Impact Assessment Report

Every Village a Bio Village

A programme to achieve sustainable Human Development Goals

Project no: 10283
Project title: Every Village a Bio Village - A programme to achieve sustainable Human Development Goals
Project duration: 01-Jan-2020 to 31-Mar-2024
Funder: Bajaj General Insurance Limited
Implementation Agency: M S Swaminathan Research Foundation
Impact Assesment Conducted by: Renalysis Consultants Pvt Ltd (CSRBOX)

Disclaimer For the Impact Assessment Report

This report has been prepared solely for the purpose set out in the Memorandum of Understanding (MoU) signed between Renalysis Consultants Pvt. Ltd. (CSRBOX) and Bajaj General Insurance Limited (BGIL) undertake the Impact Assessment.

This impact assessment is pursuant to the Companies (Corporate Social Responsibility Policy) Amendment Rules 2021, notification dated 22nd January 2021.

This report shall be disclosed to those authorised in its entirety only without removing the disclaimer.

CSRBOX has not performed an audit and does not express an opinion or any other form of assurance. Further, comments in our report are not intended, nor should they be interpreted to be legal advice or opinion.

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In preparing this report, CSRBOX has used and relied on data, material gathered through the internet, research reports, and discussions with personnel within CSRBOX as well as personnel in related industries.

With Specific to Impact Assessment, CSRBOX

- Specific to the Impact Assessment of the project “10283” by BGIL, CSRBOX has neither conducted an audit nor due diligence nor validated the financial statements and projections provided by BGIL.
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- The premise of an impact assessment is ‘the objectives’ of the project along with output and outcome indicators pre-set by the programme design and implementation team. CSRBOX’s impact assessment framework was designed and executed in alignment with those objectives and indicators.

Executive Summary

The *Every Village a Bio-Village* initiative, implemented by the M. S. Swaminathan Research Foundation (MSSRF) with support from Bajaj Finance Ltd., was designed to strengthen sustainable farming systems and diversify livelihoods in the tribal-dominated district of Koraput, Odisha. This impact assessment examines the outcomes of the project during 2022–23 across Boipariguda and Kundra blocks, drawing on a mixed-methods approach that included household surveys with 387 respondents, focus group discussions, in-depth interviews, and field observations.

Context and Rationale

Koraput's predominantly tribal households face challenges of low agricultural productivity, soil degradation, food insecurity, and limited access to markets. With **94% of respondents dependent on agriculture as their primary livelihood** and **69% reporting their incomes as unstable prior to the programme**, the Bio-Village model was introduced to demonstrate agroecological practices, promote nutrition gardens, support women with drudgery-reducing tools, strengthen SHGs and community-based institutions, and establish market and scheme linkages.

Key Programme Activities

The initiative addressed multiple livelihood dimensions through:

- Agroecological demonstrations in millet and paddy cultivation using practices such as SMI, INM, and IPM.
- Household nutrition gardens to enhance dietary diversity and reduce food expenses.
- Training of master farmers in aquaculture for diversified incomes.
- Distribution of women-friendly agricultural tools to reduce labour burdens.
- Strengthening of SHGs and Cluster Facilitation Centres (CFCs) to improve access to inputs and schemes.
- Linking farmers to government entitlements and market actors, including piloting tamarind value addition.

Major Findings

The assessment is structured around the OECD-DAC framework — Relevance, Coherence, Effectiveness, Efficiency, Impact, and Sustainability.

Relevance:

- **87% of respondents felt the programme mostly or completely addressed community needs.** Training content was widely appreciated, with **88% rating it useful or very useful**.

Coherence:

- The programme effectively aligned with government systems, as **79% reported linkages to extension services** and **82% accessed schemes with programme support**. Beneficiaries recognised the interventions as complementary to existing state priorities.

Effectiveness:

- **78% agreed their household income increased, with 16% strongly agreeing.** A remarkable **94% were able to start or expand enterprises**, and **93% reported these remain operational.** Farmers also observed improvements in soil health, crop diversity, and yields.

Efficiency:

- Inputs and equipment were not only valued — **98% found them relevant** — but also delivered on time, with **90% citing timely or very timely distribution**. This reliability enabled farmers to use resources in alignment with cropping cycles.

Impact:

- Livelihood outcomes extended beyond income. Farmers reported enhanced food security through nutrition gardens, greater women's involvement in farming and processing, and improved social standing within their communities — **74% said social dynamics such as respect and decision-making had mostly improved.**

Sustainability:

- Evidence points to long-term adoption, with **97% planning to continue livelihood activities** and **97% already sharing practices with peers.** Nearly **84% rated their current income sources as mostly or highly sustainable without external support**, and **97% acknowledged the emergence of SHGs or CFCs as enduring community-based models.**

Voices from the Field

Beneficiary narratives underline both successes and gaps. Farmers described healthier soils, improved yields, and better incomes through tamarind value addition. Women reported increased confidence through participation in composting and processing activities. At the same time, respondents highlighted the need for continued support with soil testing, regular follow-up trainings, and stronger market linkages to expand value-added products.

Recommendations

Building on these findings, the assessment proposes:

- Regular soil testing cycles with simplified advisory services.
- Consolidated buyer networks and business training for SHGs to scale value-added products like tamarind cakes.
- Community-level bio-input production units to reduce labour burdens on individual farmers.
- Institutionalising women's groups for processing and marketing to secure gender equity in benefits.
- Formalising farmer-to-farmer learning systems through demonstration plots and lead farmers.
- Longer engagement periods (3–5 years) with phased handover to local institutions for sustained adoption.

Abbreviations

Abbreviation	Details
BGIL	Bajaj General Insurance Limited
CSR	Corporate Social Responsibility
CSRBOX	Renalysis Consultants Pvt. Ltd. (CSRBOX) - Impact assessment partner
MoU	Memorandum of Understanding
MSSRF	M. S. Swaminathan Research Foundation (implementing partner)
OECD-DAC	Organisation for Economic Co-operation and Development - Development Assistance Committee (evaluation criteria)
SDG	Sustainable Development Goals
ESG	Environmental, Social and Governance
ToC	Theory of Change
SMI	System of Millet Intensification
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
IFS	Integrated Farming System
FPO	Farmer Producer Organisation
SHG	Self-Help Group
CFC	Cluster Facilitation Centre
FYM	Farmyard Manure
KII	Key Informant Interview
FGD	Focus Group Discussion
ST	Scheduled Tribe
SC	Scheduled Caste
OBC	Other Backward Classes
PKVY	Paramparagat Krishi Vikas Yojana (GoI scheme promoting organic farming)
NFSA	National Food Security Act, 2013
NAPCC	National Action Plan on Climate Change
GoI	Government of India

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Chapter 1 :

Introduction

1.1 Context

Koraput, an aspirational district in Odisha, is home to a predominantly tribal population and is globally recognised for its rich agrobiodiversity. Yet, it is also a region facing acute development challenges. Agriculture, the mainstay of livelihoods, is highly vulnerable due to **erratic rainfall, soil degradation, and dependence on rainfed cultivation**. More than **80% of farmers in Koraput are small and marginal**, cultivating less than 2 hectares of land, with average holdings of around 0.95 hectares.[1]

The predominance of rainfed farming makes the region highly vulnerable to climatic shocks. Farmers frequently face **soil erosion, land degradation, and erratic monsoons**, which affect both food production and household income security.[2] These risks are compounded by structural constraints, including poor access to irrigation, fragmented holdings, and limited market linkages.

Despite these vulnerabilities, tribal farmers of Koraput act as **custodians of indigenous crops such as millets and paddy**, crops critical for both nutrition and resilience. Recent initiatives such as the **Odisha Millets Mission** have highlighted the potential of millet-based farming systems for strengthening resilience and nutrition in tribal districts like Koraput, reporting improvements in productivity through practices such as the System of Millets Intensification (SMI).[3] Complementary interventions by organisations like MSSRF have further emphasised the role of participatory seed systems and agroecological practices in sustaining both biodiversity and rural livelihoods.

In this context, **Every Village a Bio-Village** initiative was launched by the M. S. Swaminathan Research Foundation (MSSRF) supported by Bajaj Finance Ltd. Rooted in **pro-nature, pro-poor, and pro-women strategies**, the programme seeks to enable tribal and marginal households to achieve food, nutrition, and income security through sustainable agriculture, ecological farming practices, and strengthened community institutions.

1.2 Background

The Bio-Village initiative is being implemented across **20 tribal-dominant villages in Koraput**, selected based on geographic, socio-economic, and ecological criteria. It promotes an integrated approach that combines **capacity building, agroecological demonstrations, women's inclusion, nutrition security, institutional strengthening, and market linkages**. The interventions are designed not only to improve productivity but also to build resilience against climate change and safeguard agrobiodiversity.

BGIL's social investments strategically support sectors such as **skilling, education, health, child protection, and rural development**. Partnering with organisations like MSSRF, BGIL aims to deliver evidence-driven interventions in aspirational districts, maximising both social and environmental impact. MSSRF, as the implementing partner, contributes decades of expertise in ecological agriculture and community-based rural development. Its **Bio-Village**

[1] https://www.cimmyt.org/news/seeds-of-change-transforming-agriculture-in-koraput-odisha
[2] https://dhan.org/acedrr/proj-disaster-preparedness-for-tribal-rainfed-farmers.html?
[3] https://ncds.nic.in/sites/default/files/PR08NCDS2022.pdf?

framework is internationally recognised as a model that blends **traditional knowledge with modern scientific practices** to ensure sustainable rural transformation.

CSRBOX has been engaged to conduct the impact assessment of this initiative for 2022–23. This study will evaluate outcomes around **adoption of sustainable practices, food and nutrition security, institutional strengthening, gender inclusion, and resilience-building**, using a combination of quantitative and qualitative methods.

1.3 Geographic Coverage

The programme spans **20 villages across the aspirational blocks of Kundra and Boipariguda in Koraput, Odisha**, covering a universe of 1,015 farming households. These villages were selected for their high tribal population, dependence on rainfed agriculture, and ecological vulnerability.

1.4 Alignment with Schedule VII of the Companies Act, 2013

Sub-Section	Activities	Alignment with the Bio-Village Programme
(i) Promoting education, including vocational skills and livelihood enhancement projects	Capacity building of farmers, aquaculture skill development, and training on climate-resilient practices	The programme delivers structured training for farmers and Master Fishery Farmers, enhances vocational skills, and strengthens sustainable livelihood options for tribal households.
(ii) Promoting gender equality, empowering women, and reducing inequalities	Women-focused training, SHG strengthening, and drudgery-reducing tools that enhance participation and reduce inequities	The programme actively includes women in training sessions, promotes women-led SHGs, and distributes tools designed to reduce drudgery, thereby improving equity and agency in farming activities.
(x) Rural development projects	Agroecological farming, nutrition gardens, and sustainable livelihoods for tribal communities in remote villages	The programme supports rural development through ecological agriculture, household nutrition gardens, and improved access to schemes and markets, directly addressing the needs of marginalised rural communities.

