



INDEPENDENT CSR IMPACT ASSESSMENT REPORT
MAHINDRA PROJECT HARIYALI :2021-2022

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Mahindra & Mahindra CSR Impact Assessment Report FY 21-22

This is a Report of the Independent CSR Impact Assessment Report of Mahindra & Mahindra supported CSR Project – Project Hariyali. This report builds on the guidance available in:

- The Companies Act 2013 Schd VII, Sec 135 and its amendments thereof.
- Bureau of Indian Standards (BIS) IS/ISO 26000:2010 Guidance on Social Responsibility
- UN Sustainable Development Goals

CSR Impact Assessment is a process which is individual to the company and depends on factors such as the size of the company and its maturity in addressing the expectations of the community it operates in.

The Impact Assessment is a process of engagement, and the sharing of data, experiences and perspectives between the Mahindra & Mahindra (M&M) team, its implementing partners and the Bluesky team and is undertaken in a partner-to-partner spirit.

The purpose of the CSR Impact Assessment Report is for M&M to assess the impact of the activities of their CSR efforts, strive to maximise the impact of their CSR efforts and to identify areas for improvement and further engagement with the community.

Mahindra & Mahindra

Mahindra and Mahindra Limited (Mahindra), is an Indian multinational conglomerate with a diverse range of business interests, including automotive, aerospace, agribusiness, and hospitality. Established in 1945 as a steel trading company in Mumbai, the group has grown to become one of the largest Indian multinational corporations.

Mahindra's automotive division is known for producing SUVs, commercial vehicles, and electric vehicles, while its agribusiness division is actively involved in promoting sustainable agriculture practices. With a focus on innovation, sustainability, and social responsibility, Mahindra has established itself as a leader in its various business domains, both in India and internationally.

Mahindra CSR Policy

The Mahindra CSR Policy aims to focus the company's efforts within the constituencies of girls, women & farmers by innovatively supporting them through programmes designed in the domains of education, health and environment while harnessing the power of technology. To maximize impact, the CSR Projects will focus on empowering girls and women and continue to support the environment through scaling up our tree plantation programme.

The Company has a well-defined and robust governance structure to oversee the implementation of the CSR Policy and monitoring of CSR projects as per the requirements of Section 135 of The Companies Act-2013.

<https://www.mahindra.com/investor-relations/policies-and-documents>

About Implementing Partner – Naandi Foundation

Naandi Foundation is the implementing partner for **Project Hariyali**

Naandi was founded as a Public Charitable Trust on November 1, 1998. Born out of the idea of creating a professionally run organization managed by eminent business leaders as Trustees, Naandi leads in implementing new ideas and projects in the socio-development sector of India- partnering with various state governments, corporate houses, international and national development organizations and showcasing large scale successful delivery of public services.

About BlueSky Sustainable Business LLP

Bluesky is an Accredited Inspection Body for social service projects as per ISO/IEC 17020:2012, which specifies requirements for the competence of bodies performing inspection and for the impartiality and consistency of their inspection activities.

Bluesky is accredited by NABCB -National Accreditation Board for Certification Bodies, Quality Council of India to conduct assessments of social projects.

The Bluesky impact assessment inspection methodology and the consequent Impact assessment report & certificate conforms to the guidance available in:

- The Companies Act 2013 Schd VII, Sec 135 and its amendments thereof.
- Bureau of Indian Standards (BIS) IS/ISO 26000:2010 Guidance on Social Responsibility
- UN Sustainable Development goals



Project Hariyali

Established in 2010, Project Hariyali is an afforestation initiative supported by Mahindra in ITDA Paderu

