

An Impact Assessment Report

Executive Summary

Of

Tree Plantation Project

“Mission Million Trees”

Under BFL CSR Initiatives in Pune, Ahmadnagar, Satara
and Solapur District, Maharashtra.

Submitted to

Agricultural Development Trust, Baramati,
Shardanagar, Tal. Baramati, Dist. Pune – 413 115

Conducted by

Prof.Dr. Mahesh Thakur
Director, Karve Institute of Social Service

Md. Zaid Attar

Project Manager, CSR Cell

**CSR CELL, Karve Institute of Social Service,
18, Hillside Karvenagar, Pune-52**

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Dr.MaheshThakur
Director
KarveInstituteofSocialService(KInSS),
Pune

LIST OF ABBREVIATIONS

Abbreviation	Details
BFL	Bharat Forge Ltd
KVK	Krishi Vigyan Kendra
ADT	Agricultural Development Trust
KINSS	Karve Institute of Social Service
AGB	Above Ground Biomass
BGB	Below Ground Biomass
DBH	Diameter at Breast Height
AMB	Ambegaon Block
BMT	Baramati Block
PNR	Purandar Block
SGV	Shevgaon Block
MDH	Madha Block
KRG	Koregaon Block
STR	Satara District

ABOUT BHARAT FORGE LTD.

Bharat Forge Limited stands as a beacon of excellence in the global manufacturing landscape, renowned for its expertise in forging innovative solutions and delivering world-class products. Established in 1961, Bharat Forge has since evolved into a leading player in the automotive, industrial, and defense sectors, leveraging cutting-edge technology and engineering prowess to cater to diverse market needs.

With a robust presence across India and the world, Bharat Forge operates state-of-the-art manufacturing facilities strategically located to serve its global clientele. Among its key manufacturing plants are:

1. **Mundhwa Plant, Pune:** Situated in Pune, Maharashtra, the Mundhwa plant is one of Bharat Forge's flagship facilities, equipped with advanced forging and machining capabilities. This plant caters to the automotive, industrial, and aerospace sectors, producing high-quality forged components for diverse applications.

2. **Baramati Plant, Maharashtra:** The Baramati plant, located in Maharashtra, specializes in the production of automotive components and assemblies, serving leading OEMs in the passenger vehicle, commercial vehicle, and two-wheeler segments. This facility is renowned for its precision engineering and adherence to stringent quality standards.

3. **Ciénega de Flores Plant, Mexico:** As part of its global expansion strategy, Bharat Forge has established a manufacturing presence in Mexico, with the Ciénega de Flores plant catering to the North American market. This facility leverages Bharat Forge's expertise in forging and machining to serve customers in the automotive, aerospace, and oil & gas industries.

4. **Bhandup Plant, Mumbai:** The Bhandup plant, located in Mumbai, specializes in the production of critical components for the oil & gas, power generation, and infrastructure sectors. This facility is equipped with advanced forging and heat treatment capabilities, enabling it to meet the stringent requirements of global customers.

Driven by a relentless pursuit of excellence and a commitment to innovation, Bharat Forge continues to redefine industry standards and chart new frontiers in the world of forging and manufacturing. With a strong emphasis on quality, technology, and customer satisfaction, the company remains at the forefront of India's industrial growth story while making significant strides on the global stage.

CSR POLICY OF BHARAT FORGE LTD

Bharat Forge Ltd., a leading global manufacturer and supplier of forged components and solutions, has long been committed to corporate social responsibility (CSR) initiatives that extend beyond their business operations. Their CSR policy is rooted in the belief that businesses have a responsibility towards society and the environment, and they have undertaken various initiatives to fulfill this responsibility. Here's an overview of their CSR policy and some of the initiatives they have undertaken:

Education

- Bharat Forge places a significant emphasis on education, aiming to improve access to quality education for underprivileged children. This includes:
- Infrastructure Development-Constructing and renovating school buildings, providing educational aids and resources.
- Scholarships and Financial Aid Offering scholarships to meritorious students from economically disadvantaged backgrounds.
- Skill Development-Setting up vocational training centers to enhance employability skills among the youth.

