



industree

Third Party
Assessment of
Industree
Project on NTFP
Value Chain
Development

PHILANTHROPY
Cartier

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Abbreviations

- NTFP – Non-Timber Forest Produce
- MEL – Micro Enterprise Leader
- MBTL – Mutual Benefit Trust Leader
- MBT – Mutual Benefit Trust
- BEC – Business Excellence Centre
- SGS – SGS India Private Limited



Executive Summary

This report documents the outcomes and early impacts of the IndusTree Foundation's NTFP Value Chain Development Project in Odisha, supported by Cartier Philanthropy over a three-year implementation period. The project aimed to socially and economically empower 800 marginalised tribal and rural women by establishing women-owned sal/siali biodegradable leaf tableware enterprises, while simultaneously strengthening forest-based livelihoods and promoting environmentally sustainable alternatives to single-use plastics.

The project activities focused on organising women into self-owned producer groups to aggregate sal/siali leaves and produce stitched leaf plates.

As a core value chain development strategy, the project focused on upgrading the sal/siali value chain by establishing women-owned and operated enterprises, along with associated stitching units, to produce high-quality, market-compliant sal/siali leaf plates for institutional, urban, and export markets.

A professional management and design team placed under the project supported the key activities of enterprise formation, capacity building, product innovation, quality assurance, and compliance. The project, with the help of a professional team, connected sal/siali enterprises with high-end buyers for sal/siali leaf plates, thereby ensuring better prices and sustainable livelihoods for project participants.



Topline Findings

This assessment evaluated the project's performance towards its targeted outcomes. The project lifecycle of three years could be considered as relatively short for a complex socio-economic development project having largely indirect pathways of impact. The exercise has therefore focused on identifying early evidence and the directionality of changes in the

project's medium and long-term impact areas. In terms of the targeted group, the assessment has considered women producers in the sal/siali value chain, their households and their producer-owned enterprises as the focal participants under the project. The project's performance in the most important impact areas is summarised below.



Income Improvement

The intervention resulted in clear and measurable improvements in both the quantum and stability of income for women participants. Leaf collectors reported monthly earnings of INR 3,000–5,000 during peak seasons and INR 2,000–3,000 during lean periods, replacing earlier irregular and volatile income streams. For many production workers, the project marked their first experience of predictable, formal earnings, significantly reducing income uncertainty and distress-driven livelihood choices.



Employment Generation

The project generated assured, continuous, and locally anchored employment, particularly through stitching and leaf plate manufacturing units. Employment opportunities were especially transformative in geographies where such work previously did not exist, reducing the need for seasonal migration. Extremely low attrition rates and strong local interest in jobs available with the enterprise indicate strong community acceptance and a high perceived employment quality.



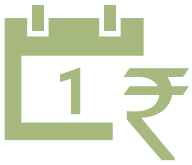
Skill Development

Substantial skill enhancement was observed across both leaf collectors and production workers(women producers). Women with no prior experience acquired transferrable technical skills (stitching, grading, pressing, quality control, packaging), and gained useful exposure to end-to-end value chain processes. These skills improved productivity, reduced wastage, and strengthened confidence in accessing higher-value roles within the enterprise.



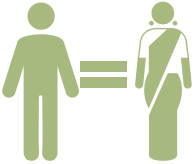
Usage of Increased Income and Financial Empowerment

Increased incomes were productively utilised for children's education, household consumption smoothing, asset creation (livestock, utensils), savings, and reduced reliance on informal debt. Women associated with the enterprise demonstrated considerable awareness of financial instruments for savings and social protection (insurance) and reported their increased role in household financial decision-making, reflecting financial empowerment.



Wage Assurance and Fair Prices

The intervention introduced minimum wage assurance for 'production workers (Women producers)¹ and transparent, market-linked fair prices for leaf collectors, addressing long-standing buyer dominance and price volatility in the NTFP value chain. These mechanisms ensured fairness, predictability, and dignity of work, and set local benchmarks which positively influenced the behaviour of other market participants.



Gender Mainstreaming

Women were positioned not only as producers but as owners, board members, and decision-makers within the producer-owned enterprise. Project participants reported greater say in household decision-making, enhanced mobility, and higher aspirations for their children.



Social Standing

Regular employment, improved incomes, and visible changes in living standards translated into enhanced social recognition, particularly for women associated with the stitching and leaf plate manufacturing units. Activities related to sal/siali leaf collections and plate-making, which were previously viewed as low-status or distress-driven, have been repositioned as respectable, market-linked employment opportunities, thus improving the standing of project participants within their families and communities.



Resilience to Life Crises

Project participants demonstrated greater resilience to financial and family shocks through improved self-confidence, enhanced skills, stronger social networks, and better resource mobilisation skills. Predictable earnings reduced vulnerability during emergencies, festivals, and lean seasons, enabling women to cope without distress borrowing.



Social and Financial Safety Nets

The project has facilitated its participants' universal access to insurance (life, health, and accident) offered under various government social protection schemes. The project has also effectively functioned as a quasi-social protection mechanism by providing steady employment, minimum-wage assurance, and institutional support through producer enterprises and collective platforms (mutual benefit trusts). These structures have reduced dependence on informal moneylenders and enhanced long-term livelihood security.

Overall Assessment

The assessment clearly shows that enterprise-led NTFP value chain development can simultaneously deliver income security, gender empowerment, and resilience outcomes within a short timeframe. The multidimensional impacts observed suggest strong potential for replication and scaling-up as a sustainable livelihood and social protection model for marginalised and disadvantaged women.