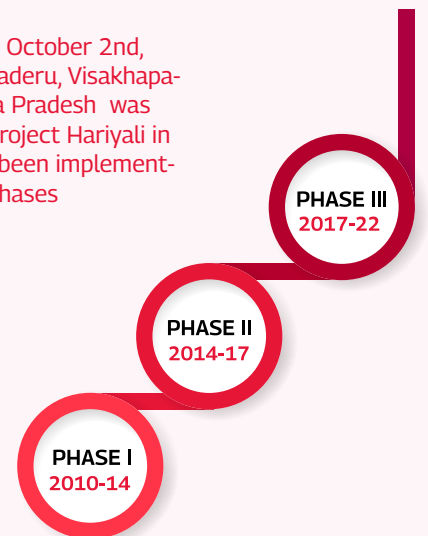
Cumulatively, as of FY 22, A total of 1,34,09,683 plant consisting of fruit, forest & shade trees and coffee saplings have been planted as a part of Project Hariyali. The project is implemented in 723 villages with 25,984 farmers impacting over 1,20,000 farmer families in ITDA Paderu region.

The project aimed to convert degraded landscape into a multi-use landscape, thereby improving food security, generating additional income for the community and support overall improvement in the quality of life. Strengthening the cooperative movement by up-skilling its farmer members (beneficiary farmers of Project Hariyali) has contributed to the sustainability of the project.

Fruit, Forest & Shade trees (FFS) were planted in the first phase and coffee saplings were introduced in 2014 (2nd phase) because the terrain, altitude, and rainfall of ITDA Paderu were found to be suitable for growing coffee. Coffee grows under shade trees; thus, contributing to afforestation, producing rich biomass, increasing water table, and preventing erosion of topsoil.

Project Hariyali was conducted across five Mandals in ITDA Paderu (Integrated Tribal Development Agency) of the new district of Allu Seetharam Raju in Andhra Pradesh, The five mandals of Project Hariyali are Anantagiri, Hukumpeta, Munchingput, Pedabayulu, and Paderu.

Launched on October 2nd, 2007, ITDA Paderu, Visakhapatnam, Andhra Pradesh was included in Project Hariyali in 2010, It has been implemented in three phases



List of fruit & shade varieties, and coffee

Year	Fruit, Forest and Shade varieties (FFS)	Coffee	Total number of plantings
2010-11	2,16,213	-	2,16,213
2011-12	7,88,589	-	7,88,589
2012-13	13,47,094	-	13,47,094
2013-14	3,46,140	3,02,082	6,48,222
2014-15	10,55,488	2,76,000	13,31,488
2015-16	11,54,895	9,48,211	21,03,106
2016-17	11,85,674	7,21,782	19,07,456
2017-18	6,28,227	4,66,497	10,94,724
2018-19	3,19,122	5,10,936	8,30,058
2019-20	5,06,451	6,22,588	11,29,039
2020-21	4,91,832	4,08,406	9,00,238
2021-22	4,58,960	6,54,496	11,13,456
Total	84,99,285	49,10,998	1,34,09,683



Project Hariyali's Objectives



Skilling the farmers and developing local nurseries with species best suitable for forest restoration and erosion prevention.



Natural resource management and global organic farming protocols as a means to increasing a community's income and its agricultural ecosystem for an overall improvement in the quality of life.

ITDA Paderu

ITDA Paderu (Integrated Tribal Development Agency) is in the new district Allu Seetharam Raju in Andhra Pradesh, It has been facing significant forest degradation due to climate change leading to loss of forest cover. This has resulted in soil erosion, reduced water retention, and a decline in biodiversity, impacting the indigenous communities that depend on forest resources.

The valley is home to several indigenous communities, with the Kondadora, Kondareddi, and Valmiki tribes being the most prominent. Agriculture and allied activities are the backbone of the local economy.

The literacy rate in the region is 46.8%, (census 2011) which is lower than the national average, and there is a gender ratio of 1,011 females for every 1,000 males. The cultural traditions of the local communities are closely tied to the surrounding forests, and many tribal festivals and rituals focus on forest worship and conservation.

Categories of stakeholders

The following list of stakeholders was identified as major stakeholders. Stakeholders, for this report, are identified as those who influence or are influenced (beneficiaries) by the project.