1.5 Alignment with Sustainable Development Goals (SDGs)

SDG	Targets	Alignment
	By 2030, end hunger and ensure access to safe, nutritious, and sufficient food	Household-level nutrition gardens and promotion of millet-based farming improve food and nutrition security
	By 2030, ensure women's full participation and equal opportunities	Women's participation in SHGs and training; provision of women-friendly agricultural tools
	By 2030, ensure sustainable management of natural resources	Adoption of organic inputs, INM, and IPM supports sustainable agriculture
	Strengthen resilience and adaptive capacity to climate-related hazards	Climate-resilient agroecological practices reduce vulnerability of smallholder farmers
	Protect, restore, and promote sustainable use of ecosystems	Conservation of indigenous crops and agrobiodiversity through ecological farming

1.6 Alignment with ESG Principles

- **Environmental**: Promotes ecological agriculture, biodiversity conservation, organic input use, and climate-resilient practices.

- **Social**: Enhances nutrition, strengthens women's participation, empowers SHGs and tribal households, and reduces migration risks.
- **Governance**: Builds convergence with government schemes, institutionalises collective decision-making through SHGs and CFCs, and promotes data-driven monitoring and accountability.

1.7 Alignment with National Policies

Policy	Objectives	Alignment
National Policy for Farmers (2007)	Enhance profitability, sustainability, and ecological security for farmers	Programme integrates agroecological practices and strengthens farmer institutions
National Food Security Act (2013)	Ensure access to food and nutritional security	Nutrition gardens and diversified cropping enhance household dietary diversity
National Policy for Women (Draft, 2016)	Strengthen women's role in economic participation and decision-making	Women-focused capacity building and SHG-led initiatives
Paramparagat Krishi Vikas Yojana (PKVY)	Promote organic farming through cluster-based approaches	Programme encourages organic input use and community adoption
National Action Plan on Climate Change (2008)	Promote climate-resilient agriculture	SMI, INM, and IPM practices reduce vulnerability to climate variability

Chapter 2 :

Analysis of Key Programme Activities

This chapter provides an overview of the major programme activities undertaken under ***Every* Village a Bio-Village** initiative in Koraput. It highlights how interventions were implemented across thematic areas and presents preliminary observations from the field.

2.1. Agroecological Demonstrations and Sustainable Farming

The initiative promoted agroecological methods such as the **System of Millet Intensification (SMI)**, organicsolutions, Integrated Pest Management (IPM), and Integrated Nutrient Management (INM). Demonstration plots served as live classrooms for farmers, encouraging adoption through peer-to-peer learning.

Survey data shows that **tribal farmers formed the overwhelming majority of participants (83% Scheduled Tribe households)**, underlining the programme's targeted outreach. This is significant as tribal farmers in Koraput are traditional custodians of indigenous crops, making them central actors in sustaining biodiversity.

> *"Spacing the seeds and using natural fertilisers has made our harvest better and costs less." - Farmer, Patraput*

By focusing on ST households and promoting ecological practices, the programme leveraged traditional knowledge while providing low-cost alternatives to chemical-intensive farming.

2.2. Nutrition Gardens and Household Food Security

A core feature of the programme was the promotion of **nutrition gardens** to enhance dietary diversity. Respondents highlighted multiple benefits: **improved access to vegetables and fruits, reduced household food expenses, and better nutrition for children**.

Notably, several households reported combining benefits, for eg., reduced costs alongside improved child nutrition. This layered impact reflects how nutrition gardens simultaneously address food security and household economics.

Nutrition-sensitive agriculture under the Bio-Village model offered households both dietary improvements and indirect financial relief, without dependence on external markets.

2.3. Aquaculture and Livelihood Diversification

To diversify incomes, the programme trained **Master Fishery Farmers** in pond-based aquaculture. Although uptake remains limited compared to crop-based interventions, early participation indicates scope for scaling.

The **survey results shows adoption of aquaculture-related livelihoods, though at small numbers relative to agriculture**. This suggests the intervention is still emerging but holds potential to reduce dependence on rainfed farming.

The aquaculture component represents a forward-looking diversification strategy, even if its current contribution to household income remains modest.

2.4. Women's Empowerment and Drudgery Reduction

The programme distributed **tools** (weeders, sprayers) to reduce the physical burden of agricultural labour. The survey indicates that **40% of respondents were women**, underscoring deliberate inclusion. Respondents noted that the tools reduced labour intensity and allowed women to contribute more effectively to farming decisions.

By addressing both participation and drudgery, the programme created pathways for greater gender equity in agriculture.

2.5. Strengthening Community Institutions

The reactivation and strengthening of **Self-Help Groups (SHGs)** and **Cluster Facilitation Centres (CFCs)** was a key feature. These platforms facilitated group training, input distribution, and scheme convergence.

Survey evidence shows that **SHGs and CFCs were actively engaged in programme activities**, helping to mobilise households and coordinate interventions.

While the long-term sustainability of these institutions will be assessed in the next chapter, their active participation during implementation ensured wider coverage and inclusion.

2.6. Market Linkages and Scheme Convergence

The initiative facilitated access to government schemes (such as irrigation support, seed subsidies, and credit services) and began building connections with local markets.

Survey data confirms that **households accessed schemes through programme support**, though the degree of uptake varied. Farmers also reported early improvements in exposure to markets beyond their immediate villages.

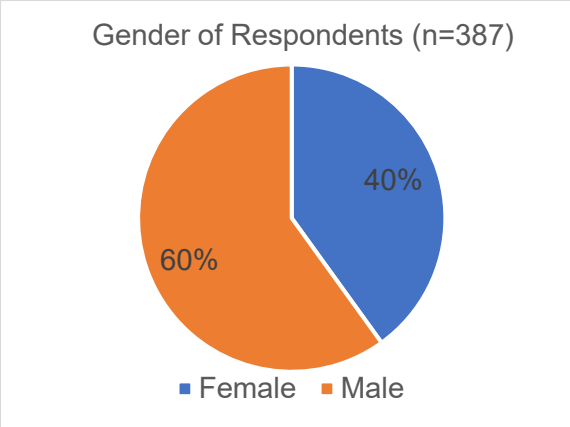
Convergence efforts are visible, but strengthening forward linkages to markets remains an area of opportunity for greater income security.

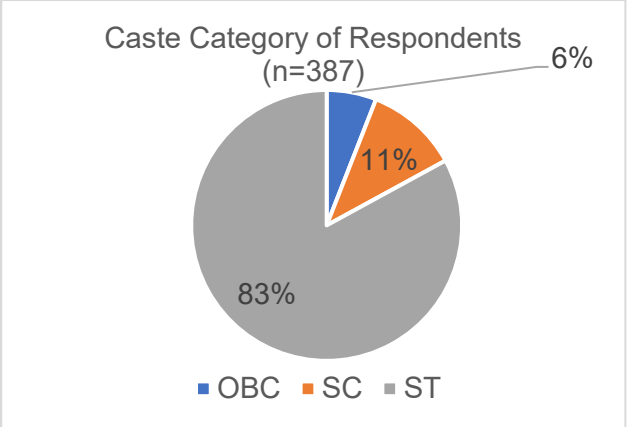
Chapter 3 :

Impact Findings

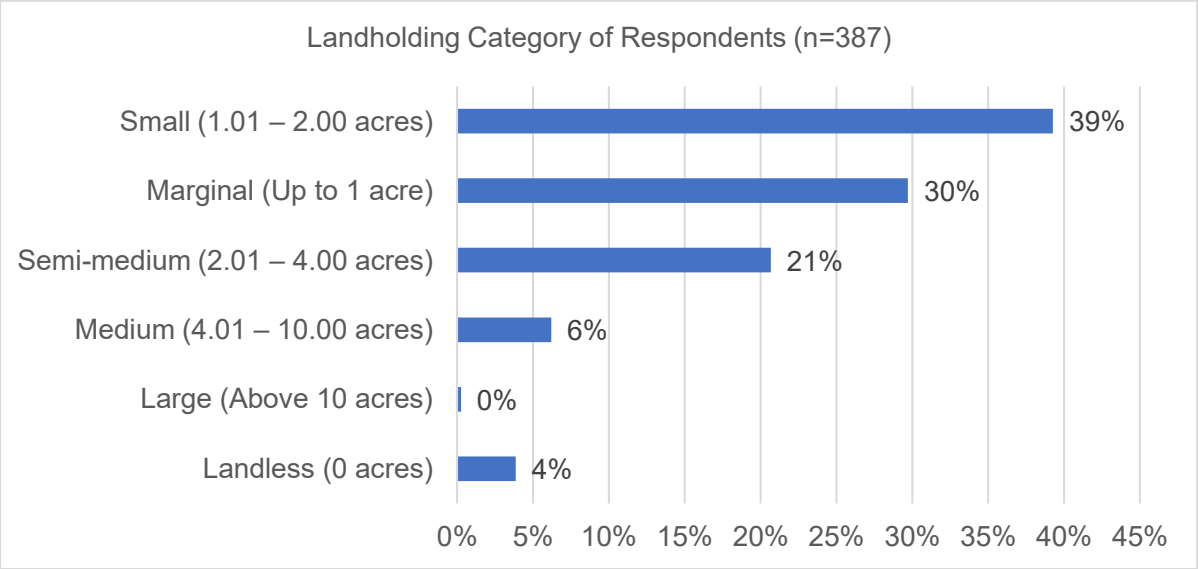
The following chapter attempts to capture the range of impact generated by the interventions of **Every Village a Bio-Village** initiative on the targeted farming households and communities, as well as the extent of sustainability that has been established. The study is anchored in the **OECD-DAC framework**, under which the impact has been analysed across the parameters of **Relevance, Coherence, Effectiveness, Efficiency, Impact, and Sustainability**. Given the programme's focus on ecological farming, nutrition security, gender inclusion, and institutional strengthening, the analysis explores how these interventions have contributed to resilience-building and wellbeing in the tribal villages of Koraput.

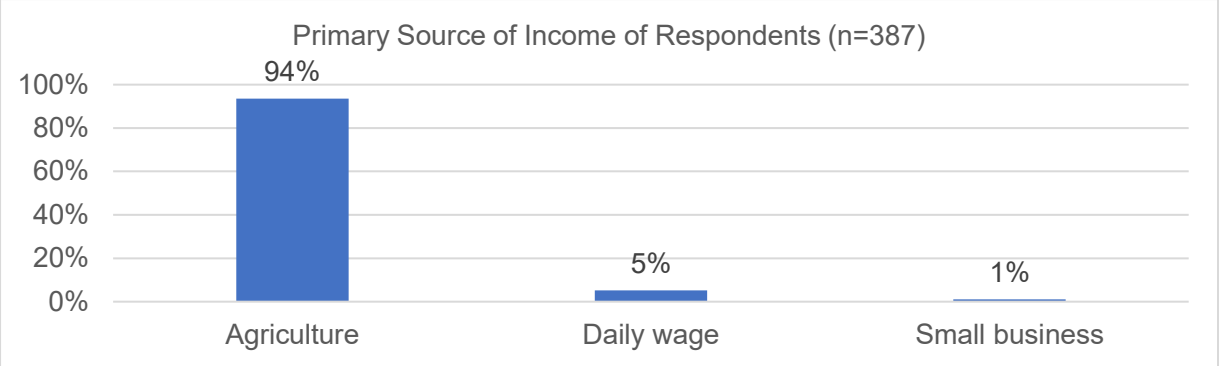
3.1 Beneficiary Profile





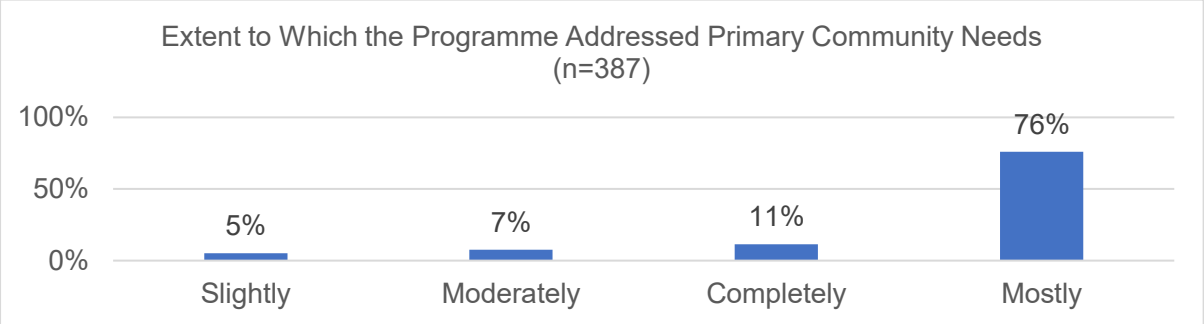
The Bio-Village programme engaged a balanced respondent group, with **40% women** included, reflecting efforts to capture female perspectives in agriculture and nutrition. At the same time, **83% of respondents belonged to Scheduled Tribes**, confirming that the initiative effectively reached its intended tribal communities while also extending benefits to SC (11%) and OBC (6%) households.