1 - Women producers associated with stitching and sal/siali leaf plate manufacturing units



01 Background

Industree, with the support of Cartier Philanthropy, is working to 'socially and economically empower 800 marginalised women from rural, tribal backgrounds through the establishment of two self-owned sal / siali (Non-Timber Forest Produce) based biodegradable leaf plate enterprises in the districts of Odisha'.

The project envisaged the setting up of two women-owned NTFP/biodegradable leaf plate-making enterprises aggregating a total of 800 women producers (400 women producers in each enterprise). Industree was expected to assist in setting up one enterprise in the first year of the project and another in the second year, while handholding both enterprises towards sustainability. Essentially, the two enterprises were to be connected with the market for work orders, and the women producers were prepared to take

ownership & agency of the enterprises they were working with.

The project execution takes place through three broad approaches:

- The creation of enterprises collectively owned by women producers
- Building and strengthening microEnterprise leaders
- Professional management team supporting the women producers-owned enterprises to enable the 6C ecosystem (under Industree's time-tested intervention model for incubating and accelerating producer-owned enterprises)



02 Objectives-Impact Assessment

The project operated for three years and concluded in December 2025. In addition to the periodic reports on project progress submitted by Industree Foundation to Cartier Philanthropy, a third-party assessment of the project was conducted during the last quarter (Oct-Dec 2025) with the following overarching objectives.

- Capture the flow of project outcomes and impact across multiple levels of the project²
- Evaluate the project (on OECD-DAC³ criteria) to determine its overall usefulness



2 - Starting from individual producers and going up to the ecosystem level (producer >> household >> enterprise >> value chain >> ecosystem / economy)

3 - The OECD-DAC has defined six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact and sustainability which could be used to determine the merit or worth of a development intervention (policy, strategy, programme, project or activity). They are not a methodology or approach but lay out the questions to be answered about an intervention – either as part of an evaluation or during the design, implementation or monitoring phases. Together they describe the desired attributes of interventions: all interventions should be relevant to the context, coherent with other interventions, achieve their objectives, deliver results in an efficient way, and have positive impacts that last.

03 Approach and Methodology

The specific objectives of the assessment entailed evaluating the project's performance in achieving the targeted outcomes and impact. When attempting to assess the performance of socio-economic development projects in impact areas – such as gender empowerment, leadership development, resilience to life crises, ownership in promoted enterprises – where tangible or concrete effects generally become evident in the medium-term to long-term, it is apt to consider the project lifecycles of less than five years as relatively short. The assessment exercise has therefore focused on identifying early evidence and the directionality of changes in the project's medium- and long-term impact areas.

The assessment has considered women producers, their households and their producer-owned

enterprises as the focal participants under the project. Furthermore, the impact of the project on targeted value chains (of NTFP-based products such as sal/siali leaf plates) and the associated local ecosystems (covering the broader strata of women and producer-owned enterprises in Odisha state and the NTFP domain) has also been looked at.

The following table captures the indicative impact areas mentioned in the original proposal submitted by Industree Foundation to Cartier Philanthropy. The pathways for impact emanating from the project and transmitted to the focal project participants (women producers and their enterprises) have been classified into first-order effects (areas where the project has a direct impact) and second- and higher-order effects (areas where the project has an indirect impact).



Table 1: Impact Areas for the Project Assessment

| First Order Impact Areas | Second / Higher Order Impact Areas |
|---|---|
| <ul style="list-style-type: none"> • Employment generation | <ul style="list-style-type: none"> • Enhanced social standing |
| <ul style="list-style-type: none"> • Safe workspaces | <ul style="list-style-type: none"> • Higher resilience to life crises |
| <ul style="list-style-type: none"> • Minimum wage assurance | <ul style="list-style-type: none"> • Financially independent producer enterprises |
| <ul style="list-style-type: none"> • Income improvement (across multiple dimensions relevant to a rural household) | <ul style="list-style-type: none"> • Positive social & environmental footprints in natural fibre value chains |
| <ul style="list-style-type: none"> • Financial/economic empowerment | <ul style="list-style-type: none"> • Consistent, assured or predictable demand for products and services delivered by producers |
| <ul style="list-style-type: none"> • Access to design resources for competitive, appealing products | <ul style="list-style-type: none"> • Digital financial literacy, credit and other tools to access working capital for enterprise |
| <ul style="list-style-type: none"> • Gender mainstreaming | |
| <ul style="list-style-type: none"> • Sense of ownership and control in promoted enterprises | |
| <ul style="list-style-type: none"> • Transition from informal to formal value chains | |
| <ul style="list-style-type: none"> • Business, Entrepreneurial and leadership capability development | |

The aforementioned first and higher-order impact areas have provided dimensions for assessing the project's effects. *It is vital to note here that the impact areas identified in the above table should be considered as a superset from which the project has explicitly identified a subset of indicators in impact areas which were to be targeted during the three-year project implementation period.*

The project has periodically reported data on relevant outputs, activities and milestones (related to targeted impact areas) to Cartier Philanthropy. The assessment of the project has made efforts to not only capture relevant qualitative and quantitative information but also collect vital learnings, best practices and strategic insights to inform ongoing and upcoming initiatives related to women-producer-owned enterprises.

Integrative validity model⁴ for a 360-degree assessment of the first-order effects of the project based on the views and concerns of the most important stakeholders.

