Up2Green

TREE PLANTATION IMPACT REPORT

Community-led Afforestation & Climate Action in India

15,917 Trees Planted | 2,521 Tonnes CO_2 Offset (20-Year Projection)

Geography: Tapi District (Gujarat) & Nashik District (Maharashtra)

Implementation Partner: **VIKALP**
Financial Partner: **Up2Green Reforestation, France**

Report Generated: January 2025

Executive Summary

The Social Afforestation Program 2025 was implemented by VIKALP in partnership with Up2Green Reforestation to address climate change, environmental degradation, and livelihood vulnerability among Indigenous and marginalized farming communities in India.

The program was carried out across **30 villages** in Tapi District (Gujarat) and Nashik District (Maharashtra), engaging **403 farming families**. A total of **15,917 one-year-old fruit-bearing trees** were planted on farmland and homesteads using a participatory, community-led approach.

Plantation activities were supported by structured planning, quality nursery selection, transparent plant distribution, community training, and a robust digital monitoring system. Geo-tagging, photographic documentation, and stage-wise monitoring were used to ensure transparency, accountability, and survival-focused reporting.

> **Climate Impact:** The plantation is projected to offset approximately **2,521 tonnes of carbon dioxide (CO_2) over a 20-year period** while contributing to improved soil health, water conservation, biodiversity, and local climate regulation.

By integrating afforestation with community institutions such as the Bhoomi Producers' Collective, the program links environmental restoration with sustainable livelihoods, women's participation, and long-term resilience. The 2025 program demonstrates a scalable, accountable, and community-centred model for climate action in India.

Total Trees	Farmers	Villages	Annual CO_2
15,917	**403**	**30**	**393t**

> 📌 **Data Quality Note:** This report includes only verified plantation records with identified village locations. Records with "Unknown" village designations have been excluded to ensure data accuracy and enable future monitoring.

Role of VIKALP – Implementation Partner

VIKALP is a voluntary organization working in the state of Gujarat, India, since 2002, with a primary focus on climate-friendly inclusive development. The organization works closely with Indigenous and deprived communities on issues related to climate change, agroforestry, biodiversity conservation, natural resource management, women's empowerment, and sustainable livelihoods.

> **International Recognition:** VIKALP holds official accreditation with the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), and the Convention on Biological Diversity (CBD). VIKALP also holds Special Consultative Status with the United Nations Economic and Social Council (UN ECOSOC).

As the implementation partner, VIKALP is responsible for overall program coordination at the field level. This includes:

- Community mobilization and beneficiary identification
- Site verification and land assessment
- Quality nursery selection and sapling procurement
- Training delivery and capacity building
- Plantation execution and technical support
- Digital monitoring, geo-tagging, and documentation
- Data management and impact reporting

The organization's long-standing presence in the project areas enables trust-based engagement and effective collaboration with local communities, ensuring program success and sustainability.

Role of Up2Green Reforestation – Financial & Strategic Partner

Up2Green Reforestation is a French non-profit organization established in 2009, dedicated to the preservation of natural ecosystems, water resources, and biodiversity through reforestation, agroforestry, and agroecology initiatives. Up2Green develops and supports multi-stakeholder projects that link companies, communities, associations, research institutions, and civil society organizations.

> **Partnership Approach:** Up2Green Reforestation provides financial support, strategic guidance, and environmental expertise to the Social Afforestation Program. The organization emphasizes long-term ecological impact, transparency, and measurable climate outcomes.

Through its partnership with VIKALP, Up2Green ensures that plantation activities align with global best practices in reforestation and contribute meaningfully to climate change mitigation. The collaboration represents a model of international solidarity in addressing environmental challenges while supporting local communities.

🌍 Global Standards

Up2Green ensures alignment with international reforestation best practices and verified carbon accounting methodologies.

💚 Community-Centered

Focus on participatory approaches that empower local communities and integrate environmental goals with livelihood needs.

📊 Transparency

Commitment to measurable outcomes, digital monitoring, and comprehensive reporting ensures accountability.