Healthcare

- The company undertakes various healthcare initiatives to ensure better health and well-being in communities:
- Medical Camps and Health Check-ups Organizing regular health camps and check-ups in rural and underserved areas.
- Hospital Infrastructure Supporting the construction and modernization of healthcare facilities.
- Preventive Healthcare Conducting awareness programs on health, hygiene, and sanitation.

Environmental Sustainability

- Bharat Forge is committed to environmental sustainability through several initiatives:
- Afforestation and Tree Plantation- Engaging in large-scale tree plantation drives to enhance green cover.
- Water Conservation-Implementing projects for rainwater harvesting, watershed management, and promoting efficient water use.
- Waste Management Adopting sustainable waste management practices to minimize environmental impact.

Community Development

- The company engages in comprehensive community development programs aimed at improving the overall socio-economic conditions:
- Rural Development Projects- Implementing integrated rural development projects that focus on infrastructure, livelihoods, and basic amenities.
- Women Empowerment- Promoting gender equality and empowering women through education, skill development, and entrepreneurship opportunities.

Disaster Relief and Rehabilitation

- Bharat Forge actively participates in disaster relief and rehabilitation efforts:
- Emergency Relief-Providing immediate relief materials like food, water, and medical supplies during natural disasters.
- Reconstruction Activities- Supporting the reconstruction of homes, schools, and other essential infrastructure in disaster-affected areas.

Implementation and Monitoring

- Bharat Forge ensures the effective implementation of its CSR initiatives through a structured approach:
- Dedicated CSR Team- A dedicated team oversees the planning, execution, and monitoring of CSR activities.
- -Partnerships and Collaborations- Collaborating with NGOs, government bodies, and other organizations to enhance the impact of CSR initiatives.
- -Impact Assessment- Regularly assessing the impact of CSR projects to ensure they meet the desired objectives and bring about meaningful change.

Governance and Transparency

- The company maintains high standards of governance and transparency in its CSR activities:
- Board-Level Oversight- The CSR Committee of the Board of Directors provides oversight and strategic direction for CSR initiatives.
- Reporting and Accountability- Regular reporting on CSR activities and outcomes ensures accountability and transparency to stakeholders.

Bharat Forge's CSR policy underscores its commitment to social responsibility and sustainable development. By focusing on education, healthcare, environmental sustainability, community development, and disaster relief, Bharat Forge strives to make a positive and lasting impact on society. Through effective implementation and governance, the company ensures that its CSR initiatives are aligned with its core values and contribute to the broader goal of inclusive growth and development.

THE AGRICULTURAL DEVELOPMENT TRUST, BARAMATI

The Agricultural Development Trust, Baramati, is a renowned institution dedicated to promoting agricultural education, research, and rural development in India. Established in 1971 by the visionary leader, Late Padmabhushan Sharadchandraji Pawar, the trust has played a pivotal role in transforming the agricultural landscape of Baramati and its surrounding regions.

The trust operates various educational institutions, including schools, colleges, and research centers, aimed at providing quality education and training in agriculture and allied fields. These institutions offer academic programs in agriculture, agribusiness management, veterinary science, and other related disciplines, equipping students with the knowledge and skills required to excel in the agricultural sector.

In addition to education, the Agricultural Development Trust, Baramati, is actively involved in research and development activities to enhance agricultural productivity, promote sustainable farming practices, and address challenges faced by farmers. Through its research initiatives, the trust seeks to develop innovative technologies, crop varieties, and farming techniques tailored to the local agro-climatic conditions.

Furthermore, the trust is committed to rural development and empowerment, undertaking various initiatives to improve the socio-economic status of rural communities. These

initiatives include capacity building programs, skill development workshops, women empowerment initiatives, and infrastructure development projects aimed at enhancing the quality of life in rural areas.