In its simplest form, this requires assessing an intervention based on its relevance and usefulness to stakeholders and intended beneficiaries. This model provides a logical framework for structuring the process of collecting information from stakeholders at different levels and experiences regarding their interactions with the project. This creates the possibility of assessing the extent to which the project implementation is geared towards meeting the project objectives. As a corollary, this approach can help identify gaps that limit the project's efficacy. The inputs required for integrative validity have been gathered through focus group discussions, semi-structured interviews and other interactions with the focal project participants.

Contribution Analysis to identify potential second-order effects and create an evidence-based narrative of the contribution of the project

Contribution analysis relies on the hypotheses of change underlying the expectation of the project's (or a specific intervention therein) impact on change, in terms of how it will manifest and why or how it is expected to occur. Typically, this would imply tracing pathways from the intervention-related benefits to an observed change – for instance, access to skill development training, better product designs, improved machinery and technological aids, which in turn could enable improvements in the quality or volume of products manufactured. Consequently, this methodology requires identifying the specific aspects of the second-order effects, like enhanced social standing, Higher resilience to life crises, etc. that are expected to be influenced by the project interventions and the related hypotheses of change.

The flexibility enabled by integrative validity and contribution analysis-based approaches, and the gaps they are likely to help identify, usually lead to the creation of a feedback mechanism that promotes a positive loop comprising processes such as planning, implementation, monitoring and improvement.



4 - Chen, Huey T. 2010. The bottom-up approach to integrative validity: a new perspective for program evaluation. *Evaluation and Program Planning*, 33, (3), 205- 214

Overall Methodology

The Third-party assessment has drawn on a mixed-methods approach, blending methods such as project data analysis, stakeholder interviews, focus group discussions, case studies, and comparative assessments with a counterfactual group of non-participants.

Besides eight (8) focus group discussions involving seventy-four (74) leaf collectors and nine (9) leaf stitching producers, the primary data collection exercises for the impact assessment have also included the following exercises:

- Semi-structured interviews with twelve (12) members of the project team from Industree Foundation,

seven (7) micro-enterprise leaders (MEL) and five (5) representatives of Mutual Benefit Trusts

- focus group discussions with non-participants in the project – a group which serves as a counterfactual to better understand the impact of the project
- case studies of selected project participants for illustrating how the project has brought about changes in the lives and livelihoods of these participants, especially focusing on some of the key impact areas listed in Table 1.



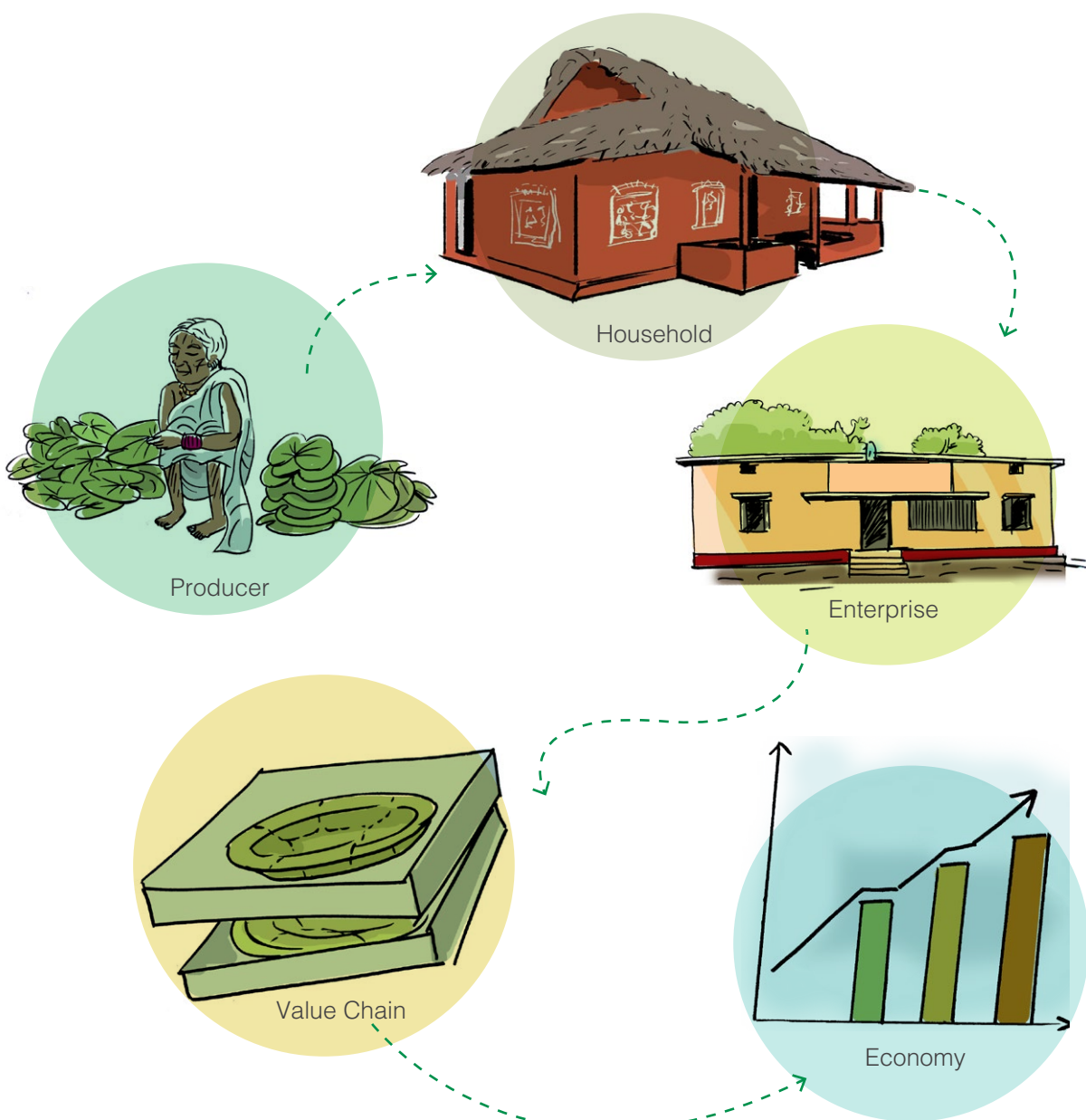
Table 2: Primary Data Collection Activities for Impact Assessment