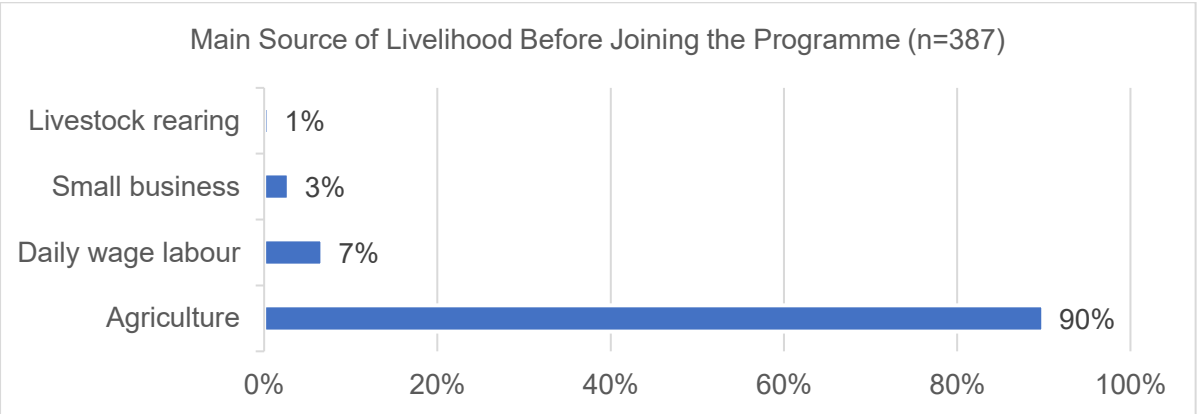


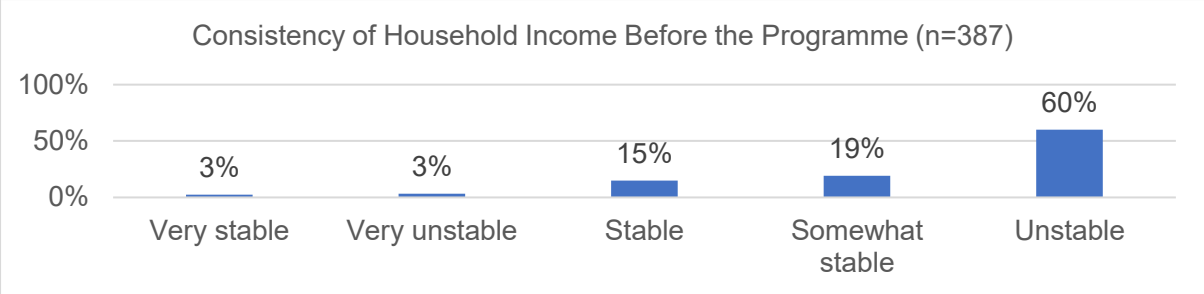
The beneficiary profile shows that the vast majority of respondents are **small (39%) and marginal farmers (30%)**, with a further **21% in the semi-medium category**, while only **4% are landless**. At the same time, **94% of households depend primarily on agriculture for their livelihoods**, with very few engaged in daily wage work (5%) or small businesses (1%). Together, these findings underline the programme's strong alignment with the needs of smallholder farming households, who remain heavily reliant on agriculture and therefore most likely to benefit from agroecological and livelihood-strengthening interventions.

3.2 Relevance



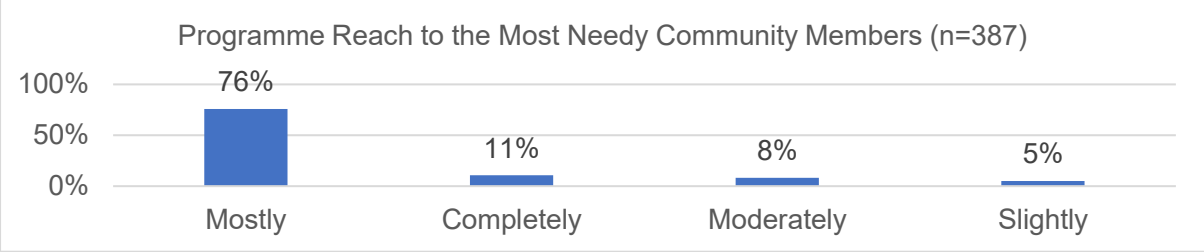
The survey shows that a large majority of respondents felt the programme was well aligned with their community needs, with **76% rating it as "mostly" relevant** and **11% stating it addressed needs "completely."** Only **7% felt it was moderately relevant** and **5% slightly relevant**, indicating that while the intervention was widely seen as addressing key challenges, there remain small pockets where expectations or specific needs may not have been fully met.





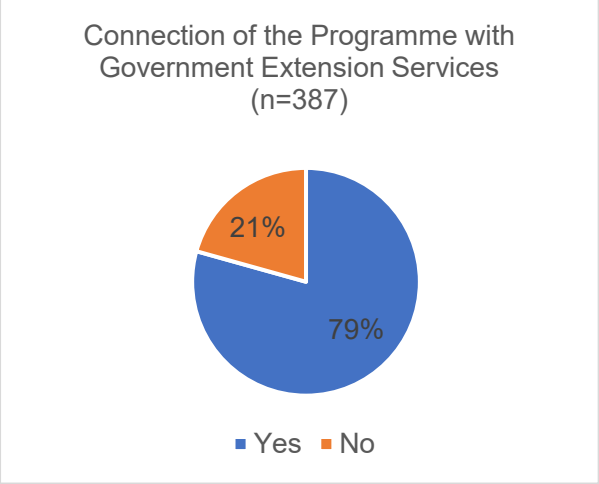
"Earlier we depended on chemicals and monocropping, but the Bio-Village training showed us how to improve soil health with compost and intercropping. These practices felt exactly suited to our needs." - Rabi Paraja, Master Farmer

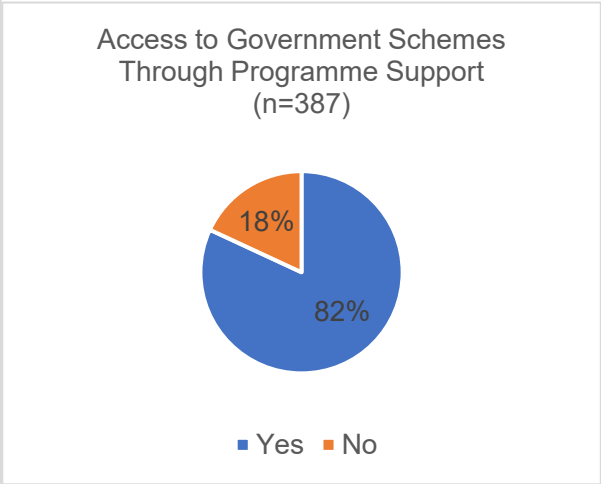
The baseline profile of beneficiaries highlights that **90% of households relied on agriculture as their primary livelihood**, with only small shares engaged in daily wage labour (7%), small business (3%), or livestock rearing (1%). Despite this strong agricultural base, income security was precarious - **60% of households described their income as unstable**, and only **18% reported it as stable or very stable**. These findings underline the vulnerability of farming households in Koraput prior to the programme and the importance of interventions aimed at improving both productivity and income stability.



The relevance of training content was strongly affirmed by beneficiaries, with **76% rating it as "mostly" relevant** and **11% as "completely" relevant** to their existing knowledge and needs. Only a small share found it moderately (8%) or slightly (5%) relevant, indicating that the training was well contextualised and addressed the practical requirements of farming households in Koraput.