Over the years, the Agricultural Development Trust, Baramati, has earned recognition for its contributions to agricultural development and rural empowerment, serving as a beacon of progress and prosperity in the agricultural heartland of Maharashtra. Through its multifaceted approach encompassing education, research, and community development, the trust continues to nurture a new generation of agricultural leaders and drive positive change in the agricultural sector.

KARVE INSTITUTE OF SOCIAL SERVICE (KINSS)

Karve Institute of Social Service is a renowned Institute imparting social work education in Pune since 1964. It is involved in conducting social research, training and consultancy since 1970. The Institute has been working in the field of community development, training and capacity Building Programs for various levels of government functionaries, civil society and organizations. The CSR cell of the institute endures and specializes in conducting evaluation studies, diagnostic studies and documentation activities including baseline surveys, socio economic surveys etc for Corporate; In areas such as Education, Tribal development, Participatory Management, Rural Appraisal, Micro Planning, Monitoring, Impact Assessment, Capacity Building, Survey, sampling, Poverty ,vulnerability analysis, Gender issue analysis, and rural development.

The CSR cell works with the Vision as ‘Build an inclusive and Labour active social ecosystem for social development through CSR’, and Mission as “To promote CSR Excellence for sustainable development and edify corporate, non-Government, Civil Society and Local Self Government Organizations on CSR dimensions”. The cell has conducted the Socio-Economic survey of Pune city with reference to 1987 Development Plan. Karve Institute believes that only sustainable partnership and strategic alliances between business, local government, local communities & non-profit organizations can bring about Social development. CSR for Karve Institute is Corporate Social Relation, it believes in symbiotic relationship between different social machinery operating within the society, as none of them can exist in isolation nor can sustain without mutual development. Karve Institute of Social Service has been honoured to be the choice of institute for conducting the said survey for FIAT through its Bhaskar Dhondo Karve Research and Consultancy Cell.

OBJECTIVES OF CSR CELL

- To provide advice on CSR policy and recommendations on the formulation of strategies for the corporate to prepare the blue print of CSR for sustainable development
- To offer research, training, capacity building, advocacy, monitoring, recognition and related support services in the field of CSR.
- To conduct the base line survey, need assessment and impact assessment survey for CSR projects.

- To empanel the Non-Government and Civil Society Organizations for Corporate to develop partnership project and establish a database of credible civil society organization.
- To implement, monitor and evaluate CSR projects.
- To facilitate assistance directly or indirectly for activities which seek to promote CSR practices including research and training.
- To provide consultancy, technical and managerial support to the beneficiaries of the CSR Cell programs through a network of advisors drawn from the industry and institutions of excellence.
- To function as a recognized accreditation or third-party assessment agency, to seek necessary approvals and facilitate organizations for mandatory compliances.
- To facilitate network, organize conference, seminars, workshops, conduct trainings and CSR course modules.

CSR ACTIVITIES FOR CORPORATES

- Conduct baseline, need and impact assessment surveys
- Projects' identification and development in sync with the stated CSR Policy
- Formulating CSR strategy and policy.
- Formation and governance of the CSR Committee of the Board and its Orientation on CSR.
- Developing a CSR Policy in sync with the core values of the organization and advising on establishing its governance parameters.
- CSR Team and capacity building.
- Developing reporting mechanisms.
- Developing implementation guidelines & processes.
- Identifying NGOs as implementation partners; their appropriate capacity building; assisting them in project development etc.
- Setting up monitoring & evaluation systems and processes and conduct M&E CSR projects.
- Audit and Impact assessment of Projects
- Designing and conducting customized trainings for the CSR team and program Managers.
- Conceptualizing and facilitating employee engagement projects

EXECUTIVE SUMMARY

MISSION MILLION TREES

This executive summary provides an overview of the "**Mission Million Trees**" project, implemented by Agriculture Development Trust Baramati, funded by Bharat Forge Ltd's CSR initiative, and assessed by Karve Institute of Social Service. The project aims to significantly enhance environmental sustainability and community well-being through extensive tree plantation efforts.