| District | Block | Village / Place | Data Collection Activities |
|---|---|---|--|
| Nayagarh | Daspalla | | |
| | | Daspalla | <ul style="list-style-type: none"> FGD with Stitching Unit Members; |
| | | Basantpur | <ul style="list-style-type: none"> Meetings with Project Staff, including Field Trainers, MBT (Mutual Benefit Trust) Representative, Micro-Enterprise Leaders (MELs) |
| | | Siligadi | <ul style="list-style-type: none"> FGD with Leaf Collectors |
| | | Janisahi | <ul style="list-style-type: none"> FGD with Leaf Collectors |
| | | Tumandi | <ul style="list-style-type: none"> FGD with Leaf Collectors |
| <ul style="list-style-type: none"> Kandhamal | <ul style="list-style-type: none"> Balliguda | | |
| | | <ul style="list-style-type: none"> Balliguda | <ul style="list-style-type: none"> FGD with Stitching Unit Members; Meetings with Project Staff, including Field Trainers, Micro-Enterprise Leaders (MELs) |
| | | Dalamila | FGD with Leaf Collectors |
| | | Sapakamba | FGD with Leaf Collectors |
| <ul style="list-style-type: none"> Bhubaneswar | Panchgaon | | |
| | | Panchgaon | Meetings with Project Staff and Project Participants (working with the Stitching and Leaf Tableware Manu-facturing Unit); FGD with non-participants in the project (i.e. the counterfactual group) |

04 Findings from the Study

Flow of Project Outcome(s) & Impact(s)

The focus of the project on NTFP value chain development has potential ripple effects in terms of outcomes and impact across multiple levels of project, starting from individual producers and going up to the ecosystem level. The primary research carried out for impact assessment has been able to observe outcomes and impacts at the following levels (producer >> household >> enterprise >> value chain >> ecosystem/economy)





Producer and Household level

The project's positive impact is easily discernible across different types of producers, especially those involved in value addition and manufacturing activities (leaf sorting/grading, stitching, pressing, packaging) carried out at the various facilities set up under the project.

The first order impact areas which have been the most positively impacted by the project comprise income improvement (primarily in terms of the quantum and the stability of earnings); availability of assured employment (with extremely low level of attrition among the women producers (which refers to the focal project participants working in the leaf plate manufacturing unit at Panchgaon and other leaf stitching units set up under the project); skill enhancement (with most of the key functions under the project / enterprise being efficiently managed by production workers and staff hired locally from the project areas); amenable workplaces (providing assurance of safe, well-equipped, suitably-located and systematically organised workspaces complemented by a collaborative, egalitarian culture and accommodative work policies) and increased spending on education (especially by production workers motivated by the personal examples of the project staff handling important roles due to education / professional learning).

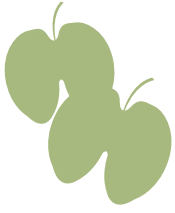
The second / higher order impact areas where the impact of the project has been acknowledged by the producers involved in value addition and manufacturing are enhanced social standing (because of full-time and steady employment along with the visible signs of an improved living standards reflected in their appearance, dressing and consumption behaviour); financial empowerment (evident through their increased awareness of financial avenues or instruments to invest their savings and also through their ability to contribute to household asset-building via small contributions from their earnings); gender equality (as reported by producers in the form of greater say in the decision-making at the household level particularly on financial matters and matters related to education and career of their children) and most importantly on higher resilience to life crises (through improvement in self-confidence, situational awareness, social networks and resource mobilization skills) which could be attributed to the diversity of life skills, exposures and perspectives gained during their association with the project / enterprise.



Enterprise level

Besides the impact on producers, the project has been able to create an equally significant level of enterprise created to integrate producers in the value chains of Sal/Siali leaf plate making. It is actually the enterprise (and associated community institutions/entities) that is the centrepiece of how the project has been able to positively impact both the producer community and the entire value chain of Sal / Siali leaf at different geographical levels (regional / state / national).

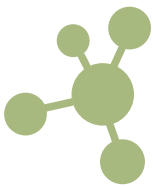
The robustness of the enterprise's organisational development processes, stakeholder management practices, operational systems, and techno-commercial expertise has reinvigorated local value chains by creating an unmatched balance of producer empowerment and market-centricity. Hence, the enterprise could be credited with championing the movement towards market-led NTFP value addition and manufacturing systems. It is remarkable to see that the strengthening of the enterprise and its constituent collectives (mutual benefit trusts) has latently received a higher level of priority amongst the various goals of the project. By focusing on strengthening the enterprise and its constituent collectives, the project has enabled the sustainability of its positive impacts beyond the project's lifecycle.



