, agronomic training, improved farm inputs, soil and water resource management, and enhanced access to information and support services. By empowering farmers with modern techniques, diversified livelihood options, and improved productivity models, the programme aims to increase farm efficiency, reduce vulnerability, and create stable, long-term income opportunities. Ultimately, it seeks to build resilient rural livelihoods by making agriculture more productive, climate-resilient, sustainable, and economically rewarding.

FY 2022-23

Implementation year under
Impact Assessment study

FY 2025-26

Assessment year

5 CSR units

Study locations:

Renusagar, Renukoot,
Lohardaga, Samri &
Belagavi

20,559

Project beneficiaries
across study locations

Stakeholders



Farmers



Farmer Producer
Organisations



Village
Panchayat/Local
Governance Bodies

Program Activities and Outreach (FY 2022–23)



Project's Theory of Change

Table 1: Theory of change of the project

Table 1: Theory of change of the project					
Stakeholders	Strategic planning		The effects		
	Intervention	Activities	Output	Outcomes	Impact
Small/Medium/Large scale farmers FPOs/KVKs/SHG members PRI Members	Agriculture & Horticulture training programme/ Farmers group	Provision of training on agriculture and horticulture	Number of training sessions conducted	Percent of trained farmers adopt at least 2 improved practices	- Improved farm productivity and Income stability - Strengthened farmer knowledge and market linkages - Increased adoption of climate-resilient practices - Improved resource efficiency and cost saving
			3899 farmers trained	Reduction in input cost	
	Support for horticulture plots	Provision of saplings, layout & pit preparation; fertigation schedule.	180 horticulture plots developed	Higher survival rate of saplings	
	Seeds Improvement Program	Access to climate-resilient and quality seeds	1,840 farmers supported with improved seeds	Reduction in instances of crop failure	
	Support for improved agriculture equipment and inputs	Subsidized access to drip/sprinkler, mechanization tools	Number of drip/sprinkler systems installed	Increase in irrigated area	
			441 beneficiaries received equipment support	Reduction in irrigation time	
	Integrated agricultural/horticultural improvement programme/productivity improvement programmes	Provision of training on operation/maintenance of the equipments	Number of training sessions conducted 11,672 beneficiaries covered under productivity programmes	Improved knowledge about operation and usage of the equipments	
	Exposure visits /Support for agricultural mela	Visits to model farms, KVKs, FPO	15 exposure visits conducted	Improved awareness of crop diversification and value addition	
			Number of farmers enrolled in integrated improvement programs.	Improved adoption rate	
		Enrolment in agricultural/horticultural improvement programme	Number of farmers adopting improved practices	Improved farm productivity	
	Soil health and organic farming	Provision of soil testing facility	Number of soil samples collected and tested.	Improved soil health	
			2512 farmers covered under soil health initiatives	Improved fertilizer application efficiency	
		Provision of training on organic farming	Number of farmers trained in organic farming practices.	More farmers shifting towards organic farming practices	

Impact Assessment Study Outreach

The table below presents the number of beneficiaries engaged under each intervention and project activity. Since several respondents participated in multiple interventions, there is an overlap in beneficiary counts across activities. To ensure accurate representation and avoid duplication, a unique beneficiary count has also been provided.