INTRODUCTION

"Mission Million Trees" is an ambitious tree plantation project aimed at planting one million trees to combat climate change, enhance biodiversity, and improve the quality of life in the region. The project is a testament to Bharat Forge Ltd's commitment to CSR and sustainable development. ADT has approached BFL for financial support to carry out the project "Mission Million Trees". As a part of BFL's corporate social responsibility ("CSR") initiative, BFL has agreed to support ADT for the Project. "**MISSION MILLION TREES**" Considering the overall importance of the changing climatic scenario & the future aspects, an MoU was signed between Bharat Forge Ltd., Pune & Agricultural Development Trust, Baramati for the Tree Plantation Project as a CSR activity to benefit the farming community and achieve the Sustainable Development Goals.

OBJECTIVES

The primary objectives of the project include:

1. To improve the quality of the natural environment.
2. To aware local community, school children on the criticality of climate change and aware them about how tree plantation can make a real difference.
3. To utilize barren lands for tree plantation to improve soil and water conservation.
4. To improve water quality in local streams and ponds.
5. To protect groundwater supplies.
6. To reduce the damage to land caused by erosion, floods, landslides and other effects of ecological imbalance.
7. To conserve the ecosystem.

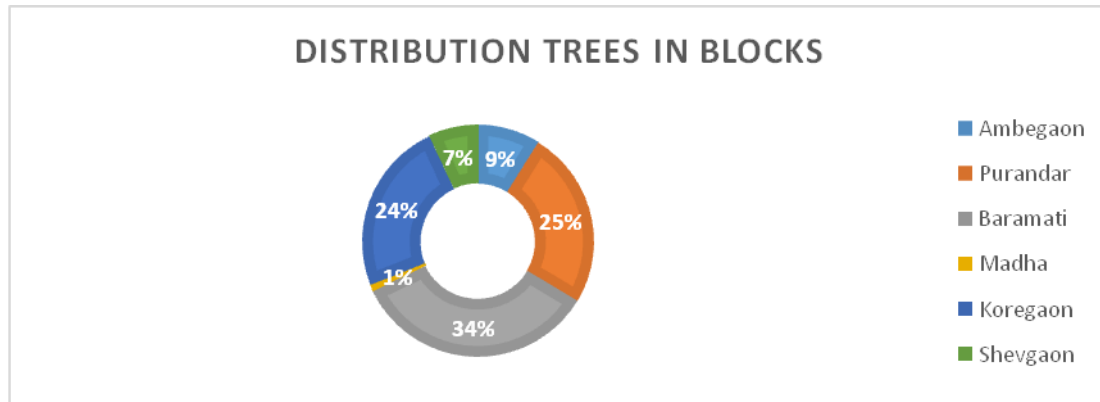
KEY INITIATIVES

Key initiatives under the project include:

Tree Plantation-Planting a diverse range of native tree species across identified regions in Pune, Satara, Ahmadnagar and Solapur District of Maharashtra.

Community Engagement: Conducting awareness programs and involving local communities in planting and maintenance activities.

Sustainability Measures: Ensuring the survival and growth of planted trees through proper maintenance, irrigation, and protection measures.



IMPACT AND OUTCOMES

The "Mission Million Trees" project has achieved significant outcomes with overall survival rate of **85.48%**

Environmental Impact: Total **100,000** trees planted, sequestering an estimated **173.87** tons of CO2 in the first year & potential of sequestering **4,156.41 Metric ton in the fifth year.**

Land Restoration and Draught resilience: Restoration of **768,384 (Seven Lakh sixty-eight thousand three hundred eighty-four)** square feet of land. Which will definitely benefit hugely to the environment and have tremendous potential in draught resilience

Biodiversity Enhancement: Creation of new habitats and increased biodiversity in the planted areas. The newly planted saplings are beneficial for butterflies' life cycle, honeybees and nectar eating birds, also the plants will provide habitat and food to a large amount of fauna.