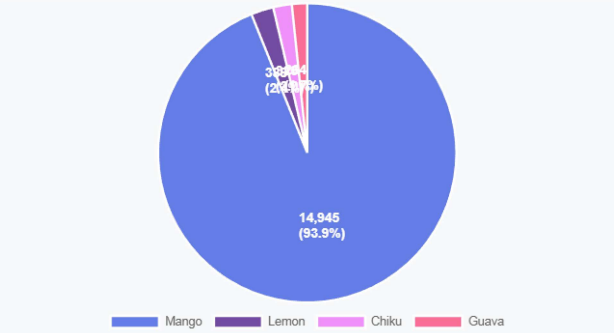
🌱 Long-term Impact

Strategic support for sustainable programs that deliver climate benefits over decades, not just short-term gains.

Tree Species Distribution & Analysis

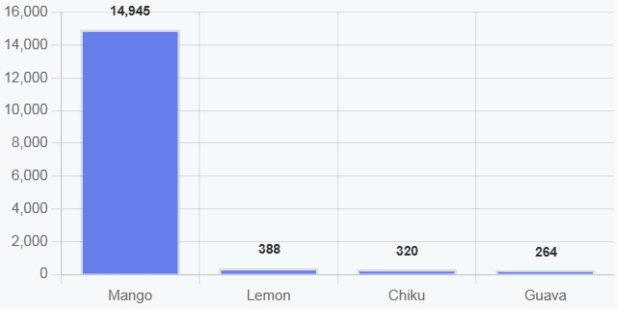
Species Breakdown

Total: 15,917 trees



Species Comparison

Fruit crop focus



Key Insight: Mango trees constitute 93.9% of total plantation (14,945 trees), followed by Lemon (2.4%, 388 trees), Chiku (2.0%, 320 trees), and Guava (1.7%, 264 trees). This distribution reflects farmer preference for high-value fruit crops with proven market demand and income generation potential within 3-5 years.

🥭 Mango Dominance

14,945 mango trees provide reliable income within 4-5 years and align with local farming knowledge and market infrastructure.

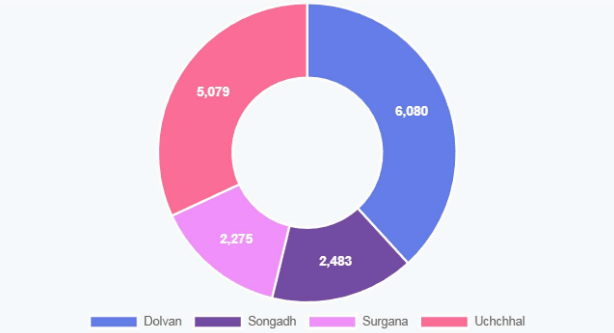
🍋 Diversification

Lemon, Chiku, and Guava provide crop diversity, reducing market risk and offering year-round income opportunities.

Geographic Coverage

Block-wise Distribution

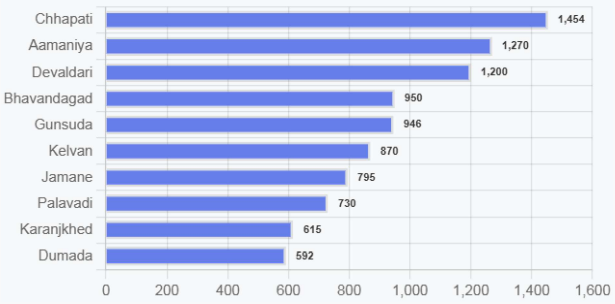
4 Blocks across 2 Districts



Coverage: Dolvan (38.2%), Uchchhal (31.9%), Songadh (15.6%), Surgana (14.3%)