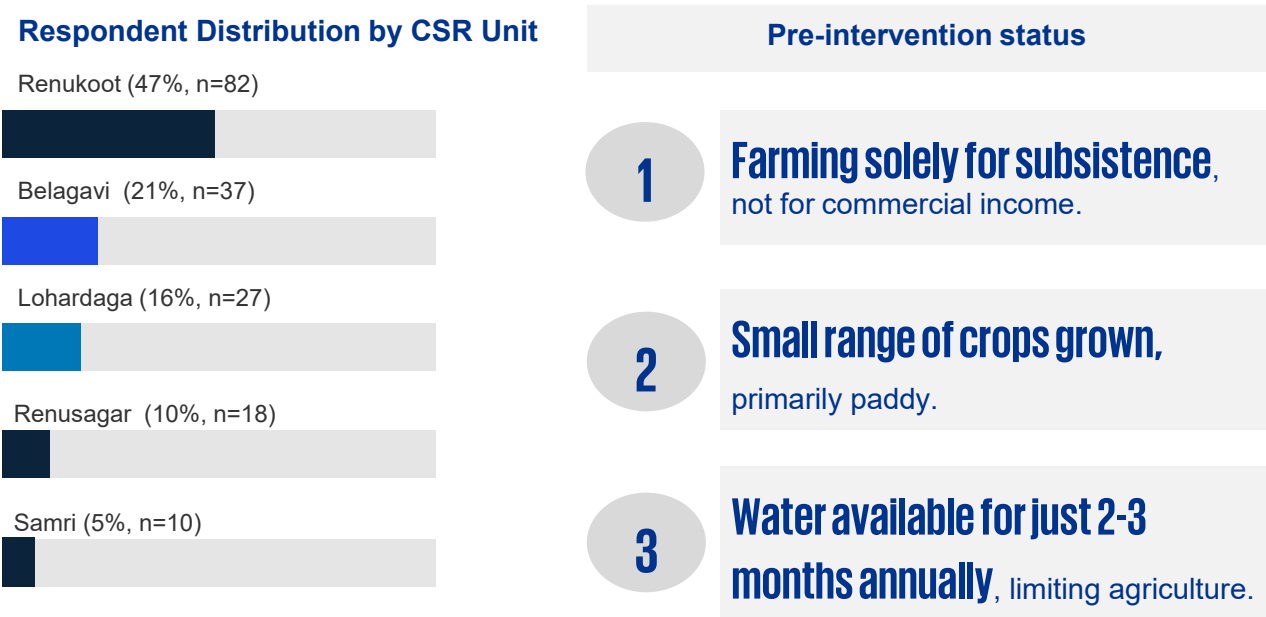
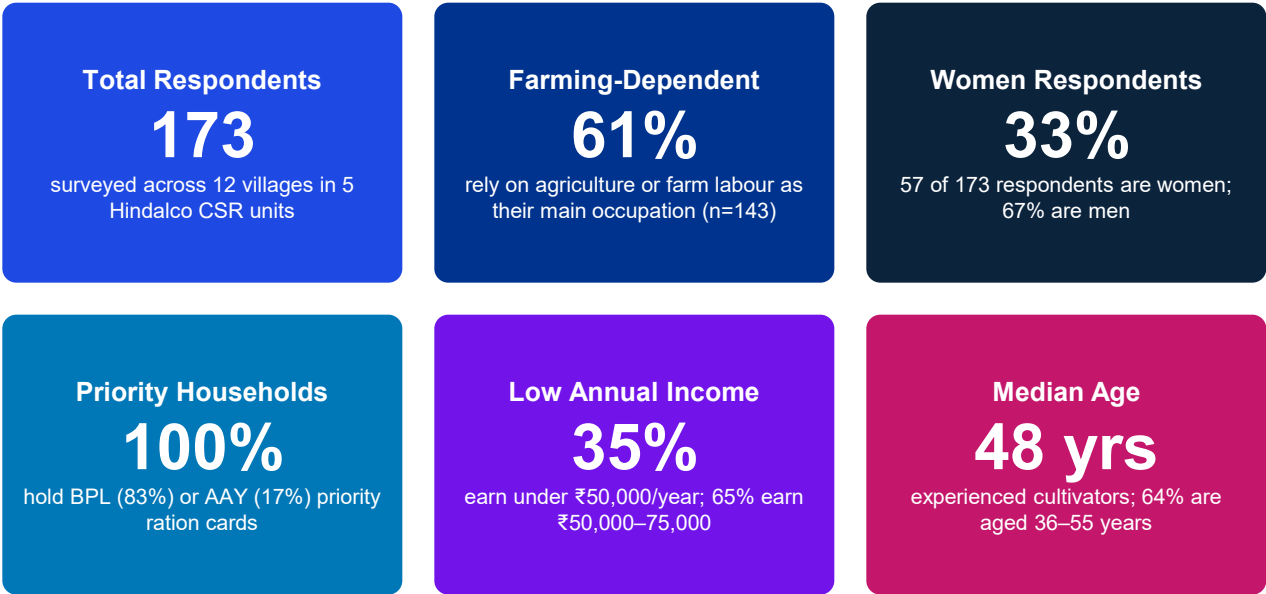
Table 2: Study outreach for the impact assessment study