Community Benefits and Economic Benefits: Engaged over 5,000 community members, providing direct and indirect employment opportunities. Also the fruit trees like mango will definitely provide earning opportunities to a large number of farmers.

Stakeholder Engagement: The project involved extensive stakeholder engagement, including partnerships with local schools, community groups, and government bodies. Regular meetings, workshops, and awareness campaigns were conducted to ensure community involvement and support.

Challenges and Lessons Learned: The project faced challenges such as adverse weather conditions and logistical issues. Key lessons learned include the importance of selecting the right tree species, ensuring community buy-in, and implementing robust maintenance plans to ensure tree survival.

MAJOR FINDINGS

Major findings reflect the transformative impact of the "Mission Million Trees" project, not only in terms of environmental sustainability but also in empowering local communities and fostering economic growth. By addressing challenges through adaptive strategies and focusing on continuous improvement, the project sets a strong foundation for future expansion and long-term success. "Mission Million Trees" project will contribute to sustainable agricultural development, enhanced livelihoods, and environmental conservation which align with the Sustainable Development Goals (SDGs).

Based on the findings from the "Mission Million Trees" project, the following findings are concluded which suggests the benefits and ensuring the sustainability of the project:

1. Environmental Impact:

Total **100,000** trees planted, sequestering an estimated **173.87** tons of CO₂ in the first year & potential of sequestering **4,156.41 Metric ton in the fifth year**. Restoration of **768,384 (Seven 1.1 Lakh sixty-eight thousand three hundred eighty-four)** square feet of land. Which will definitely benefit hugely to the environment and have tremendous potential in draught resilience

1.2 High Survival Rates in Most Districts:

1.3 Highest Survival Rate: Ambegaon (Pune) and Shevgaon (Ahmednagar) both have high survival rates of 95% and 90% respectively. Ambegaon (Pune) also observed 'Very Good' growth with a minimal death percent of 5%. This suggests successful adaptation of trees to local environmental conditions and effective maintenance practices.

1.4 Lowest Survival Rate: Madha (Solapur) has the lowest survival rate of 70% with 'Satisfactory' growth and the highest death percent of 30%.

1.5 Highest Number of Trees: Baramati (Pune) has the highest number of total trees at 34,312, with a good survival rate of 90% and a death percent of 10%.

1.6 Overall Survival Rate: 85.48%

1.7 Challenges in Specific Regions:

Solapur (Madha) and Satara (Koregaon, Khatav, Man) faced challenges, with lower survival rates of 70% and 75%, respectively, and higher death rates of 30% and 25%. These areas experienced only "Satisfactory" growth, indicating possible with soil quality, water availability, or maintenance practices. In Some regions of Satara and Solapur Districts, faced logistical challenges and adverse weather conditions that impacted tree survival and growth rates.

1.8 Climate action:

The project has contributed significantly to environmental sustainability by planting over 100,000 trees, sequestering substantial amounts of CO₂ (reducing soil erosion, and improving air quality in the regions.

Total estimated Carbon Sequestration done in first year is minimum **173.87 Metric tons**

Total estimated Carbon Sequestration Capacity in 5th Year is **4,156.41 Metric tons**

A total of **768,384 (Seven Lakh sixty-eight thousand three hundred eighty-four)** square feet of land is restored.

2. Community empowerment, quality education, Enhanced Training and Capacity Building (SDG 4: Quality Education):

2.1 Community Empowerment and Capacity Building: The project successfully trained and empowered local farmers, enhancing their skills in fruit tree cultivation, pest management, and sustainable agricultural practices. This has led to improved livelihoods and increased agricultural productivity in the region. Moreover, The project successfully engaged over 5,000 community members across various regions, creating 500 direct and indirect employment opportunities. This highlights the social benefits of the project, fostering community participation and economic development.