Value Chain level

The project has contributed to the upgradation of local and regional value chains in multiple ways. The first and foremost has been in terms of setting up a fair pricing system for the Sal / Siali leaves. This price level ensures fair monetary compensation to the leaf collector communities, who were earlier vulnerable to the unilateral dominance of the buyers, since there are no functional markets for Sal / Siali leaves. For products such as Sal / Siali leaves, which is characterised by low unit price, light but bulky' nature, specialised storage requirements, seasonal availability with frequent periods of glut and scarcity, the bargaining power of leaf collectors/suppliers is extremely low, invariably leading to buyers dictating the purchase price. The project studied the relationship between the prices of the finished products and the raw materials and has come up with a fair market-linked price for each bundle of raw Sal / Siali leaf. This price now acts as a floor/benchmark price for Sal / Siali leaf bundles, particularly in the project geographies, thus ensuring fairness and transparency in prices offered to the leaf collectors. Though the enterprise has limitations in terms of the total quantity of raw material available (Sal / Siali leaf bundles), it can buy to meet its annual target (production capacity) of Sal / Siali tableware. The enterprise has disseminated vital knowledge among the leaf collector communities to promote fair, transparent and market-linked prices of Sal / Siali leaf bundles.

Other areas in which the project has positively impacted the value chain are: improved infrastructure for storage of Sal / Siali leaves; skill upgradation of stitching workers leading to lower wastage of Sal / Siali leaves; impetus to proper drying of Sal / Siali leaves by leaf collectors; and product/packaging improvements in Sal / Siali leaf plate.



Ecosystem / Economy level

The visit to the leaf plate manufacturing facility set up at Panchgaon uncovered the positive impact of the project on the local ecosystem / economy. Besides gaining visibility locally due to the leaf plate value addition and manufacturing facility, Panchgaon has benefited substantially from the employment opportunities created by the project, which, in turn, have spawned other second- and higher-order development impacts at the ecosystem level.

The positive externalities include the recognition of the local women employed by the project as key contributors to the socio-economic status of their households; reinforcement of the importance of professional training and skill development among the local youth, especially girls; and the repositioning of Sal / Siali leaf tableware manufacturing as a respectable livelihood activity. Furthermore, the quality of leaf plates made from NTFP produced by the enterprise and the promotion of such tableware as an upmarket, eco-friendly and conscious alternative among potential consumers has revitalised the ecosystem for Sal / Siali-based plates. Though the enterprise has started promotion of the brand (for NTFP based products) by highlighting it on packing material, there are definite plans to introduce elements of branding on each tableware item produced by the enterprise. For developing the tableware, the enterprise utilises leaves collected by focal project participants from the Sal / Siali tree, which, if not collected, create forest litter that can potentially trigger forest fires. Sal / Siali leaf collection is an activity which not only prevents forest fires but also enables the efficient collection of other NTFP produce (sal seed, etc.) useful to local tribal communities.

Consolidated Findings based on Interactions with Key Stakeholders

Table 3: Consolidated Findings⁵ from Primary Research with Key Stakeholders

| Impact Areas | Key Findings from Stakeholders |
|----------------------------------|---|
| <p>Income Improvement</p> | <p>Leaf Collectors</p> <p>In general, there has been an enhancement of incomes among women participating at the village level as leaf collectors.</p> <p>There are two distinct time periods of leaf collection: peak period - April to mid-July; lean period - October to December, which sometimes extends till January.</p> <p>Leaf collector women reported incomes of INR 3000-5000 per month during the peak season and INR 2000-3000 per month during the lean season.</p> <p>Before the project, project participants from Daspalla reported irregular incomes due to high volatility and unpredictability in the prices of Sal / Siali leaf bundles. These leaf-collecting women never received any inputs or guidance from buyers regarding the quality parameters for Sal / Siali leaves.</p> <p>Project participants from Balliguda reported that Sal / Siali leaf collection has become an additional source of income for them, as they were not involved in leaf collection earlier. The major deterrent for them was the absence of an assured buyer. For project participants in Balliguda, the entire income from leaf collection (during six months of the year) is attributed solely to the project.</p> |
| | <p>Production Workers (Women Producers) (Focal Project Participants working with Stitching & Leaf plate Manufacturing Units)</p> <p>The project has been providing an assured daily minimum wage to each producer, subject to the achievement of the daily production target, which is deemed to be easily achievable by the producers.</p> <p>The enterprise has instituted non-monetary incentives for higher productivity while allowing flexibility in work timings/attendance for producers with family constraints</p> <p>The enterprise provides scope for income improvement for producers by moving them to roles which require higher / additional skills in a production function, in a supervisory role or in a cross-functional position</p> |

5 - Findings are presented in a form that preserves the original wording and intent of respondents, with minimal interpretation

| Impact Areas | Key Findings from Stakeholders |
|-------------------------------------|--|
| <p>Employment Generation</p> | <p>Leaf Collectors</p> <p>In Daspalla, the project ensured engagement of at least 6 months in leaf collection work for women associated with it. The project has also attracted other women for leaf collection work.</p> <p>Several leaf collectors from Daspalla were reported to have generated additional employment by using the income from leaf collection work under the project</p> <p>Leaf collection did not exist as a main earning opportunity in Balliguda before the project. The project was instrumental in developing leaf collection as an attractive employment option for women doing labour work, which forced them to go out of the village.</p> |
| | <p>Producers (Stitching and Pressing)</p> <p>Stitching and plate manufacturing of Sal / Siali leaves are the activities which have contributed the most impactful and attractive employment opportunities under the project.</p> <p>The multiple stitching units operating at various locations under the project have been the prime source of continuous, stable and remunerative employment to the highest number of project participants</p> <p>The final value addition and manufacturing facility at Panchgaon has been successful in building a team of skilled, committed women producers from nearby villages (s) who did not have any prior skills, know-how, understanding, or exposure to anything related to Sal / Siali leaf tableware.</p> <p>One of the strongest pieces of evidence of the project's goodwill in the local community is the long list of women from Panchgaon waiting for meaningful, rewarding employment opportunities with the enterprise. Another piece of evidence for the goodwill is the negligible employee attrition, which makes every new employment opportunity with the project and the enterprise a really sought-after one.</p> |