Intervention	Renusagar	Renukoot	Lohardaga	Samri	Belagavi	Total
Agriculture & Horticulture training programme	9	25	0	8	25	67
Exposure visits /Support for agricultural mela	3	40	5	0	0	48
Support for Horticulture plots & Seeds Improvement Program	23	26	25	20	25	119
Support for improved agriculture equipment and inputs	0	30	47	0	23	100
Soil health and organic farming	18	30	0	0	19	67
Total	53	148	77	28	92	401
Unique Respondents	18	82	27	10	37	173
Grand Total	401 Surveys (173 respondents) + 5 IDI (178 respondents reached)					

IDIs were conducted with 5 village sarpanches.

Respondent Profile

This profile summarises the 173 respondents surveyed for the Agriculture & Farm-based program across 12 villages and five Hindalco CSR units, Lohardaga, Renukoot, Renusagar, Samri and Belagavi. Respondents were predominantly smallholder farmers from priority (BPL/AAY) households.



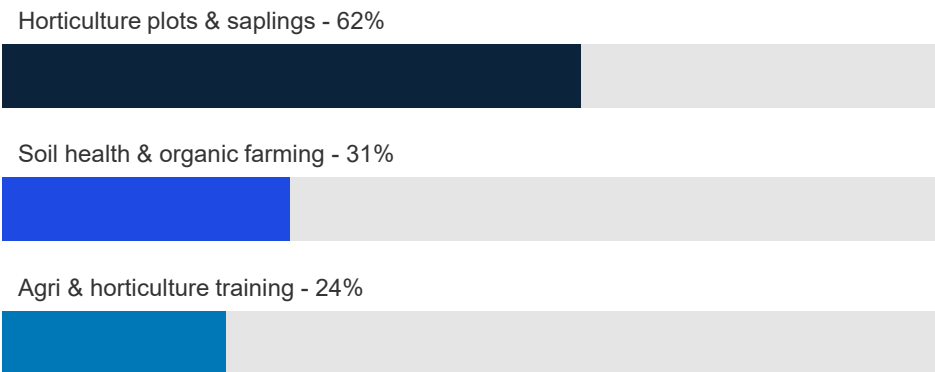
Key Insight:
The program reaches a predominantly smallholder, low-income base , every respondent holds a BPL or AAY priority ration card, and 61% depend on farming for their livelihood. Coverage is heavily weighted toward Renukoot , which alone accounts for 47% of respondents (82 of 173), while Samri contributes just 5% (10). Respondents are experienced cultivators (median age 48; 64% aged 36–55) and one in three is a woman, a base well-suited to interventions that raise farm productivity and household income.

Key Outcome Indicators

These indicators capture self-reported outcomes among respondents who availed the program's five interventions - agri & horticulture training, horticulture plots, integrated agriculture & irrigation support, exposure visits & agri mela, and soil health & organic farming. Percentages are of farmers responding to each indicator.



Service Utilisation Across Interventions



Key Insight:

Outcomes are strongly positive where farmers participated: all recipients report reduced crop failure and expanded irrigation, 83% improved profit margins and 73% saw income gains. But the knowledge-based modules reached far fewer farmers - training (24%), exposure visits (29%) and soil health (31%) - while horticulture and irrigation support each reached 62%. Input-cost reduction (43%) and sapling survival above 75% (47%) are the weakest links, signalling uneven module delivery that is examined by unit on the following slides.

Agriculture & Horticulture Training Programme

The Agriculture & Horticulture Training Programme aims to strengthen rural livelihoods by equipping farmers with practical knowledge, modern farming techniques, and sustainable cultivation practices. Through structured training sessions, farmer group meetings, and hands-on demonstrations, participants learn improved methods for crop production, soil health management, water use efficiency, and horticulture-based income diversification. The programme enables farmers to adopt high-yield varieties, better pest and nutrient management practices, and more market-oriented approaches. By enhancing skills and building a collaborative farmer network, the initiative supports increased productivity, stronger market linkages, and long-term resilience for farming households.