2.2 Farmer quality Education and capacity building: The project highlighted the need for selecting appropriate tree species and implementing robust maintenance plans. Continuous monitoring and adaptive management practices have been identified as critical for sustaining the project's long-term success. Based on that developed comprehensive training programs for farmers on best practices for planting, maintaining and harvesting fruit trees. This includes advanced training in pest management, pruning techniques, and post-harvest handling, specifically addressing the demand from advanced-level farmers. Established technical assistance cell to offer ongoing support to farmers, helping them address challenges in fruit tree cultivation.

2.3 Market Linkages: Facilitated the development of market linkages to help farmers sell their produce at competitive prices. This includes connecting farmers with local markets, wholesalers, and export opportunities.

2.4 Value Addition: Encouraged and supported farmers to engage in value addition activities, such as processing fruits into juices, jams, and dried products, to increase their income.

2.5 Economic Growth and Market Development: Establishing market linkages and encouraging value addition activities have enabled farmers to access better markets and earn higher incomes. This economic upliftment is a testament to the project's positive impact on rural economies.

3. Diversification and Selection of Fruit Tree Species (SDG 2: Zero Hunger and SDG 13: Climate Action):

3.1 Biodiversity enhancement and conservation:

The diverse range of native tree species (33) planted has created new habitats and increased biodiversity in the planted areas, contributing to ecological balance and resilience. By promoting the planting of diverse fruit tree species, the project has contributed to increased biodiversity, improved soil health, and greater resilience against climate change and pests. This aligns with broader environmental conservation goals.

Total 33 different plants selected for plantation. The data underscores the critical role of diverse tree species in mitigating climate change through carbon storage. Trees like the banyan (*Ficus benghalensis*), neem (*Azadirachta indica*), and teak (*Tectona grandis*) demonstrate considerable carbon sequestration potential, benefiting the environment by reducing atmospheric CO₂ levels. The total carbon sequestration by these species collectively amounts to **173,874.71 kg** in first year and **4,156,406 kg** in fifth year, showcasing their significant contribution to environmental sustainability and the fight against climate change.

Total Mango plantation is 45765 This large amount of Mango plantation is highly beneficial for the butterflies, Birds (Including territorial birds, raptors, owls, migrants) Mango plantations play a vital role in supporting butterfly populations by providing food, shelter, and breeding sites, thus contributing to the biodiversity and ecological balance of

the surrounding areas. Mango plantations can be highly beneficial to butterflies, Honeybees, Birds and Overall biodiversity in several ways

4. Strengthening Community Engagement (SDG 17: Partnerships for the Goals):

4.1 Community Participation: Continued to involve local communities in all stages of the project to ensure their active participation and ownership, including planning, implementation, and monitoring.

4.2 Efficient Resource Use: The implementation of efficient irrigation systems, such as drip irrigation, has optimized water use, resulting in better tree growth and yields. This is particularly significant in regions facing water scarcity.

4.3 Peace justice and strong institution:

Collaboration with local schools, community groups, and government bodies proved essential for the project's success. Regular stakeholder meetings, workshops, and awareness campaigns ensured broad-based support and active participation. Wagholi Grapmanchayat in Shevgaon block of Nagar District consecutively won **'MAJHI VADUNDHARA ABHIYAN'** for 2 years.

4.4 Strengthened Community Engagement: Ongoing involvement of local communities in planning, implementation, and monitoring has fostered a sense of ownership and active participation, ensuring the project's sustainability and success.

4.5 Learning and Adaptation: The project highlighted the need for selecting appropriate tree species and implementing robust maintenance plans. Continuous monitoring and adaptive management practices have been identified as critical for sustaining the project's long-term success.

4.6 Farmer Education: Developed comprehensive training programs for farmers on best practices for planting, maintaining, and harvesting fruit trees. This should include advanced training in pest management, pruning techniques, and post-harvest handling, specifically addressing the demand from advanced-level farmers

5. Market Development and Access (SDG 8: Decent Work and Economic Growth and SDG 8):

5.1 Perennial Income Source: Unlike seasonal crops, fruit trees provide a perennial income source once they reach maturity, offering long-term financial stability to farmers.