| Impact Areas | Key Findings from Stakeholders |
|---------------------------------|--|
| <p>Skill Enhancement</p> | <p>Producers (Stitching and Pressing)</p> <p>The majority of producers in stitching and pressing roles did not have any prior skills or experience in the activity</p> <p>The project organised necessary skill development training to such producers who acknowledged the transferability of skills for tailoring and alteration of garments</p> <p>The producers expressed conviction that their improved skills in stitching leaves would translate into better prices for tableware prepared from such stitched leaves</p> <p>Some women producers from stitching units at Balliguda and Daspalla highlighted the transfer of know-how during their visit(s) to the main value addition and manufacturing facility located at Panchgaon. These producers reported gaining an end-to-end and first-hand understanding of the process from leaf collection to manufacturing of leaf plate during the visit(s).</p> |
| | <p>Leaf Collectors</p> <p>Leaf collectors credited the project for their improved ability to distinguish between good and poor-quality leaves. As a result, leaf collectors exercise greater productivity and better judgment during the plucking of leaves and also during the grading of collected leaves.</p> <p>The improvement in productivity and identification ability among leaf collectors has directly contributed to improved monetary returns for the time invested by them in leaf collection and grading</p> |

| Impact Areas | Key Findings from Stakeholders |
|---|---|
| <p>Usage of Increased Income & Financial Empowerment</p> | <p>Leaf Collectors</p> <p>Leaf collectors in Daspalla reported the use of increased earnings from project to (i) improve the quality of school/education for their children; (ii) reduce the pressure of household expenses on male members; (iii) purchase of productive assets such as goats; (iv) allocate money for future in the form of savings / fixed deposits/post office schemes; (v) upgrade lifestyle through higher spending on jewellery, cosmetics and clothes.</p> <p>Leaf collectors in Balliguda reported a different behaviour in terms of the use of increased earnings from the project. The income of peak season from April to July is used for: (i) meeting the special demands (related to clothes, gifts and foods) of children who come back home from hostels during their summer vacations; (ii) spending on celebration of social events as the period coincides with the season of festivals and marriages in local tribal communities; (iii) purchasing brass utensils which are a symbol of the status of their family; (iv) supporting male members in meeting regular expenses of the household; (v) upgrading lifestyle through higher spending on jewellery, cosmetics and clothes. The income of the lean period from October to January is used for: (i) greater consumption of non-vegetarian food items; (ii) keeping aside funds for the celebration of Christmas, since many project participants belong to the Christian community.</p> <p>Leaf collectors from Balliguda acknowledged that leaf collection work assisted them in reducing their dependence on external loans, especially to meet expenses incurred during the festival and marriage season.</p> |

Table 4: Indicator Table

| Sl. No. | Project Indicators | Overall | Achievement |
|---------|--|------------|-------------|
| 1 | Number of women enterprises set up | 2 | 2 |
| 2 | Average percent change in earnings of women producers (by the end of the project period) | 35% | 35% |
| 3 | Number of individuals with increased earnings following the completion of the project | 800 | 800 |
| 4 | Percentage change in sales of women enterprises (Cumulative year on year) | 200% | 200% |
| 5 | Number of compliant warehouses set up | 1 | 1 |
| 6 | Number of Product Samples Developed | 15 | 15 |
| 7 | Number of individuals with improved technical skills following the completion of the project | 800 | 800 |
| 8 | Percentage of female participants in programs designed to increase access to productive economic resources (assets, credit, income, or employment) | 85% of 800 | 100% |
| 9 | Number of women becoming Board Members/ Trustees in the setup enterprises | 6 | 7 |
| 10 | Percentage of participants reporting increased agreement with the concept that males and females should have equal access to social, economic, and political resources and opportunities | 70% of 800 | 95% |

Description of Indicator Table

The above table shows that the project performed very well across all 10 indicators. Most targets were met fully, and a few were even exceeded. Two women-led enterprises were successfully set up, 15 new product samples were developed, and one compliant warehouse was established, showing that the main planned activities were completed.

The results also show clear improvements in income and business performance. Women producers saw an average 35% increase in earnings, and 800 people reported that their earnings increased after completing the project. Sales from women's

enterprises also grew strongly, with a 200% year-on-year increase. In terms of skills, 800 individuals reported improved technical skills by the end of the project.

The project also did well on women's participation and empowerment. Women's participation reached 100% (higher than the overall benchmark of 85% of 800). More women also moved into leadership roles, with 7 women becoming Board Members/Trustees compared to the overall target of 6. Attitudes around gender equality improved with 95% of participants reporting stronger agreement that men and women should have equal access to opportunities, compared to the overall benchmark of 70% of 800.