1. Small & marginal farmers
2. Farmer members of Mutually Aided Cooperative Society
3. Community people (other than farmers)
4. Nursery owners
5. Naandi Foundation Experts

Compliance with The Companies Act-2013

Project Hariyali contributes to the following sections of The Companies Act 2013, Schd VII, Sec 135

(ii) promoting ...employment enhancing vocation skills and livelihood enhancement projects.

iv) Ensuring **environmental sustainability, ecological balance, protection of flora and fauna**, animal welfare, **agroforestry**, (conservation of natural resources and maintaining quality of soil...)

(x) rural development projects

UN Sustainable Goals

The project also contributes to the following UN Sustainable Goals

1 NO POVERTY 	Goal 1: End poverty in all its forms everywhere	13 CLIMATE ACTION 	Goal 13: Take urgent action to combat climate change and its impacts
2 ZERO HUNGER 	Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	15 LIFE ON LAND 	Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
8 DECENT WORK AND ECONOMIC GROWTH 	Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		



Impact Assessment

Scope of CSR Impact Assessment

The scope of the CSR impact assessment is limited to the activities done in 2021-2022.

1. To assess the CSR Project Impact, sustainability, efficiency, and effectiveness; (specifically to cover)
 - a | To calculate sapling survival rate
 - b | To calculate the carbon sequestration happened due to the project activity
 - c | To focus on other social issues that bring in other dimensions and make the Impact Assessment more holistic
2. To assess the CSR Projects performance as per the pre-defined targets provided by M&M to the Implementing Agency
3. To assess if the objectives of the projects have been met
4. Identify the best practices which can be standardized and or scaled up
5. Identify areas of improvement for maximizing potential to do good.

Sampling for Stakeholder Feedback & Engagement

4 villages in 2 mandals where planting happened in 21-22

1. 7 Key Informant interview,
2. 12 Focus Group Discussions
3. 100 quantitative surveys were conducted

A | Sapling Survival Rate

Project Hariyali is an afforestation project with the focus on planting a wide variety of trees in the ITDA Paderu region. In FY 2021-22, a total of 11,13,456 saplings were planted in 2 mandals of Paderu and Hukumpeta mandals of ITDA Paderu. This included the pending planting halted due to the 2nd wave of FY 20-21.

The success of Project Hariyali, an afforestation initiative, can be measured by the survival rates of the plantations.

For the saplings planted in 21-22, a sample of 947 saplings was studied to estimate the survival rate. Based on the sampling of 4 villages in the 2 mandals (where planting was done in 21-22) the survival rate is 94.67%

(It must be noted that the sample saplings are approximately less than 2 years at the time of the study.)

Project Hariyali's agroforestry systems in ITDA Paderu region include three tiers of vegetation - coffee combined with shade trees of fruit, legume and forest species to ensure a more balanced and diversified income for farmer families. The varied planting also helps mitigate the risk of a single income source with a diversified fruit and timber trees portfolio.

Project Hariyali involves active community participation - with the plants being planted on land belonging to farmers and active volunteers helping the farmers. The ownership of plants has significantly contributed to the high survival rate of the plants.