3.3 Coherence

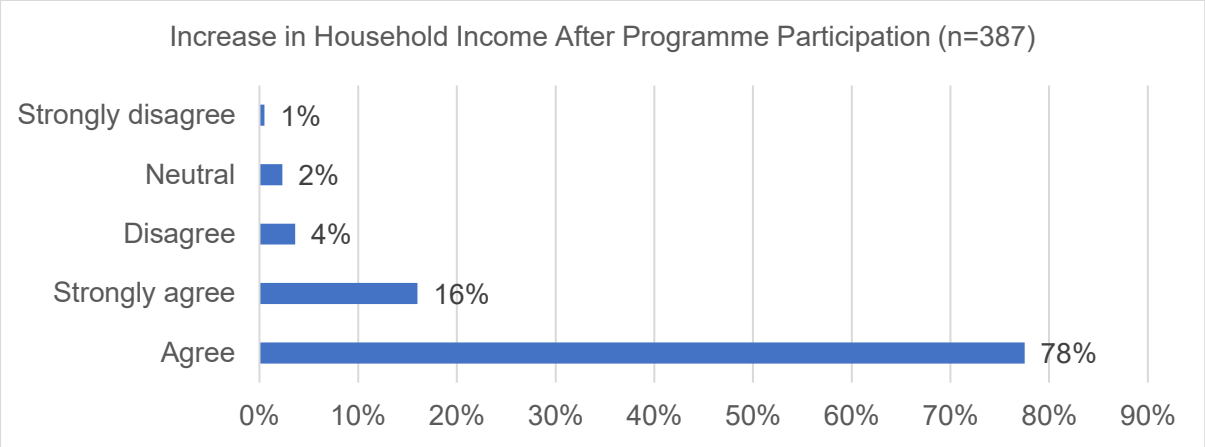


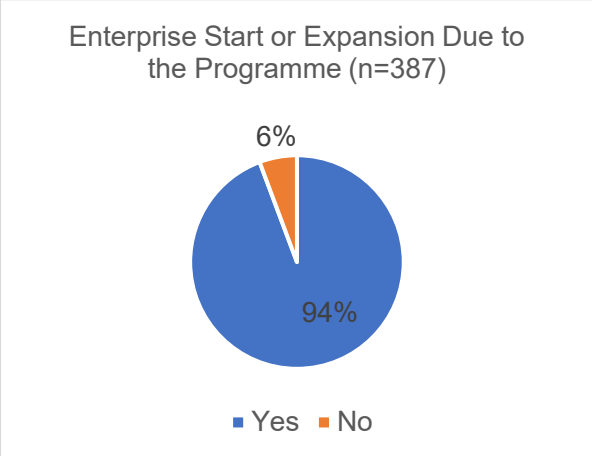


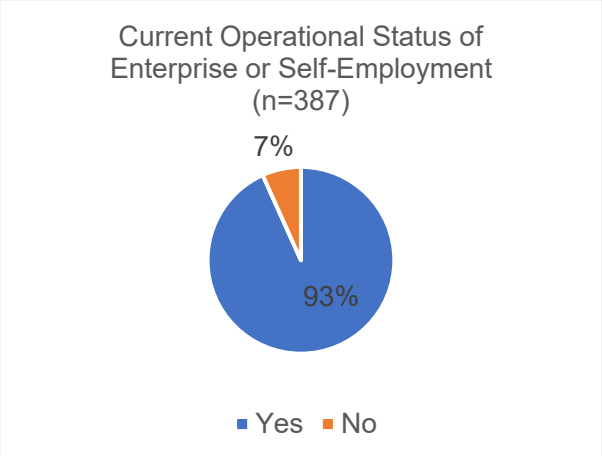
The findings suggest that the Bio-Village programme played an important catalytic role in linking tribal farming households with formal state mechanisms. With **79% of respondents confirming connections to government extension services**, the initiative effectively aligned itself within existing structures, increasing access to technical advice and support that many smallholders would otherwise struggle to reach. Similarly, the fact that **82% of households accessed government schemes with programme support** reflects not only successful facilitation but also the programme's ability to bridge barriers of awareness, documentation, and eligibility that often exclude marginal farmers. Together, these outcomes point to strong convergence, where project interventions did not function in isolation but actively reinforced and complemented government service delivery.

> *"The MSSRF team not only trained us but also helped us link with local markets and procure quality seeds. Their presence connected us to wider systems we could not have reached alone."* - Tularam Paraja

3.4 Effectiveness

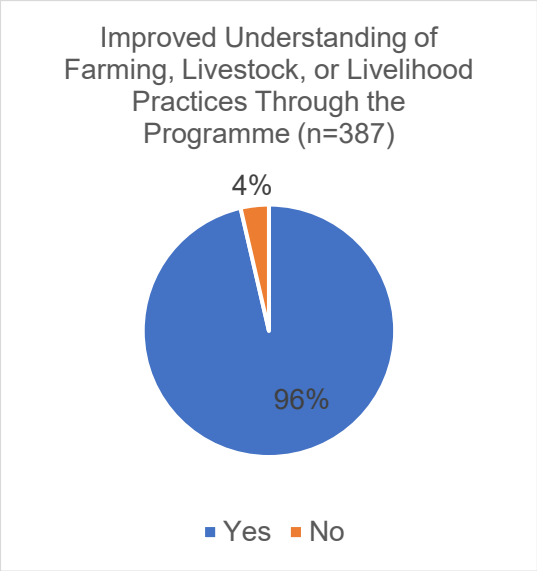


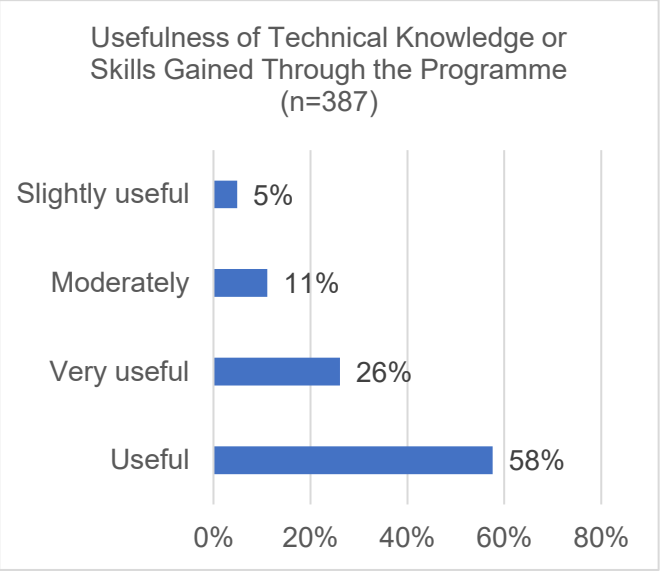


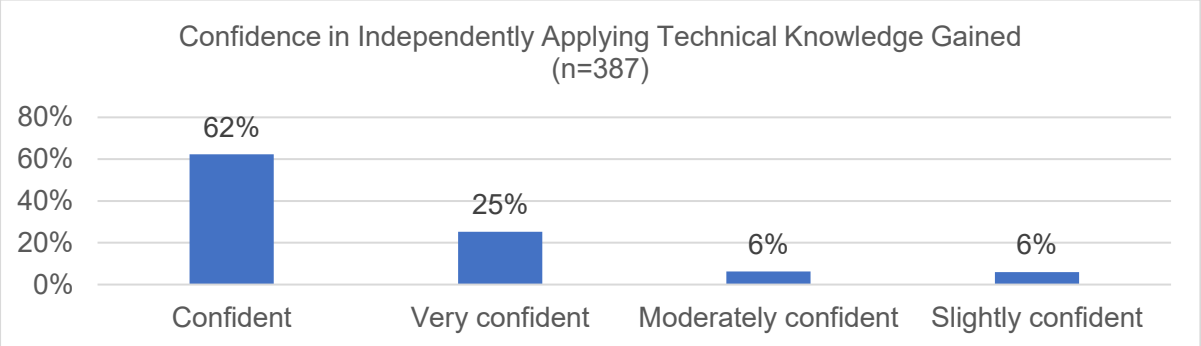


> *"I started making tamarind cakes instead of selling raw fruit, and the income was much better. This change came only because of the programme's demonstrations."* - Mahadev Paraja

The assessment findings indicate a strong economic impact of the Bio-Village programme. A vast majority of households reported income growth, with **78% agreeing and 16% strongly agreeing** that their household income had increased after participation. Alongside this, **94% of respondents were able to start or expand an enterprise through programme support**, and **93% confirmed that these enterprises remain operational**. Taken together, these results highlight both immediate economic gains and promising signs of sustainability, showing that the interventions translated into durable livelihood opportunities rather than short-term improvements.

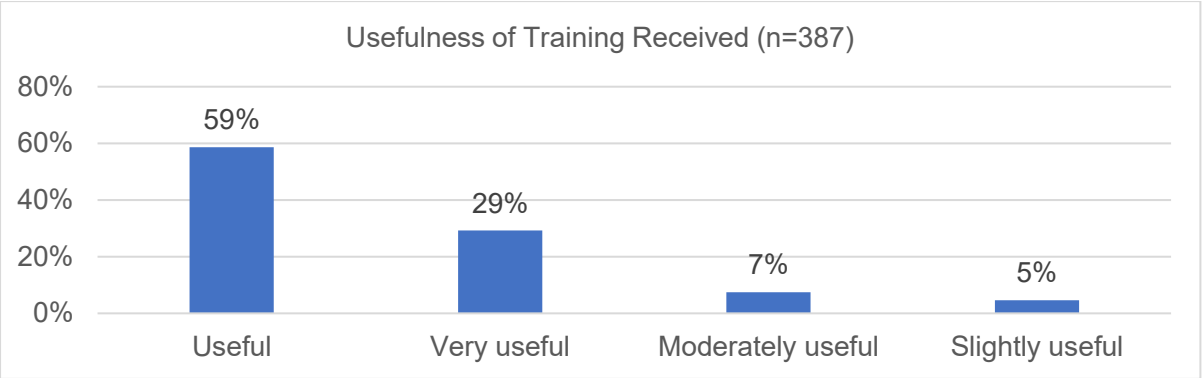


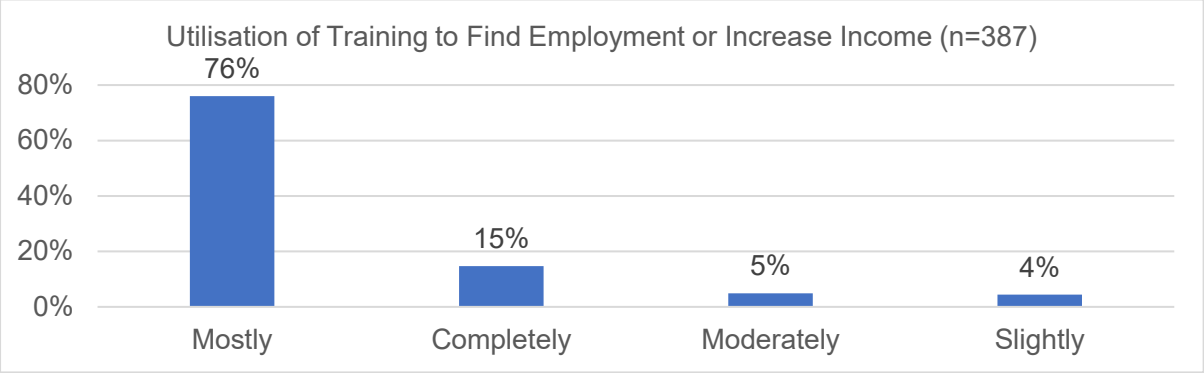




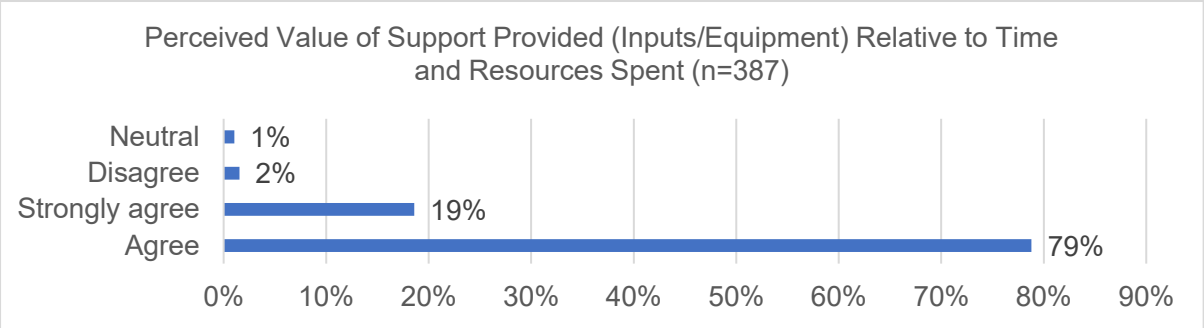
The programme made a substantial contribution to knowledge and skills enhancement, with **96% of respondents reporting improved understanding of farming, livestock, or livelihood practices**. A large share also rated the technical knowledge gained as either **useful (58%) or very useful (26%)**, confirming the practical value of the training provided. Importantly, this translated into confidence for application, with **62% feeling confident and 25% very confident** in independently using the skills learned. These findings suggest that the initiative not only transferred knowledge but also empowered farmers to apply it effectively, strengthening the likelihood of sustained practice adoption.