□ Usefulness of trainings

Farmers shared that they were provided training on how to cultivate crops such as onion, cauliflower, cabbage, bhindi, and tomatoes - crops they could not grow earlier due to lack of water, seeds, and proper techniques.

All respondents shared learning new and improved methods of farming.

>71%

Farmers reported adopting at least 2 new or improved farming practices from the trainings.

Farmers found the trainings extremely useful to adopt/include in their farming practices.

□ Improvement in earnings

100%

Mentioned improvement in earnings/profit

Earlier farming was for self consumption and did not contribute to earnings. Now, farmers shared earning between INR 60,000-80,000 annually.

□ Reduction in input cost

This included the cost of seeds, water, lift irrigation, and other necessary inputs. Since farmers were previously engaged only in subsistence farming, their input expenses were relatively low. However, after the implementation of the project, input costs have increased-reflecting a rise in agricultural activity and an expansion in farming operations.

48%

Mentioned a significant decrease in input cost



Figure 1: Horticulture farming with drip irrigation and mulching

The Agriculture Livelihood Programme aims to strengthen farmers' knowledge, confidence, and adoption of improved farming practices by facilitating exposure visits and supporting participation in agricultural melas. Through guided field visits to progressive farms, research centres, and demonstration plots, farmers gain first-hand insights into modern cultivation techniques, high-yield crop varieties, improved irrigation methods, and new technologies. Participation in agricultural melas further helps them interact with experts, access information on government schemes, compare farm equipment, and explore market-linked opportunities.

By broadening farmers' awareness and equipping them with practical, experience-based learning, the programme encourages informed decision-making, enhances productivity, and supports long-term livelihood resilience.

In Renukoot, farmers were trained to develop hybrid saplings by combining different varieties of mango. A conventional mango tree takes approximately 10 years to bear fruits, however, these hybrid trees give fruits in 3-4 years.

Farmers across all locations shared that they have attempted to grow cross breeds of flower, guava and cauliflowers, etc.

While all respondents reported attempting crop diversification after the visits, only 41% indicated that they were able to diversify their crops successfully.

Nearly 43% reported being able to improve their incomes due to diversification.

43%

Mentioned that their incomes have improved after crop diversification

Growing fruits, vegetables, and flowers that have a short cultivation cycle has helped farmers achieve higher yields and build confidence in the new techniques we have adopted. This shift has significantly strengthened our trust in crop production and contributed to increased income through the cultivation of seasonal crops, fruits, and flowers.



Figure 2 : Horticulture with Hydroponic (soilless) farming

The Horticulture Support Programme aims to enhance farmers' income opportunities by promoting diversified and high-value cultivation practices. Under this initiative, farmers are provided with guidance, inputs, and on-field support to develop and maintain dedicated horticulture plots. The programme focuses on improving knowledge of crop selection, orchard management, planting techniques, soil nutrition, and pest control. By enabling farmers to adopt horticulture alongside traditional crops, the initiative helps create additional revenue streams, strengthens climate resilience, and improves long-term livelihood stability for rural households.

Field observations indicated that this support has currently reached a limited number of farmers.

❑ Techniques taught to farmers

- Farmers shared that they were provided with a range of agricultural inputs, including vegetable seeds such as paddy, onion, and chana, along with saplings of fruit-bearing plants like bamboo and mango.
- They were demonstrated with techniques like multi-cropping and inter-cropping to simultaneously grow different crops together.

❑ Improved survival rate of saplings

- The survival rate of the saplings provided was indicated by farmers to be about 85-90%, considering that survival depends on various factors including temperature, humidity, and damage caused by wild animals, etc.
- Respondents highlighted that the incidence of crop failure has decreased, with 40% noting that such events have now become rare.

>90%

Was reported as the survival rate of the saplings provided

40%

Reported that crop failure events have become rare.

Farmers, particularly from Renukoot and Renusagar, shared that they are now able to grow crops like onion, cauliflower, cabbage, bhindi, and tomatoes-crops they could not cultivate earlier due to lack of water, seeds, and proper techniques.



Figure 3 :Traditional / open-field crop farming

Support for improved agriculture equipment and inputs

The programme focuses on enhancing farm productivity and reducing labour burden by providing farmers with improved agricultural equipment and essential inputs.