Control Group Observations

A focused group discussion (FGD) was conducted with 13 women from Panchagaon village under Jamukuli gram panchayat in Khordha District. All participants belonged to Scheduled Caste (SC) households and were members of Self Help Groups (SHGs) promoted under the Odisha Livelihood Mission (OLM). At present, all the women are homemakers, primarily engaged in household responsibilities. Although they have accessed loans through their SHGs, none are currently undertaking income-generating livelihood activities. The main sources of household income include carpentry, masonry, daily wage labour, driving, and agricultural labour. Around half of the participants own small parcels of agricultural land and cultivate paddy seasonally, while the remaining households are landless and depend on non-farm or wage-based work.

All participants expressed a strong interest in engaging in livelihood activities and specifically showed willingness to work in the leaf plate manufacturing women-owned enterprise set up by the Industree Foundation. However, due to prevailing social norms and family restrictions, they were unable to travel outside the village for daily work. As a result, they requested that work opportunities be made available within their village or hamlet/pada. The women proposed home-based leaf plate stitching activities with the provision of stitching machines made available in their villages. The women emphasised that earning an independent income would enable them to meet essential household needs such as food and clothing, according to their preferences, while also allowing them to invest in their children's future.

Evaluation of the Project (according to OECD-DAC Criteria)

The OECD-DAC has defined six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact and sustainability, which could be used to determine the merit or worth of a development intervention (policy, strategy, programme, project or activity). They are not a methodology or approach but lay out the questions to be answered about an intervention – either as part of an evaluation or during the design, implementation or monitoring phases. Together, they describe the desired attributes of interventions: all interventions should be relevant to the context, coherent with other interventions, achieve their objectives, deliver results in an efficient way, and have positive impacts that last.



Table 5: Application of OECD-DAC Evaluation Criteria to the NTFP Project in Odisha

| OECD-DAC Criterion | Key Observations of Impact Assessment Study | Assessment |
|--------------------|--|------------------------|
| <p>Relevance</p> | <p>The project responds exceedingly well to the priorities of key stakeholders on both the supply side and the demand side of the ecosystem for Sal / Siali leaf</p> <p>From the supply side, the state agencies such as the Forest Department and the Tribal Welfare Department require the tribal and other communities to continue the collection of Sal / Siali leaves. The Sal and Siali leaf litter, if not collected during the peak season of April-May, increases the risk of forest fires and also makes the collection of other economically important NTFP, such as Mahua flower and seeds and occasionally Harra / Bahera fruits, if fallen early</p> <p>The drudgery-filled collection activity of Sal and Siali leaves and the low unit price fetched by the bundles of Sal and Siali leaves had relegated Sal and Siali leaf collection, value addition, and conversion to tableware to socially undesirable employment options, which people chose when forced by economic distress. The project has helped to reposition these key activities in Sal / Siali leaf tableware as meaningful, societally relevant and market-led economic activities. As a result, other women from the project locations are increasingly seeking employment opportunities with the project/enterprise.</p> <p>From the demand side, there has been an increased consumer interest in eco-friendly, sustainably produced, disposable tableware options, including those made from Sal / Siali leaves. Currently, such tableware is being popularised by premium restaurants/eateries, which use disposable tableware because of challenges in the adoption of reusable tableware and disposable tableware made of single-use plastics. Enabling factors such as the ban and regulations on single-use plastics, growth in food services and delivery, a marked increase in out-of-home food consumption, abundant availability of eco-friendly raw materials for tableware, technological and product innovations, besides the willingness to adopt better tableware for the requirements of premium B2B buyers (corporate offices / outdoor caterers and eateries at upmarket retail locations)</p> | <p>Highly relevant</p> |

| OECD-DAC Criterion | Key Observations of Impact Assessment Study | Assessment |
|--------------------|--|-----------------|
| Coherence | <p>The Sal / Siali leaf tableware Project exhibits a high degree of coherence with other development interventions of central and state government agencies, international development agencies and civil society organisations because it sits at the intersection of livelihoods, environment, gender, tribal welfare, and sustainability.</p> <p>Coherence with Livelihood & Poverty Alleviation Interventions</p> <p>It aligns well with interventions of large government programmes such as NRLM (SHG & enterprise promotion), MSME (cluster development programmes), since it uses locally available NTFPs; generates seasonal but recurring income during lean agricultural months; creates value addition beyond raw leaf collection; strengthens rural income security and reduces migration caused by economic distress.</p> <p>Coherence with Tribal Development & Forest Rights Interventions</p> <p>It aligns well with interventions under the Forest Rights Act (CFR & NTFP rights), TRIFED (Van Dhan Vikas Kendras), Tribal Sub-Plan, since it uses Sal / Siali leaves, which are NTFP traditionally collected by tribal communities; reinforces community forest management and traditional ecological knowledge and converts forest rights into tangible economic benefits</p> <p>Coherence with Women’s Empowerment & SHG Interventions</p> <p>It aligns well with interventions of NRLM, women SHG Federations and gender-focused enterprise development programmes since it is centred around the key activities of collection, stitching, and plate-making, which are women-dominated activities, and it has been organised on the lines of a cluster-level enterprise model to enhance women’s income, decision-making power and agency</p> <p>Coherence with Environmental & Climate Action</p> <p>It aligns well with climate-resilient livelihood programmes, SDG (12, 13, 15), and government policies banning single-use plastics. Further, it promotes biodegradable alternatives to plastic tableware and encourages non-destructive forest use (leaf plucking vs. tree felling) and follows low-carbon footprint production systems to ensure livelihood creation with ecological sustainability</p> <p>Coherence with Circular Economy & Waste Reduction Initiatives</p> <p>It aligns well with Swachh Bharat Mission, circular economy policies and sustainable consumption campaigns as table-ware made from Sal / Siali leaves is renewable and com-postable; its waste returns to soil post-use and utilises natu-ral stitching materials to ensure the integration of produc-tion–consumption–waste cycles naturally.</p> | Highly coherent |