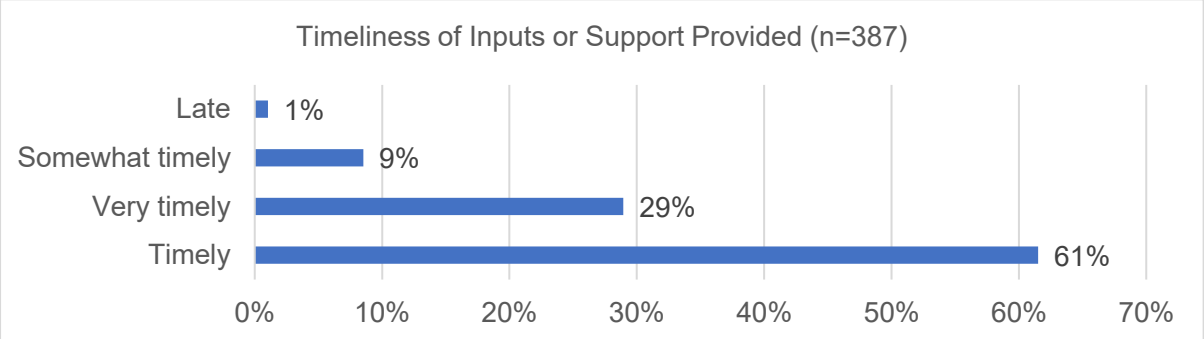
3.5 Efficiency

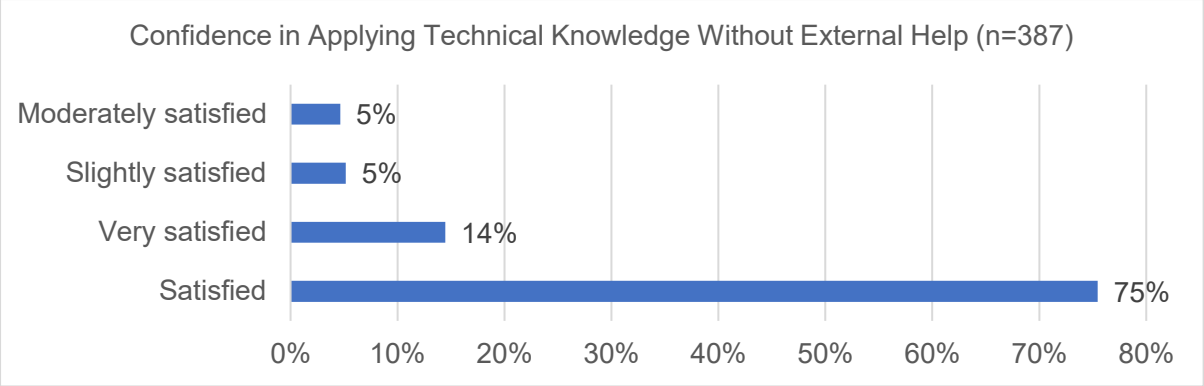




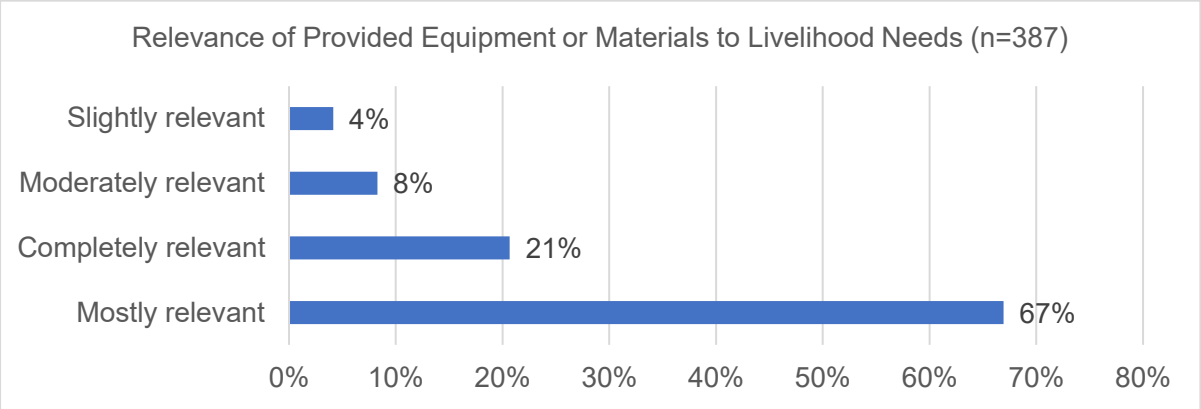
The training component was widely valued, with a combined **88% of respondents rating it as useful or very useful**, underscoring the quality and applicability of the content delivered. This translated into tangible outcomes, as **76% reported they were mostly able to use the training to improve income or find employment**, and a further **15% stated they could do so completely**. These results suggest that the training not only enhanced knowledge but also directly supported economic improvements for beneficiary households.

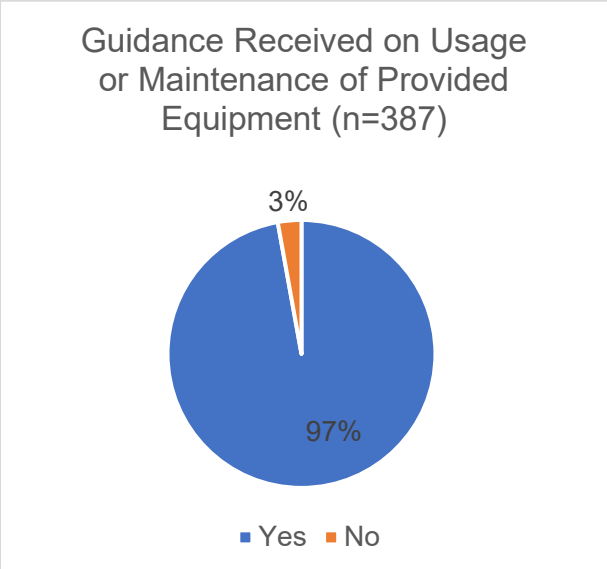


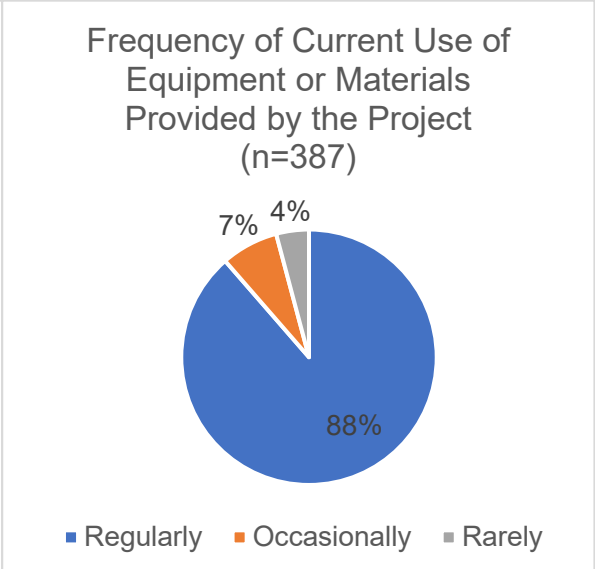




The findings indicate that the programme was successful not just in delivering resources but in ensuring they were valued and usable by beneficiaries. With **79% agreeing and 19% strongly agreeing** that inputs and equipment were worth the investment, it is clear that the support directly met household priorities. The fact that **90% of respondents found the delivery of inputs timely or very timely** further suggests that interventions were well-coordinated with agricultural cycles, reducing the risk of wasted resources. Most importantly, the outcome translated into confidence and independence: nearly **nine in ten respondents reported being satisfied or very satisfied** in applying technical knowledge without external help. This demonstrates that the programme fostered a sense of ownership and capacity among farmers, pointing towards sustained adoption of practices even after external support phases out.



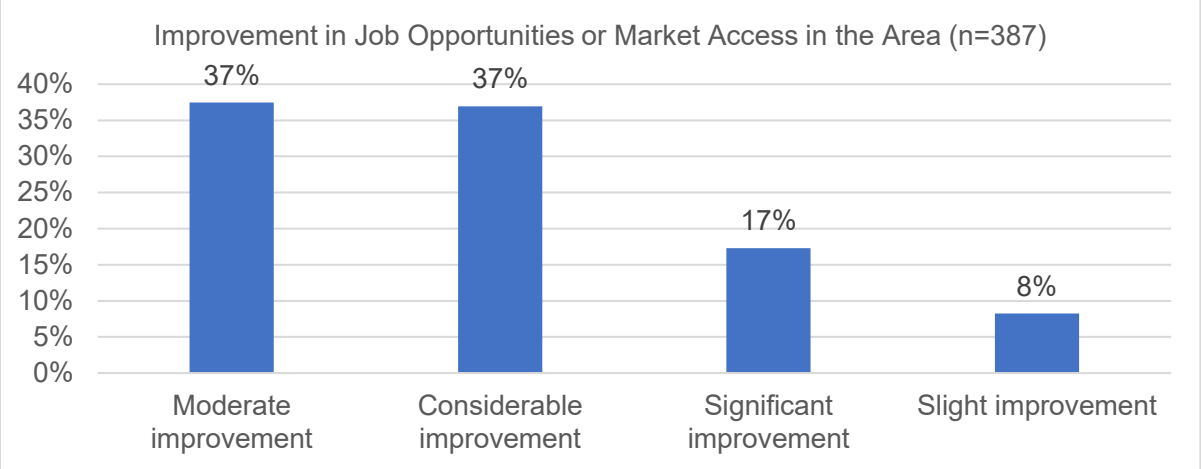




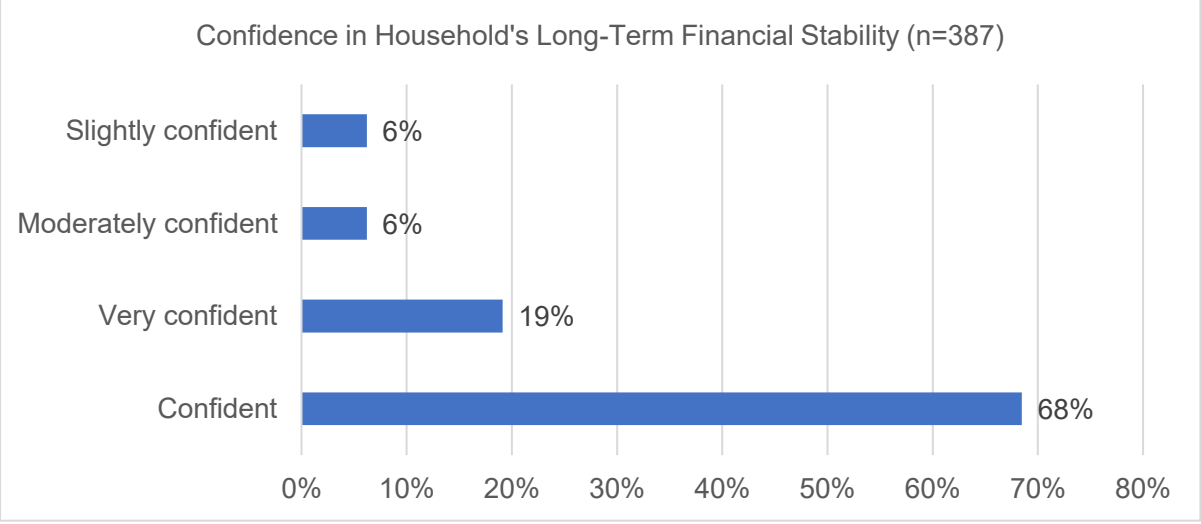
The support provided in the form of equipment and materials was highly relevant to household needs, with **67% finding it mostly relevant and 21% completely relevant**, reflecting good alignment of inputs with local livelihoods. Guidance on usage was almost universal, as **97% confirmed receiving instructions**, which likely contributed to the high levels of uptake. Indeed, **88% of respondents reported using the equipment regularly**, showing that the resources were not only distributed but effectively integrated into daily livelihood practices. These findings point to strong design and delivery, where inputs were both appropriate and accompanied by adequate training, ensuring their continued use and long-term impact.