STRATUM 1- COFFEE							STRATUM 1
Mandal	Village	Total saplings planted in 2021	Total samples for Inspection	No. of plots	Survival Rate	Total saplings surviving	Average Survival Rate
Paderu	Gurragaruvu	33107	35	5	97%	32114	93%
Paderu	Birmisala	6742	46	4	89%	6000	
Hukumpeta	Kuthangi Thadeput	5650	32	4	91%	5142	
Hukumpeta	Goppulapalem	6100	24	4	96%	5856	
STRATUM 2 - (Erythrina, lithosperma, Jatropha, Custard Apple, Gliricidia spegium)							STRATUM 2
Mandal	Village	Total saplings in 2021	Total samples for Inspection	No. of plots	Survival Rate	Total saplings surviving	Average Survival Rate
Paderu	Gurragaruvu	16590	79	6	87%	14433	93%
Paderu	Birmisala	5250	30	3	90%	4725	
Hukumpeta	Kuthangi Thadeput	2415	75	2	100%	2415	
Hukumpeta	Goppulapalem	1485	57	2	96%	1426	
STRATUM 3 - (CitrusParadisi , Lemon, Black Plum, Mango, Orange, Almond,Mosambi,Arjuna, Guava, Neem, Mahua, Sapota, Annato, Mimusopselengi, Dadapu)							STRATUM 3
Mandal	Village	Total saplings in 2021	Total samples for Inspection	No. of plots	Survival Rate	Total saplings surviving	Average Survival Rate
Paderu	Gurragaruvu	15010	166	6	97%	14560	98%
Paderu	Birmisala	4750	74	5	100%	4750	
Hukumpeta	Kuthangi Thadeput	5655	194	5	97%	5485	
Hukumpeta	Goppulapalem	1355	135	3	98%	1328	
					Total Combined Average Survival rate of 3 stratum		94.67%

B | Potential Carbon Sequestering

A positive impact of the high survival rate of planting in Project Hariyali is the significant potential for carbon sequestration.

For the saplings planted in 21-22, a sample of 947 saplings was studied to estimate the potential carbon sequestering.

The same logic is used to get the predicted value for Carbon sequestration for one tree for upcoming three years - FY 2024, 2025, 2026.

According to the linear regression model, the equation of the line that fits for the Carbon Sequestration production as per data available from survey is.

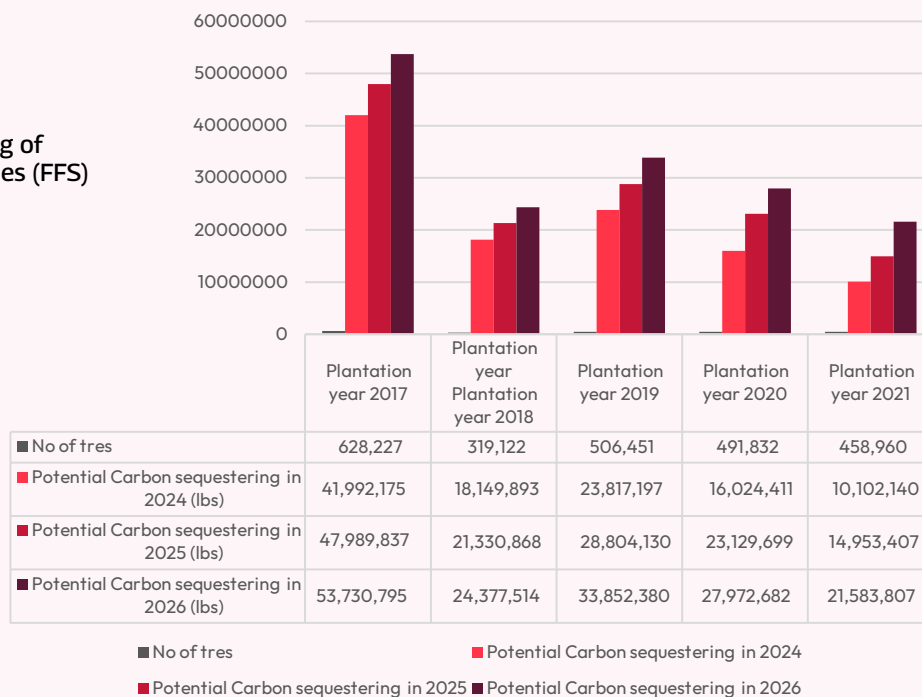
$y = 14.205x + 0.7987$, where x is the index of the data year from the plantation.

The above equation is used to predict the value for Carbon sequestration for one tree for upcoming years.