| OECD-DAC Criterion | Key Observations of Impact Assessment Study | Assessment |
|----------------------|--|--|
| Effectiveness | <ul style="list-style-type: none"> • For the first-order impact areas examined during field research, the project demonstrated a high level of effectiveness, which has been captured in the previous sections. The first-order impact areas (identified on the basis of the proposal submitted by Industree Foundation to Cartier Philanthropy) in which the impact assessment study could observe a high degree of achievement of objectives along the results chain/impact pathway are: • employment generation • safe workspaces • minimum wage assurance • income improvement (across multiple dimensions relevant to a rural household) • financial/economic empowerment • access to design resources for competitive, appealing products • gender mainstreaming • sense of ownership and control in promoted enterprises • accelerated growth of producer enterprises • transition from informal to formal value chains • business, entrepreneurial and leadership capability development | Highly effective (in impact areas observed during the impact assessment study) |
| Efficiency | <ul style="list-style-type: none"> • The impact assessment study could not provide an opportunity to gather relevant observations and reference financial information for commenting on the efficiency criterion | Not studied (Project Fund utilisation information was not part of the scope of work for the Impact assessment study) |

| OECD-DAC Criterion | Key Observations of Impact Assessment Study | Assessment |
|--------------------|--|--|
| Impact | <ul style="list-style-type: none"> • The impact assessment study provided significant insights into the effects catalysed or triggered by the project in second- and higher-order impact areas. Some of the second and higher order impact areas in which the impact assessment study could observe effects of the project are: <ul style="list-style-type: none"> • enhanced social standing • Higher resilience to life crises • financially independent producer enterprises • positive social & environmental footprints in natural fibre value chains • increased spending on education • consistent, assured or predictable demand for products and services delivered by producers • digital financial literacy, credit and other tools to access working capital for the enterprise • improvement in the efficiency of the enterprise through digital business apps/systems • It is to be noted that the level of effect catalysed or triggered by the project across different impact areas may not be similar, but it is remarkable that such an impact could be discerned within such a short time from the commencement of the project. | Discernible and directionally correct (positive) |
| Sustainability | <ul style="list-style-type: none"> • This is the evaluation criterion on which the project has potentially set an ideal example for other enterprise development projects to follow. By focusing on key organisational development areas such as economic and techno-commercial viability/resilience, robust internal systems and processes, human capital development, stakeholder management, technology integration, product enhancement, quality assurance, market development, etc., the project has ensured that the enterprise becomes the institutional vehicle to continue the delivery of project benefits to targeted stakeholders. • Despite the relatively short duration of the project, it has been able to accord to reasonably achieve the transition from a project mode to enterprise mode since enterprises act like going concerns (i.e. business entities assumed to continue their operations in the foreseeable future, without the intention or necessity of liquidation, closure, or major downsizing). | Substantially sustainable |

05 Concluding Observations

The assessment affirms that Industree Foundation's NTFP Value Chain, supported by Cartier Philanthropy, has delivered strong, credible, and multidimensional impact within a relatively short 3-year project lifecycle. The intervention stands out as a high-quality philanthropic investment that has successfully combined women's economic empowerment, forest-based livelihoods, and environmentally responsible enterprise development into a cohesive and scalable model.

At the level of women producers and their households, the project has generated clear and verifiable gains in income stability, ensured employment, skill development, and access to safe and dignified workspaces. Beyond these tangible outcomes, the assessment finds early, but compelling evidence of deeper social transformation manifested in enhanced self-confidence, increased decision-making power within households, improved aspirations for children's education, and greater resilience to economic and personal shocks. These outcomes signal that the project is not only improving livelihoods but also strengthening women's agency and long-term well-being.

The defining strength of the project lies in its enterprise-centric design. By investing in organisational development, professional management systems, and techno-commercial capabilities, the project has enabled the emergence of women-owned enterprises that function as viable going concerns, rather than time-bound project entities. This strategic emphasis significantly enhances the impact's durability and ensures that benefits to women producers and forest communities are positioned to continue and grow well beyond the period of philanthropic support.

At the value chain level, the project has addressed long-standing structural inequities in the Sal/Siali leaf economy. The establishment of transparent, market-linked floor pricing for leaf collectors, improvements in storage and quality management, and investments in product development and packaging have collectively strengthened fairness, efficiency, and resilience within the NTFP value chain. These interventions have directly countered the historical marginalisation of leaf collectors and demonstrate how thoughtful philanthropy can reshape market systems in favour of primary producers.

Importantly, the project aligns strongly with and actively advances broader development and sustainability priorities, including women's economic inclusion, tribal livelihoods, climate-positive production systems, circular economy principles, and the transition away from single-use plastics. The promotion of Sal/Siali leaf tableware as a premium, eco-friendly alternative has contributed to repositioning a traditional forest-based activity as a modern, aspirational, and environmentally responsible enterprise.

In conclusion, the project represents a high-impact, strategically coherent, and scalable model for inclusive NTFP value chain development. It demonstrates how catalytic philanthropic support can unlock enterprise-led solutions that generate lasting social, economic, and environmental returns. With continued investment, strategic partnerships, and selective scaling, this model has the potential to influence policy, inspire replication, and contribute to resilient, women-led forest economies across India and beyond.







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