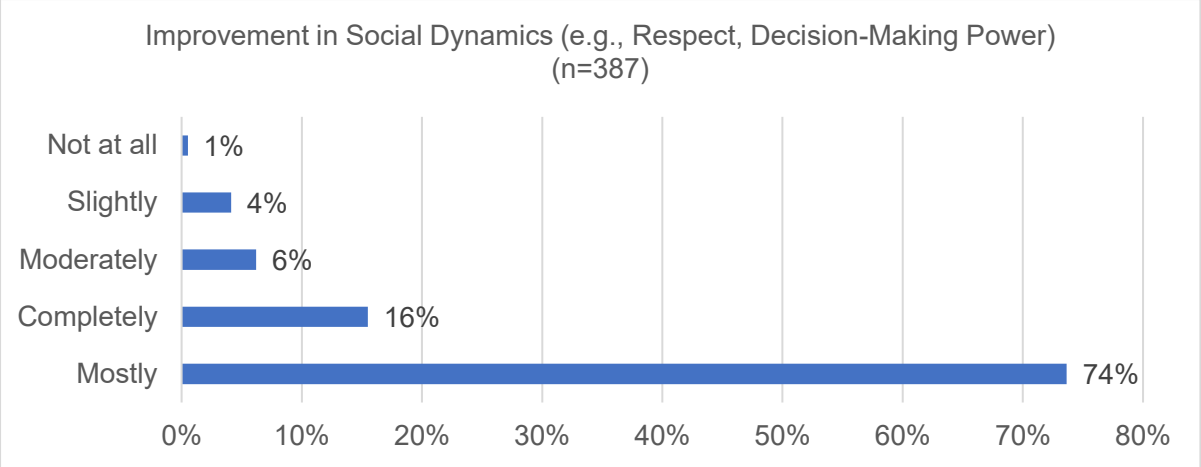
3.6 Impact

The Bio-Village programme was designed to go beyond improving agricultural practices by enabling communities to access jobs and markets more effectively. By building economic opportunities and fostering stronger social ties, it aimed to enhance both household resilience and collective empowerment.

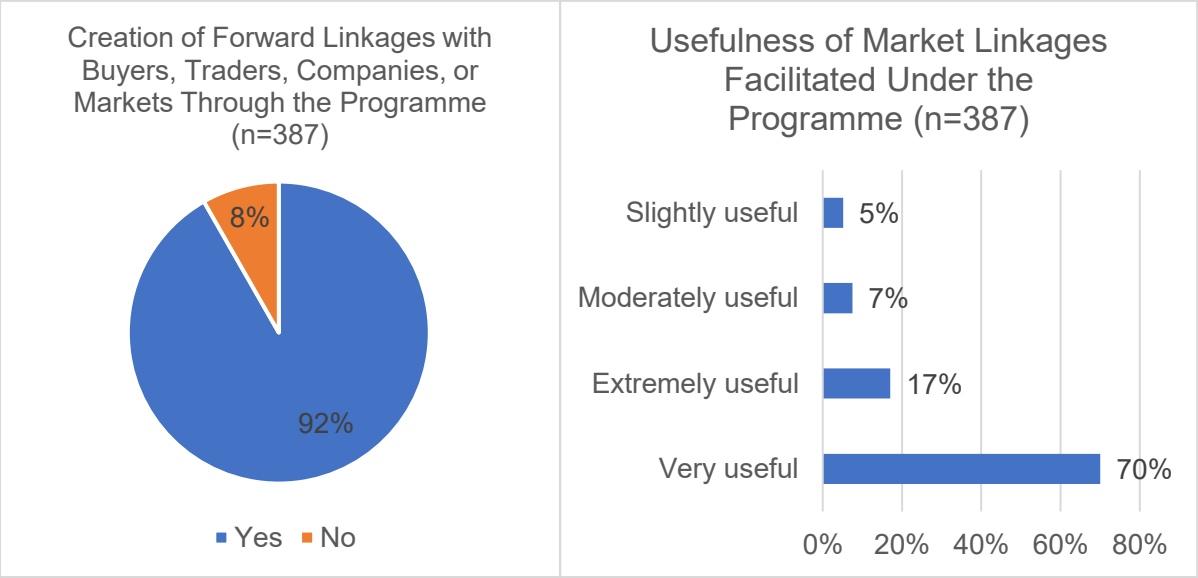


"The soil in my field now holds more moisture, and my millet and paddy yields have increased. Our family also eats more diverse food from our own fields." - Gourichandra Paraja

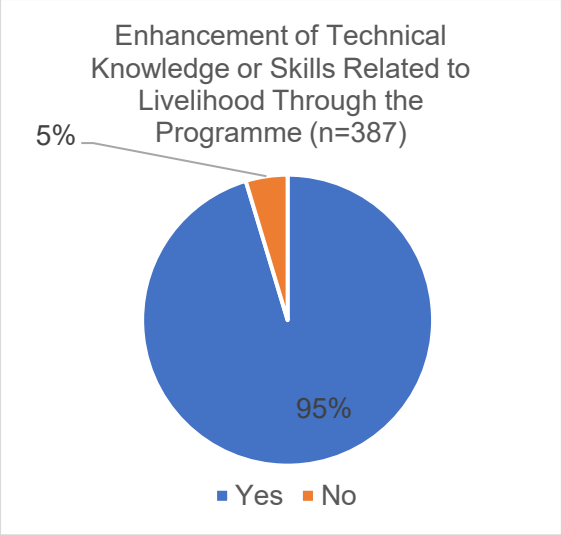


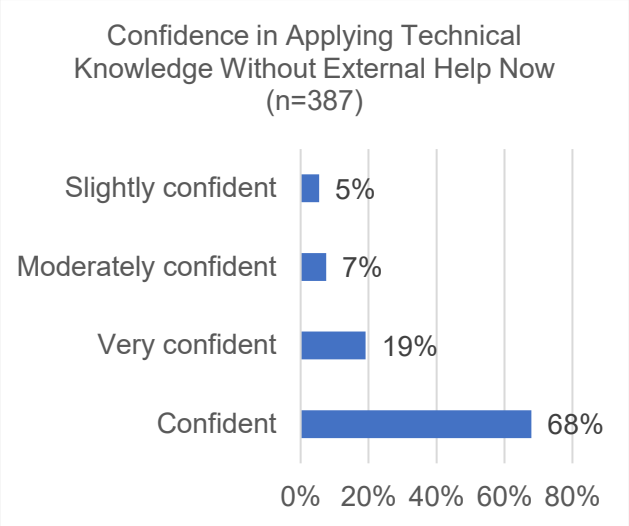


The programme has contributed positively to both economic and social dimensions of community life. On the economic front, **37% of respondents reported considerable improvement and another 37% moderate improvement in access to jobs or markets**, while only a small proportion noted slight changes. This has been accompanied by greater household confidence, with **68% feeling confident and 19% very confident** about their long-term financial stability. Socially, the initiative has also shifted intra-community dynamics: **74% of respondents stated that social dynamics such as respect and decision-making power had mostly improved**, with a further **16% noting complete improvement**. Taken together, these results indicate that the Bio-Village model is not only strengthening livelihoods but also enhancing social capital and empowerment within beneficiary communities.



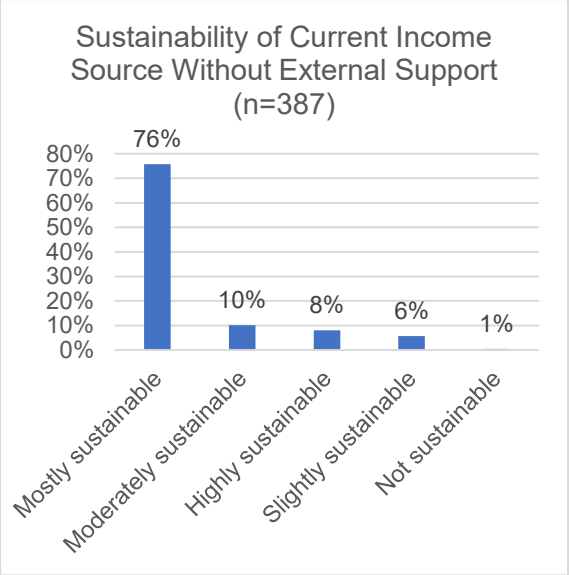
The programme was highly effective in facilitating market access, with **92% of respondents confirming the creation of forward linkages to buyers, traders, companies, or markets**. More importantly, these linkages were not superficial but valued: **70% rated them as very useful and 17% as extremely useful**, while only a small minority found them slightly or moderately useful. This indicates that beyond strengthening production, the Bio-Village initiative succeeded in connecting farmers to markets in ways that were perceived as practical and impactful for their livelihoods.

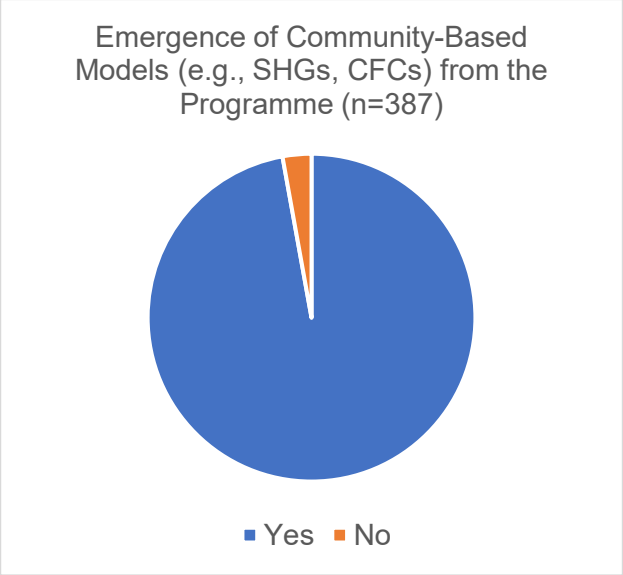




The programme had a strong impact on knowledge-building, with **95% of respondents reporting that it enhanced their technical skills related to livelihoods**. This translated into confidence in independent application, where **68% felt confident and 19% very confident** about using the knowledge without external help. These results suggest that the intervention not only transferred skills but also built the self-reliance needed for long-term adoption of improved practices.