5.2 Sustainable Agriculture: The long-term nature of fruit tree cultivation encourages sustainable agricultural practices, ensuring that farmers can maintain their livelihoods over extended periods.

5.3 Harvesting Fruit: Fruit trees offer an additional source of income through the sale of fruits. Farmers can sell fresh fruits at local markets or to wholesalers, providing a steady revenue stream.

5.4 Value-Added Products: Farmers can process fruits into value-added products such as jams, juices, and dried fruits, which can be sold at higher prices, increasing their profit margins.

The above mentioned recommendations concludes that "Mission Million Trees" project, maximize benefits and ensure sustainability in alignment with the Sustainable Development Goals (SDGs).Based on the project's success, there is significant potential for future expansion into new regions. Plans are underway to replant dead trees and reach the million-tree target, promising even greater environmental and socio-economic benefits.

RECOMMENDATIONS

Based on the findings from the "Mission Million Trees" project, the following recommendations are suggested to maximize the benefits and ensure the sustainability of the project:

1. Enhanced Training and Capacity Building:

Farmer Education: Develop comprehensive training programs for farmers on the best practices for planting, maintaining, and harvesting fruit trees. This should include pest management, pruning techniques, and post-harvest handling on advance level farmers from Ambegaon Block demand advanced level training.

Technical Assistance Cell: Develop Technical Assistance Cell Offer ongoing technical support to farmers to help them address any challenges they encounter in fruit tree cultivation.

2. Diversification and Selection of Fruit Tree Species:

Species Diversity: Encourage the planting of a diverse range of fruit tree species to reduce risk and increase resilience against pests, diseases, and climate variability.

Local Adaptation: Select fruit tree species that are well-adapted to local climatic and soil conditions to ensure higher productivity rates.

3. Improved Irrigation and Water Management:

Efficient Irrigation Systems: Implement efficient irrigation systems such as drip irrigation to ensure optimal water use and improve tree growth and yield specifically for South region of Koregaon Block.

4. Market Development and Access:

Market Linkages: Facilitate the development of market linkages to help farmers sell their produce at competitive prices. This can include connecting farmers with local markets, wholesalers, and export opportunities.

Value Addition: Encourage and support farmers to engage in value addition activities such as processing fruits into juices, jams, and dried products to increase their income.

5. Strengthening Community Engagement:

Community Participation: Continue to involve local communities in all stages of the project to ensure their active participation and ownership. This includes planning, implementation, and monitoring.

Awareness Campaigns: Conduct awareness campaigns to educate communities about the environmental and economic benefits of tree planting and conservation.

8. Sustainable Practices and Agroforestry:

Agroforestry Systems: Support agroforestry systems that integrate fruit trees with other crops and livestock to enhance biodiversity, improve soil health, and increase farm productivity.

Sustainable Agriculture: Encourage sustainable agricultural practices such as organic farming, crop rotation, and cover cropping to complement fruit tree cultivation.

10. Climate Resilience and Adaptation:

Climate-Smart Practices: Implement climate-smart agricultural practices to enhance the resilience of fruit trees to climate change impacts.

Disaster Risk Reduction: Develop and implement disaster risk reduction strategies to protect fruit trees from extreme weather events.

By implementing these recommendations, the "Mission Million Trees" project can further enhance its impact, ensuring long-term environmental sustainability, economic benefits for farmers, and overall community well-being.

Conclusion:

"Mission Million Trees" has made a substantial impact on environmental sustainability and community development. The project exemplifies the power of collaborative efforts in achieving large-scale ecological benefits. Bharat Forge Ltd, through its CSR initiative, and Agriculture Development Trust Baramati, remain committed to driving positive change and fostering a greener future.

This executive summary captures the essential elements of the "Mission Million Trees" project, providing a clear and concise overview of its objectives, initiatives, and Impacts.

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