As part of the initiative, farmers shared receiving tools such as sprinkler systems, sprayer machines, and other modern implements that support efficient irrigation, better crop protection, and timely field operations. These technologies help farmers optimise water use, reduce manual effort, and improve the quality of crop management. By enabling access to upgraded equipment that many farmers could not previously afford, the programme contributes to increased agricultural output, reduced input losses, and improved earnings for farming households.

□ Increase in amount of irrigated land

98%

Respondents reported that amount of irrigated land had increased



Figure 4: Irrigation pump that is used to water the farm in picture on the right side

□ Increase in income

63%

Shared increase in income due to this intervention with about 38% reporting an increase of INR 10,000 or more.

□ Improvement in water availability

89%

Respondents reported improved water availability, with access now available throughout the year.

All respondents shared being confident in using the system independently. They appreciated not having to spend money to get the activity done.



Figure 5: Farm watered from an irrigation pump

Soil health & organic farming

The Soil Health & Organic Farming Programme focuses on helping farmers understand and improve the quality of their soil while encouraging a gradual transition toward sustainable and organic cultivation practices. Through targeted demonstrations and guidance sessions, farmers learn how to assess soil composition, identify nutrient deficiencies, and adopt suitable organic inputs to restore soil balance.

Although the intervention has so far reached only a small number of farmers, participants shared that the programme has helped them recognise what their soil lacks and what amendments, such as organic matter, micronutrients, or natural soil conditioners, are needed to improve productivity. By building awareness around soil health and promoting environmentally responsible farming methods, the initiative supports long-term soil improvement, reduced chemical dependency, and healthier crop outcomes.

47%

Respondents mentioned that their soil was tested under the intervention

Although the intervention has been currently done with very few people, farmers shared becoming aware about the soil deficiencies in their farmlands. Additionally, they were explained what fertilisers to add to their soil.

Farmers shared that their soil texture has improved post the intervention.



Figure 6: Soil testing laboratory at ABRTF, Renukoot

Comparative Analysis by Hindalco CSR Unit

Table 3: Comparative Analysis by Hindalco CSR Unit

Indicator	Lohardaga (n=27)	Renukoot (n=82)	Renusagar (n=18)	Belagavi (n=37)	Samri (n=10)	Overall (n=173)
Horticulture / saplings availed	22%	100%	100%	100%	41%	72%
Irrigation / equipment availed	78%	58%	NA	100%	NA	62%
Training availed	1%	58%	NA	100%	37%	39%
Income increased	42%	100%	100%	100%	25%	73%
Profit margins improved	62%	98%	67%	100%	NA	83%
Input costs reduced	4%	73%	56%	NA	NA	43%
Sapling survival >75%	NA	NA	100%	100%	NA	47%
Crop failure reduced	100%	100%	100%	100%	NA	100%

Figures are the % of each unit's respondents. Colour scale: green ≥ 80%, amber 40–79%, red 1–39%, grey -not availed.

Key Takeaways

- Belagavi is the benchmark unit, with full participation across available interventions and outstanding performance on income improvement (100%), profit margins (100%), and practice adoption. However, no reduction in input costs was reported, indicating an opportunity to strengthen cost-efficiency interventions.
- Lohardaga, despite having the largest respondent base, received primarily irrigation support. Limited exposure to training (1%) and horticulture interventions (22%) translated into weaker outcomes, with only 42% reporting increased income and 4% reporting reduced input costs.
- Renukoot and Renusagar demonstrated strong livelihood outcomes, with 100% of respondents reporting increased income. Renukoot benefited from a balanced intervention mix, while Renusagar achieved strong results largely through horticulture support despite the absence of irrigation and training components.
- Samri recorded comparatively lower performance across key indicators, with 41% availing horticulture support, 37% participating in training programmes, and only 25% reporting income improvement. The findings suggest that intervention coverage and intensity in Samri need to be strengthened to achieve outcomes comparable to other units.
- Sapling survival rates above 75% were concentrated in Renusagar and Belagavi (100%), while no comparable evidence was available for Lohardaga, Renukoot, or Samri, highlighting the need for strengthened monitoring and post-plantation support across units

Narrative Interpretation: Unit-Level Divergence

Renukoot (n=82)

Renukoot is the largest unit (49%) and a strong, well-rounded performer. Participation is broad - horticulture (100%), training (58%) and irrigation (58%) - and outcomes follow: 98% improved profit margins, 100% reported higher income, 73% saw lower input costs and 62% adopted two or more practices. Its one weakness is sapling survival, where 0% exceeded 75% - a quality issue, not a participation gap. It is the program's most replicable model.