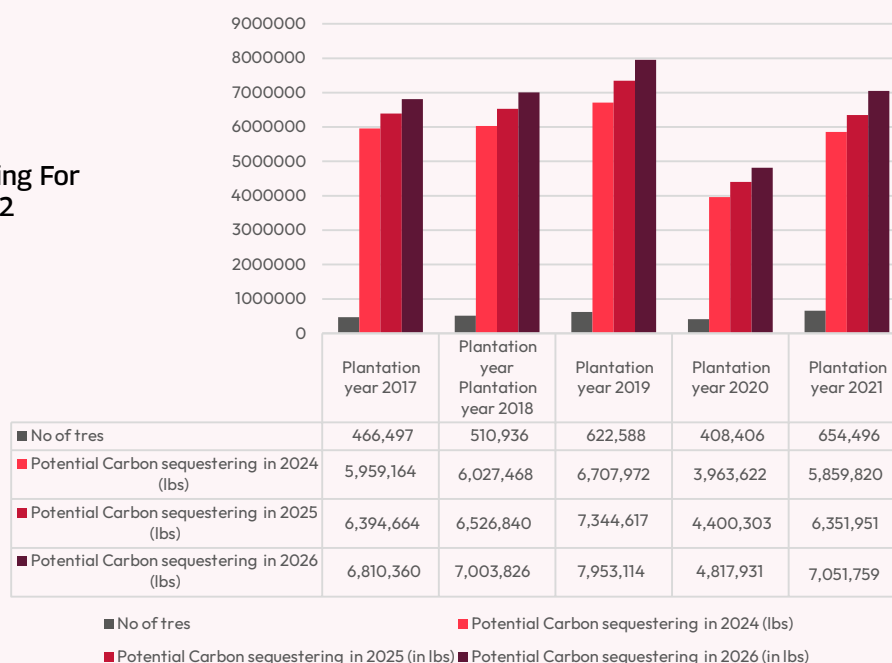
Name of village	Number of samples	Potential Carbon sequestering in 2024 (In lbs)	Potential Carbon sequestering in 2025 (in lbs)	Potential Carbon sequestering in 2026 (in lbs)
Kuthangi tadeput	151	4100	6098	8588
Gurragaruvu	140	7853	13405	19836
Kuthangi thadeput	100	1218	2394	3977
Birimisala-Paderu	50	357	803	1447
Gopulapallem	216	2117	4300	7333
Gurragaruvu	140	8297	9704	11675
Tadeput	50	1154	1784	2620
Birimisala	100	452	1273	2515



Potential Carbon Sequestering of Fruit, Forest and Shade varieties (FFS) from 2017-2022



Potential Carbon Sequestering For for Coffee Plants 2017-2022





Other Significant Social Impacts

1. Skilling of Farmers & Improvement of Farming Practices



Project Hariyali focuses on skilling the farmers. Enhanced mechanical & technical inputs and advanced farming practices have been introduced in the planting process at every stage of plantation in ITDA Paderu as a Project Hariyali Intervention.

In 2021-22, 3,420 selected farmers who planted in June to September of 2021 were provided with comprehensive training on various aspects of planting.

They were also taught about the specific needs of each species and the procedures involved in planting, such as preparing the land, digging pits, applying compost, determining the number of saplings required, and monitoring their growth.

2. Skilling of farmers for Nurseries



Project Hariyali provided regular upskilling on farming knowledge training and monitoring support for nursery owners.

In FY 21-22, a total of **11,13,456** saplings were planted in 2 mandals of **Paderu and Hukumpeta mandals of ITDA Paderu**. The pending planting which had been halted in 20-21 due to 2nd wave of COVID -19 was completed along with the planting scheduled in 21-22

From 2017, all coffee saplings planted were raised by individual farmers in their nurseries created near their houses, resulting in approximately 20,000 individual nurseries.

Annually, an average of 3 lakh coffee saplings are procured under Project Hariyali, ensuring a consistent and increased income for the nursery owners.