3.7 Sustainability

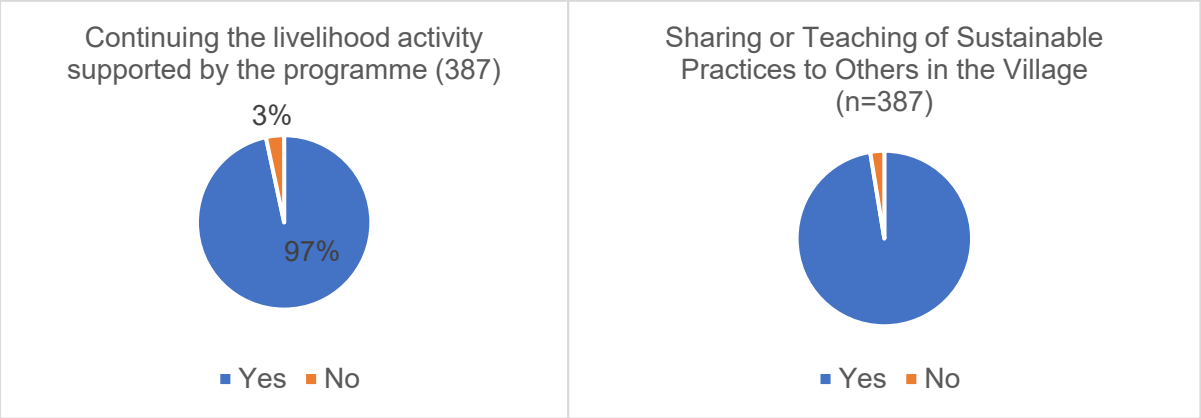




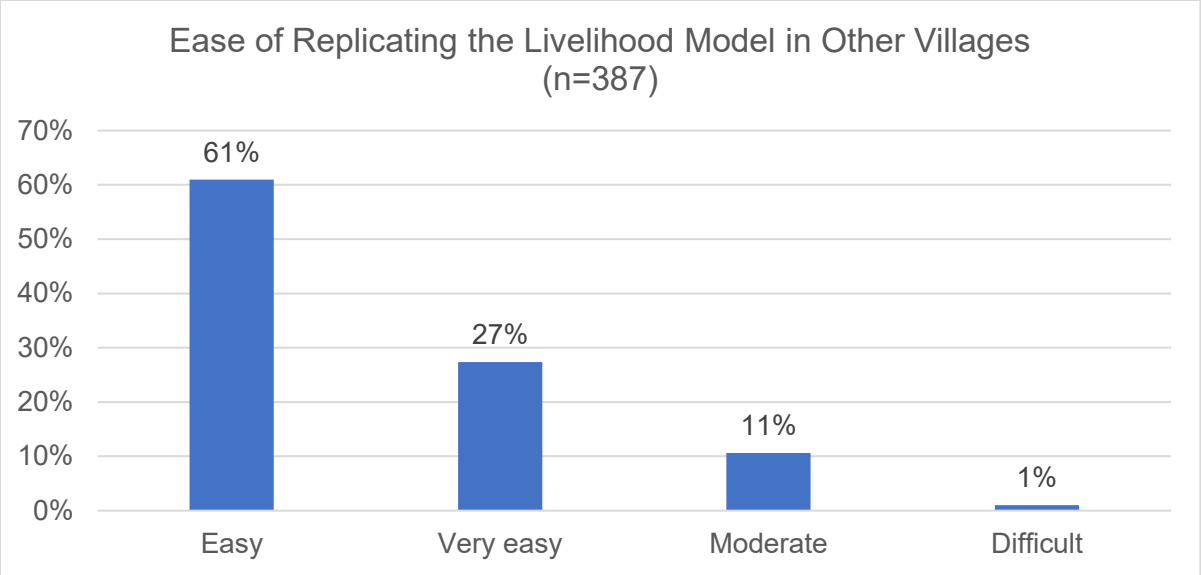
The programme shows strong signs of sustainability at both household and community levels. A large majority of respondents described their current income sources as **mostly (76%) or highly sustainable (8%) without external support**, suggesting that the interventions are creating lasting livelihood improvements. At the same time, **97% reported the emergence of community-based models such as SHGs and CFCs**, underscoring how institutional

mechanisms have been strengthened to anchor these gains collectively. Together, these findings point to resilience being built both within households and through local institutions, enhancing the likelihood of long-term impact.

> *"I will continue composting and intercropping even after the project ends, but it would help if community groups or SHGs keep reminding and supporting us."* – Tula Paraja



The programme has demonstrated strong prospects for continuity and diffusion of practices. **97% of respondents plan to continue the livelihood activities supported by the initiative**, suggesting high levels of ownership and sustainability at the household level. Equally significant, **97% also reported sharing or teaching these practices to others in their villages**, pointing to a strong multiplier effect where knowledge and methods are spreading organically within the community. This combination of sustained adoption and peer-to-peer transfer indicates that the Bio-Village model has effectively embedded itself in local systems, enhancing both reach and long-term resilience.



The replicability of the Bio-Village model is viewed very positively by beneficiaries, with **61% considering it easy and 27% very easy to adopt in other villages**. Only a small share rated replication as moderate (11%) or difficult (1%), suggesting that the approach is not only contextually relevant but also practical and adaptable. This perception underscores the

model's scalability and potential to benefit a wider set of communities beyond the current intervention areas.

3.8 Impact Stories

Case Study 1

Before this programme, I relied on chemical fertilisers and followed monocropping practices that were costly and left my soil weaker each year. With the trainings in my village, I learned to adopt intercropping and use organic practices such as Jeevamrut and Neemastra. Slowly, I saw changes—my soil began to hold more moisture, and the crops looked healthier. I also reduced my expenses on chemical inputs, which gave me some savings.

Still, some practices like soil testing were difficult for me to continue without regular guidance. I feel confident in composting and intercropping but know that for certain technical steps I would need follow-up support. Even so, I now share what I have learned with other farmers in my village, explaining how to prepare bio-fertilisers and compost. It feels good to see others try out these methods.

– **Rabi Paraja, Farmer**

Case Study 2

I had always sold tamarind as a raw product, and the money I received was very low. Through the Bio-Village project, I was introduced to tamarind value addition. With some training, I began preparing tamarind cakes. This small change brought me better income compared to earlier. Along with this, I started vermicomposting and using natural pest control. These practices reduced my dependence on chemicals, and I noticed savings.

Even though these changes helped, I sometimes felt unsure after doing soil testing. I could not confidently take decisions on fertiliser use from the results, and I felt I needed more technical help. I also think that the market linkages for tamarind cakes should be stronger, so that I can expand further. The project has given me hope, but for new products especially, we require more consistent support.

– **Mahadev Paraja, Farmer**

Case Study 3

In earlier years, my fields gave low yields because the soil would dry quickly, and I planted the same crop every season. Through this project, I started composting and using organic manure, which made the soil richer and able to retain water. I also began intercropping millet

and paddy with other crops. This gave me not just better yields but also more food for my family to eat. We are now less dependent on a single crop, which makes me feel more secure.

The challenge has been in preparing some bio-inputs that require regular effort and consistency. At times, I found it difficult to keep up without encouragement from the field team. But even with these challenges, the changes in my field are clear, and I feel more motivated to continue.

– **Gourichandra Paraja, Farmer**

Case Study 4

The demonstrations in my village made the biggest difference to me. Instead of only being told what to do, I was shown how to prepare compost pits, treat seeds, and use neem-based pest control step by step. This made it possible for me to try on my own. Over time, I noticed that my crops grew better and I had fewer losses.

The MSSRF team visited regularly and supported us with good quality seeds and even in connecting to local markets. This gave me confidence that the project was not just about training but also about helping us sell what we produced. One difficulty was that I still found soil testing hard to follow on my own, and without someone to guide me, I hesitated to change my practices based on the test results. But overall, I now see farming in a new way, where I can combine old knowledge with new sustainable practices.

– **Tularam Paraja, Farmer**

Case Study 5

Through the Bio-Village programme, I started adopting composting, intercropping, and bio-fertiliser preparation. These methods helped improve my soil and reduced the need for chemicals. An important change was that my wife became more involved—she helped with compost preparation and tamarind processing. Her involvement not only added to our household income but also gave her confidence to participate more in farming decisions.

For me, the support from the MSSRF team was very important. They came to our village regularly and showed us how to apply new practices. While I plan to continue these methods, I also feel that without continued encouragement from groups like SHGs or community organisations, it might be difficult to maintain all of them over time. The project has opened our eyes to better ways of farming, but for it to last, the community needs to keep pushing each other to stay consistent.

– **Tula Paraja, Farmer**

Chapter 4 :

Recommendations

The impact assessment of the *Every Village a Bio-Village* initiative reveals strong evidence of relevance, effectiveness, and community ownership. At the same time, findings highlight gaps and opportunities that, if addressed, can consolidate the sustainability of outcomes and strengthen the model for scale-up. Based on field data, beneficiary feedback, and programme learnings, the following recommendations are proposed:

4.1 Strengthening Soil Testing and Technical Advisory Services

While soil testing was introduced, many farmers struggled to interpret results and translate them into practice. This limited the potential of scientific crop and nutrient management. Going forward, soil testing must be **institutionalised with regular cycles**, supported by **block-level farmer facilitators** who can explain results in simple terms and provide ongoing advice. Developing **easy-to-read soil health cards** in the local language with pictorial guidance can also increase farmer confidence and uptake.

4.2 Consolidating Market Linkages for Value-Added Products

Tamarind value addition emerged as a clear success, generating better incomes compared to raw sales. However, farmers expressed concern about limited market access and weak linkages for new products. The programme should focus on **building stable buyer networks**, potentially through partnerships with local FPOs, traders, and micro-enterprises. Training in **basic business planning and collective marketing** for SHGs can further strengthen the commercial viability of products like tamarind cakes, ensuring that these do not remain small-scale, isolated activities.

4.3 Sustained Support for Bio-Inputs and Composting

Adoption of bio-inputs such as Jeevamrut, Amrutjal, and Neemastra was high, but many farmers noted that preparation is labour-intensive and requires consistency. To sustain adoption, the programme should explore **community-level bio-input production units** managed by SHGs or farmer groups. Such units can reduce the individual burden while ensuring regular availability. Provision of small equipment (like shredders or mixing tanks) at the community level could further ease preparation.

4.4 Embedding Women's Roles in Farming and Enterprise

The programme created new spaces for women, particularly in tamarind processing and composting. However, these contributions risk being undervalued if not institutionalised. Future phases should include **dedicated women's farmer groups** or SHG federations focused on value addition, processing, and collective marketing. Providing **gender-sensitive training modules** and leadership opportunities will not only enhance women's participation but also improve household decision-making power and economic outcomes.

4.5 Scaling Farmer-to-Farmer Learning Systems

Farmers widely shared new practices with peers in their own and neighbouring villages, creating informal diffusion networks. These should be formalised into **structured farmer field schools** or **"lead farmer" demonstration plots**, where trained farmers mentor others seasonally. Recognising and incentivising master farmers like Rabi Paraja and Mahadev Paraja as local champions can help scale practices organically, without overdependence on external teams.

4.6 Strengthening Institutional Sustainability through Community-Based Models

The emergence of SHGs and community-level federations under the programme is a promising foundation for sustainability. To make them more effective, these groups should be trained to **take over gradual ownership of programme functions** such as input management, seed procurement, and linkage to government schemes. Integrating these groups into block-level platforms will also give them stronger bargaining power with markets and state agencies.

4.7 Longer Engagement and Phased Handover

Many farmers felt the project duration was too short to fully embed new practices into habits. Short-cycle projects risk reverting back to chemical dependence or monocropping once facilitation ends. A **longer engagement model** is needed, where the first phase focuses on adoption, the second on consolidation, and the final on handover to local institutions. This phased approach will ensure that behaviour change becomes permanent.