Belagavi (n=37)

Belagavi is the benchmark unit, with 100% participation across all five interventions. Every respondent adopted improved practices, reported higher income and improved profit margins, and achieved sapling survival above 75%. Its single gap is input costs - 0% reported a reduction - suggesting cost-side inputs such as organic methods and bulk procurement were absent locally. It is the clearest proof of the full Theory of Change pathway.

Lohardaga (n=27)

Lohardaga contributes about 16% of all respondents and shows the weakest performance. Coverage skewed heavily to irrigation and equipment support (78%), while horticulture reached just 22%, training 1% and exposure visits 1%. With little knowledge-based input, only 4% reported lower input costs, 0% achieved sapling survival above 75%, and just 42% saw income gains - far below the 73% program average.

Renusagar (n=18)

Renusagar excels on horticulture but lacks asset and knowledge modules. Every respondent took up horticulture and 100% achieved sapling survival above 75% - the best in the program - yet none received irrigation, equipment or training. Despite this narrow model, 100% reported higher income and 56% lower input costs, though profit improvement (67%) trails its peers. Adding irrigation and training is the most direct route to benchmark results.

Samri (n=10)

Samri had relatively limited intervention coverage, with 41% of respondents availing horticulture support and 37% participating in training programmes. However, no respondents reported receiving irrigation or equipment support. Consequently, only 25% reported income improvement, the lowest among all units. The findings suggest that limited intervention intensity and the absence of complementary asset-based support constrained programme outcomes. Expanding irrigation, horticulture, and market-linkage interventions could help improve livelihood gains in the unit.

Narrative Interpretation: Unit-Level Divergence

What Explains the Divergence?

Outcomes track the breadth of modules a unit received, not the number of farmers reached. Units that combined asset support with knowledge modules - training, horticulture and soil health - converted participation into income and profit. Where delivery ran through a single channel, such as Lohardaga's irrigation-only or Renusagar's horticulture-only model, gains were only partial. Module mix, not scale, is the strongest predictor of impact.

Cross-Unit Synthesis

The programme demonstrates clear differences in outcomes across units, driven largely by the combination of interventions delivered. Belagavi and Renukoot emerged as the strongest performers, while Renusagar achieved strong results through a horticulture-led approach despite limited intervention diversity. In contrast, Lohardaga and Samri recorded weaker outcomes due to narrower intervention coverage and limited integration of asset- and knowledge-based support. The findings indicate that a balanced package of training, horticulture, irrigation, and market-oriented agriculture is the strongest driver of income and productivity improvements. Expanding this integrated approach, particularly in Lohardaga and Samri, represents the greatest opportunity to enhance overall programme impact

Mapping to Theory of Change

Table 4: Mapping Outcomes to Theory of Change

Intervention	Outcome (Theory of Change)	Finding from Study	Assessment
Agriculture & Horticulture Training	Improved knowledge; adoption of better farming practices	24% reach; among those trained, 72% adopted two or more practices and 100% found them useful.	Partially Meets
Support for Horticulture Plots	Higher productivity; resilient horticulture	62% reach; 100% now face crop failure less often or rarely.	Meets Expectations
Seeds / Sapling Improvement	Better crop establishment & survival	Sapling survival above 75% for 47% overall - 100% in Renusagar & Belagavi, 0% in Lohardaga & Renukoot.	Partially Meets
Improved Equipment & Inputs	Resource efficiency; reduced labour	Among recipients, 98% reported increased irrigated land, 89% reported improved water availability, and 63% reported increased income from the intervention.	Partially Meets
Integrated Agriculture & Irrigation	Income stability; expanded cultivation	62% reach; irrigated area increased for 100% and household income rose for 73%.	Meets Expectations
Exposure Visits / Agri Mela	Crop diversification; market exposure	29% reach; 100% of attendees diversified crops and report related income gains.	Partially Meets
Soil Health & Organic Farming	Sustainable soil use; better prices	31% reach; soil-test advice followed by most tested farmers; 96% report better price realisation.	Partially Meets

Recommendations by Hindalco CSR Unit

01 Rebalance Lohardaga Through Diversified Support

Priority: Lohardaga (49% of respondents)

Coverage skewed to irrigation - only 22% received horticulture and 1% training - and just 42% saw income gains. Add training, soil-health management and cost-reduction interventions so the large irrigation base converts into higher productivity and income.