3. Role of Village Volunteers



Volunteers played the role of knowledge keepers and communicated with the farmers on plantation activity.

In FY 21-22, 228 village volunteers were hired for sapling distribution and planting.

Since 2017, 2,342 volunteers have been hired for various tasks for Project Hariyali. All volunteers are paid appropriately for the task that he/she is hired for.

As a part of the FY 21-22 Impact Assessment, a quantitative survey was conducted with 100 people in 3 villages of ITDA Paderu,

- **97% people agreed that the activities conducted by Project Hariyali led to an improvement knowledge about Farm Management.**
- **77% people agreed that the technical farming support received from Project Hariyali has led to an improvement in the soil quality.**
- **53% people agreed that there has been a significant improvement in the biodiversity of the farms.**
- **94% people agreed that Project Hariyali's long-term intervention in the villages has led to improved community participation and hence better ownership of the plantation activities.**
- **63% people agreed that Project Hariyali's initiative of upskilling farmers to produce better quality produce will contribute to better realization of prices for coffee and forest produce.**



Conclusion on Impact Assessment

In conclusion, Project Hariyali's initiatives have made a significant impact on the social & environment status of ITDA Paderu. The healthy survival rates of the program – 94.67 in 21-22 is a testimony of good program design.

What started as an afforestation programme in 2007, has not only been recognized for its tree planting activities – it has been recognized for Food Vision 2050 Prize by Rockefeller Foundation- but there have also been other significant positive consequences of the program which are summarized below:

Agroforestry projects have a long gestation period before sustainable impact can be documented. Project Hariyali is a long-term project with 12 years of consistent investment in tree planting. While this impact report refers to activities of 21-22, the following long-term sustainable impact indicators were observed during the qualitative stakeholder feedback-

1. Farmers discussed optimum usage of organic bio-inputs improved pruning methods, mulching of fallen leaves etc. for better tree growth.
2. Ladders are used to pluck "black pepper", whereas earlier farmers used to climb the tree or pluck with sticks.
3. The biodiversity has significantly improved in the last five years and farmers can now spot different birds like parrots & peacocks more frequently.
4. The improvement in water table has enabled better irrigation facilities for the farms compared to earlier times where the farmers depended on rain.
5. In ITDA Paderu, Podu cultivation was commonly practiced - the slash and burn method of agriculture leading to deforestation. This also resulted in soil runoff and erosion when it rained. Project Hariyali with its scientific practices, over the years has improved the cultivation practices in hilly areas resulting in reduced soil erosion.
6. Many farmers own farm equipment and vehicles like tractors, tillers etc. In addition to these, almost every house hold has access to electronic gadgets like smartphones. Tv etc.
7. Many farmers now own cattle, which not only provide milk for nutrition but also provide dung which is used as organic manure.
8. Ownership of personal vehicles like scooters & motorbikes has improved the community's access to the markets.
9. There are many women farmers in the ITDA Paderu community who are trained by Project Hariyali and are active members in the community.

Best practices

1. Afforestation projects have a long gestation period to show impact. Project Hariyali supported the afforestation program over 12 years – making it a best practice.
2. Sustainability has been woven into the program very efficiently by deeply involving and upskilling the local population. This has ensured ownership of the trees thus ensuring high survival rates.
3. Gender Empowerment – SAMTFMAC Board has demonstrated a 48% representation of women. This is commendable considering that gender equity is still a difficult metric to achieve for many societies. Project Hariyali's activities of upskilling the women farmers is a best practice contributing to gender empowerment.

Rating of CSR project



Based on the proprietary scoring algorithm, Bluesky has assessed the Mahindra Project Hariyali with a Platinum category of performance of CSR Activity. The Platinum Category of the CSR Project performance demonstrates.

- Sustainability Commitment,
- Leadership Visionary on Social Responsibility,
- Stakeholder Partnership and Multi – organizational Alliances