4.8 Building a Replicable and Scalable Model

Beneficiaries overwhelmingly felt the model could be easily replicated in other villages. However, scaling should not be "one-size-fits-all." It should be based on **careful adaptation to local crops, soils, and community structures.** Documentation of best practices from Koraput - such as tamarind value addition, millet intensification, and women-led composting, can serve as practical modules for replication.

Conclusion

The Bio-Village initiative has proven to be both relevant and impactful, improving incomes, soil health, and community confidence. However, its sustainability will depend on how effectively the gaps identified are addressed, particularly around technical handholding, market linkages, and institutional ownership. By focusing on **deepening rather than just broadening** its interventions, the programme can evolve from being a project-driven initiative to a **community-owned model of sustainable rural livelihoods**.

Chapter 5 :

Benchmarking

5.1 Benchmarking Objective

To situate the *Every Village a Bio-Village* initiative within the wider landscape of sustainable agriculture and rural development programmes, a benchmarking exercise was undertaken. The table below compares the Bio-Village project with other notable interventions in Odisha and across India, including both government-supported natural farming initiatives and CSR-led projects. This comparative lens highlights similarities in approach, scale, and objectives, while also underlining the unique features and contributions of the Bio-Village model.

5.2 Bio-Village vs Other Comparable Projects

Parameter	Bio-Village Project	Natural Farming Transition in Odisha Tribal Landscape (WASSAN & Govt Odisha)	NABADISHA (HDFC-HRDP CSR Project, Odisha)
Funder/Sponsor	BGIL via MSSRF	Govt. of Odisha (ST&SC / Minorities & Backward Classes Welfare Department) + WASSAN	HDFC Bank CSR Fund via Agragamee under HRDP Project
Implementation Period	2022-23 (most recent evaluation; some activities ongoing)	Recently launched pilot and transition phases; current modules ongoing (exact start ~2023-2024)	42 months project from October 2021 to March 2025
Geography Covered/Villages	20 villages in Boipariguda & Kundra blocks, Koraput district, Odisha	Tribal patches in Odisha (locations include Sundergarh, Mayurbhanj, Ganjam) with pilot natural farming patches and Bio-Input Resource Centres (BRCs) in 3 locations.	15 villages across Nabarangpur & Nandahandi blocks, Odisha; 3,374 households in 15 villages, ~14,487 population.
Target Beneficiaries/Households	Tribal, small/marginal farmers; total	Tribal farmers; pilot patches & bio-input centres	~3,374 households; focused on tribal

	survey universe ~387 households; includes women, SHGs, smallholders (land categories)	aim to reach local tribal communities in multiple districts; scale data ongoing.	and marginalized households, women, youth; includes marginal, small, landless farmers.
Key Components/Activities	Demonstration plots (SMI, IPM, INM), nutrition gardens, value addition (tamarind), women's tools, input distribution, SHGs / CFCs & market/scheme linkages	Natural farming practices & zero-chemical input; guidelines & training, bio-input production via BRCs; nutrition / mixed cropping models; collaborating NGOs and government departments.	Integrated farming systems; promotion of sustainable agricultural practices; training & capacity building; youth & women eco-leaders; micro-enterprises; drudgery reduction; emphasis on nutrition sensitivity.
CSR Component (or non-Government)	Corporate CSR lead by BGIL; MSSRF implementing partner	Primarily Government + NGO partner; not labelled CSR per se	Yes, CSR project: HDFC Bank CSR funding, under HRDP, via NGO partner Agragamee.
Scale/Intensity	Medium scale (20 villages, moderate number of households, hands-on support)	Smaller pilots but with intent to scale; bio-input centres set up; mixed cropping in pilot patches; spreads over multiple districts.	Larger population coverage (3,374 households); covers ~15 villages; goes beyond farming into nutrition, youth/women groups, eco-leadership.
Market Linkage & Value-Addition Focus	Value addition in tamarind; linkages to local markets; scheme & buyer linkages integral.	Some market linkage for bio-inputs; focus more on reducing chemical dependencies and capacity building;	Emphasis on income generation through micro-enterprises, youth / women engagement; marketing of

		value addition less prominently reported.	agricultural produce; likely some value added products.
Sustainability & Institutional Strengthening	Strong SHG/CFC engagement; high beneficiary intention to continue practices; peer sharing (97% sharing); significant plans for long term replication.	Establishment of Bio-Input Resource Centres; collaboration with government departments; developing guidelines and institutional supports.	Emphasis on youth and women eco-leaders; building social capital; institutionalizing capacity through SHGs; eco-village models.
Challenges Observed	Needs better soil testing interpretation; continuous support needed; market access for value-added products; geographic / climatic access during monsoon; some bio-input preparation effort high.	Challenges include pilot scale, logistical constraints, building awareness among tribal farmers, maintaining input supply in remote areas.	Challenges include scale, ensuring consistent quality, training follow-ups, ensuring youth engagement yields income, drudgery reduction tools maintenance.

Annexures

Evaluation Framework and Indicators

The evaluation was designed as a learning-oriented exercise to assess both the effectiveness and relevance of the Bio-Village initiative in its current phase. It helped generate insights that support adaptive programme management and inform future replication or scale-up.

The study focused on understanding the perceived and early-stage impacts from the perspective of key stakeholders, including farmers, SHG members, village leaders, and local institutions. It also explored the real-world challenges faced by these stakeholders in implementing sustainable farming and institutional models.

The assessment was guided by the OECD-DAC evaluation framework, with emphasis on the following six core parameters: Relevance, Coherence, Effectiveness, Efficiency, Impact, and Sustainability. the OECD-DAC evaluation framework, focusing on:

This evaluation approach was implemented through a structured primary research process, using tools tailored for different stakeholder groups. In addition to field-level data collection as outlined in the sampling strategy, the team reviewed documents and records provided by the implementation partner to assess progress against indicators defined in the Theory of Change.

Where possible, findings were triangulated by comparing primary and secondary data sources in the following ways:

- Comparing programme targets (e.g., from MoU or implementation plans) with actual progress documented through secondary records.
- Aligning insights from field surveys with reported achievements by the implementing agency to validate outcome-level results.

Theory of Change

Activities	Outputs	Outcomes	Impact
Village selection and baseline survey	**20 villages** across Boipariguda and Kundra blocks identified; baseline data collected from **387 households**	Programme contextualised to local agro-ecological and socio-economic realities; baseline established for tracking change	Targeting of tribal and smallholder households ensured, with interventions mapped to community-specific needs
On-farm demonstrations	**40+ demonstration plots** established on paddy, millet, and horticulture using SMI, INM, IPM and organic composting	Farmers directly exposed to sustainable practices; early adopters identified as local role models	Shift toward climate-resilient farming; preservation of indigenous agrobiodiversity
Training and capacity building	**500+ farmers** trained on soil health, bio-input preparation, composting, pest management, and tamarind value addition	Improved knowledge and confidence to apply ecological practices; peer learning initiated	Empowered rural workforce; stronger decision-making capacity at the farm level
Input and equipment distribution	Vermicompost, enriched FYM, seed kits, and **women-friendly tools** (weeders, sprayers, processing units) distributed to target households	Inputs applied in cultivation; drudgery reduced for women; bio-input use scaled across households	Increased productivity, reduced input costs, and enhanced women's participation in farming
Nutrition gardens and IFS models	**300+ nutrition/backyard gardens** and integrated farming systems promoted across households	Improved access to vegetables, pulses, and fruits; reduced household food expenditure	Enhanced household dietary diversity and nutrition security
Enterprise promotion and value addition	Tamarind processing (e.g., tamarind cakes) piloted with **100+ households**; aquaculture promoted through Master Fishery Farmers	New livelihood streams adopted; women engaged in tamarind processing and marketing	Diversified and increased household incomes; local micro-enterprise development initiated
SHG and CFC strengthening	**30+ SHGs** reactivated; Cluster Facilitation Centres (CFCs) supported with training and resources	Collective agency strengthened; SHGs mobilised for savings, input management, and marketing	Women-led institutions foster resilience and community sustainability

Market and scheme linkages	Farmers linked to **government schemes, extension services, and local buyers**; access to irrigation, credit, and subsidies facilitated	Increased uptake of entitlements; forward market linkages created for produce and tamarind products	Improved household incomes, reduced exclusion, and better financial inclusion
Gender inclusion activities	Women engaged in trainings, tool use, and processing activities; **40% of respondents female** in programme outreach	Greater female participation in farming and enterprise; improved household decision-making	Progress toward gender equity in livelihoods and community leadership
Knowledge-sharing and peer learning	Master Farmers and trained participants regularly shared practices with peers in their villages and neighbouring hamlets	Informal farmer-to-farmer learning systems strengthened	High replication potential; practices spreading organically beyond target households
Monitoring and documentation	Field-level records maintained; baseline and endline comparisons established; learning documented	Continuous validation of productivity, income, and nutrition changes	Data-driven planning for replication across additional villages and blocks

Sampling Strategy

The quantitative survey will cover farming households across 20 selected villages. A stratified random sampling method will be used to ensure representation across key strata including block (Kundra/Boipariguda), caste category, and landholding size.

Given the universe of 1,015 households, a sample size of 385 has been determined based on a 95% confidence level and a margin of error of approximately 5%. This sample will provide statistically valid insights while maintaining operational feasibility.

Key stakeholders relevant to the assessment have been identified, along with the specific data collection methods that will be used to engage with each group.

Quantitative Data Collection				
Stakeholder	**Location**	**Universe**	**Sample Size**	**Rationale**
Local Community	Koraput, Odisha	1015	385	Sample of 365 calculated at 95% Confidence Interval and 5% Margin of Error.

Qualitative Data Collection				
Stakeholder	**Location**	**Data Collection Tools**	**No. of Interactions**	**Mode of Interaction**
Master Farmers	Koraput, Odisha	KII	11	Physical
Nutrition Garden beneficiaries		KII	4	Physical
Trainers		KII	3	Physical
Implementation agency Team		KII	2	Physical/Virtual
BGIL CSR Team		KII	1	Physical/Virtual
Total			**21**	

Challenges in Data Collection

1. There were instances of unavailability of certain stakeholders for qualitative interactions. As a result, the planned sample mix had to be adjusted, and numbers were compensated through additional farmer interviews.
2. The survey coincided with the peak monsoon season, during which some villages became physically inaccessible. On MSSRF's advice, the team narrowed the focus to villages that were reachable, leading to slight deviations from the original sample distribution.
3. Non-responsiveness was observed in a small section of respondents, particularly in questions relating to income and productivity. While most households engaged openly, some hesitancy remained in sharing financial details.
4. Scheduling focus group discussions proved challenging in some villages, as agricultural cycles (e.g., transplanting and weeding periods) coincided with the fieldwork timeline. As a result, group interactions were fewer in number than initially planned.

Ethical Considerations

- Team members ensured ethical conduct during virtual data collection by obtaining participant consent, providing information about the study's purpose, and outlining data collection outcomes.
- All team members were gender-sensitised before data collection, ensuring a safe environment and privacy for respondents.
- Respondents were assured of the confidentiality of their personal information, with a commitment that the collected data would be used exclusively for research purposes.