02 Fix Sapling Quality in Renukoot

Priority: Renukoot

Renukoot is strong on income (100%) and profit (98%) but recorded 0% sapling survival above 75%. Strengthen nursery sourcing, planting guidance and after-care, then document its well-rounded model for replication elsewhere.

03 Add Irrigation & Training in Renusagar

Priority: Renusagar

Renusagar leads on sapling survival (100%) but received no irrigation, equipment or training. Introduce integrated irrigation and farmer training, and expand exposure visits (only 3 attended) to lift its 67% profit rate toward benchmark.

04 Tackle Input Costs in Belagavi

Priority: Belagavi (benchmark unit)

Belagavi achieves 100% on income, profit and adoption but 0% input-cost reduction. Add cost-side inputs - organic methods, bulk procurement, efficient equipment - and use it as the host for cross-unit exposure visits.

05 Scale the Knowledge Modules

Priority: Program-wide

Training (24%), exposure visits (29%) and soil health (31%) reach far fewer farmers than asset modules (62%), yet they drive cost-saving and adoption. Set minimum coverage targets so every farmer gets at least one knowledge module.

06 Strengthen Integrated Support in Samri

Priority: Samri

Samri reported the lowest income improvement (25%) despite participation in training (37%) and horticulture activities (41%). Expanding irrigation support, market linkages, exposure visits, and productivity-enhancing interventions can help translate participation into stronger livelihood outcomes.

Cross-Cutting Recommendations

- Strengthen MIS & data quality:** income fields contained data-entry artefacts and module response bases were inconsistent. Deploy a standardised, validated MIS across all four units for clean outcome data, cross-unit benchmarking and evidence-based iteration.
- Gender-sensitive programming:** one in three respondents (33%) is a woman. Add women-focused indicators and disaggregate all outcomes by gender to track differential impact and design inclusive interventions.
- Converge with government schemes:** link interventions with PM-KISAN, PMKSY micro-irrigation, the Soil Health Card scheme and FPO / market-linkage programmes to extend reach and sustain gains beyond the project period.
- Standardise sapling quality and cost-reduction measures:** Sapling survival (>75%) and input-cost reduction show wide variation across units. Establish common protocols for nursery selection, plantation support, and cost-efficiency interventions to reduce performance gaps across locations.

Testimonials from the field

“With water now available throughout the year, we no longer worry about our crops drying up. Even during peak summer, we can manage at least one irrigation cycle without stress.”

“Earlier, we depended only on rainfall. Now, with improved water structures, we feel more secure planning our crops.”

- on Water Availability and Irrigation

“We used to grow only one or two crops, mostly for our own use. After the training, we started trying new varieties and methods-our fields look different now.”

“Demonstrations helped us understand how to manage pests naturally. We see healthier crops with fewer chemicals.”

- on Crop Diversification and Improved Practices

“Regular meetings have helped us share experiences. Farming no longer feels like an individual struggle-we learn together.”

“Younger people are taking interest again because they see that farming can improve with the right support.”

- on Community Learning and Confidence



Figure 7: Strawberry cultivation under protected conditions using container-based farming techniques

Glimpses from the field



Latitude: 24.113992
Longitude: 83.081442

Figure 8: Interaction with community members on education and farming interventions



Latitude: 24.114037
Longitude: 83.081442

Figure 9: Interaction with community members in Supachua village



Figure 10: AB RTP visit in Muirpur, Renukoot

Glimpses from the field



Figure 11: Cabbage plant grown using horticulture farming practice



Figure 12: Cauliflower plant (row cropping) grown using horticulture farm practice



Figure 13: Mixed cropping containing aloe vera and other plants

Thank you

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