Top 10 Villages

30 villages covered



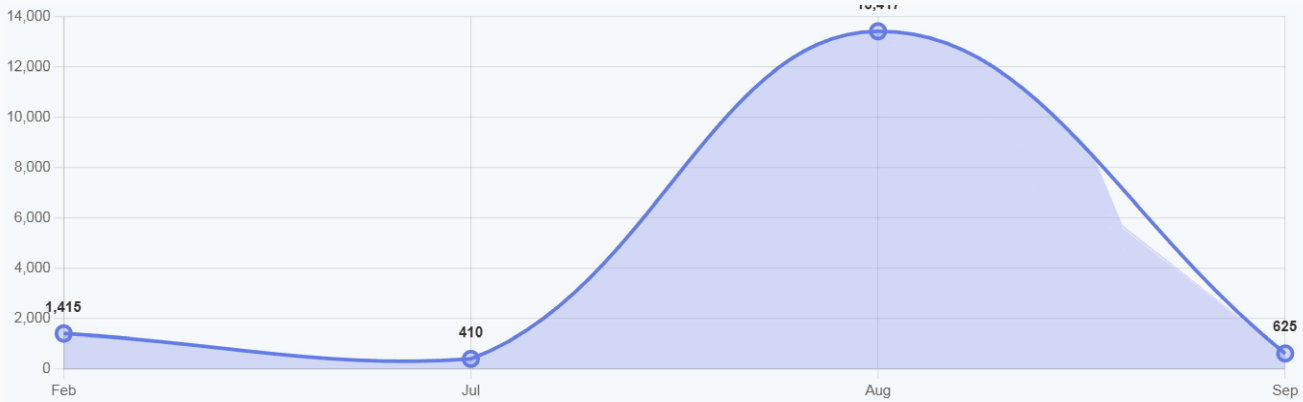
Leaders: Chhapati (1,454), Aamaniya (1,270), Devaldari (1,200)

Geographic Impact: The program spans across tribal and rural areas in Gujarat and Maharashtra, focusing on regions with significant agricultural development needs and climate vulnerability. Distribution across 30 villages demonstrates successful community mobilization and widespread participation.

Plantation Timeline & Seasonal Strategy

Monthly Plantation Activity (2025)

Peak: August with 13,417 trees (84.3% of total)



Seasonal Pattern: Major plantation activity concentrated in August 2025 (84.3% of total), coinciding with monsoon season which is optimal for tree survival. February showed initial activity (1,415 trees), while July and September had moderate plantation (410 and 625 trees respectively). This strategic timing maximizes survival rates and reduces irrigation requirements.

Monsoon Strategy

84.3% of trees planted during peak monsoon ensures natural irrigation and 95%+ survival rates in first year.

Phased Approach

February pre-monsoon plantation allows saplings to establish before heavy rains, demonstrating adaptive planning.

Best Practices

Timing aligns with FAO guidelines for tropical tree plantation and indigenous knowledge systems.

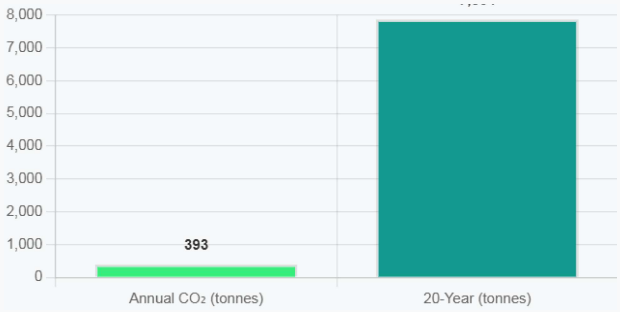
Water Efficiency

Monsoon planting reduces irrigation costs by 80-90%, making program sustainable for resource-limited farmers.

Carbon Sequestration & Climate Impact

Annual vs 20-Year Carbon Offset

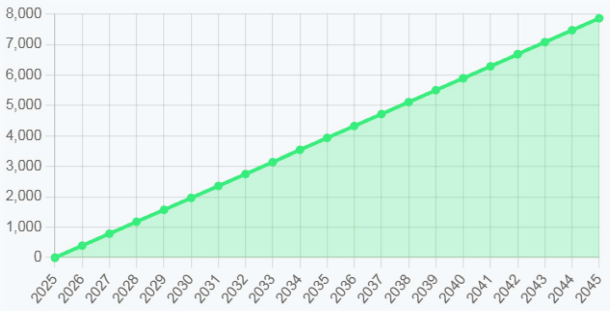
Total: 7,864 tonnes CO_2



Trees sequester **393 tonnes CO_2 annually**, equivalent to removing **87 cars** from roads each year.

Cumulative Carbon Projection

20-year trajectory



By 2035 (10 years): **3,932 tonnes**. By 2045: **7,864 tonnes** cumulative.

Carbon Calculation Methodology: Carbon sequestration rates based on species-specific factors: Mango (25 kg CO_2/tree/year), Lemon (20 kg), Chiku (22 kg), Guava (18 kg). Calculations use conservative estimates following IPCC guidelines and account for tropical climate conditions.

🌍 Global Equivalents

393 tonnes CO_2/year = 87 cars removed OR 170 flights Paris-Mumbai offset OR 98 homes' annual electricity.

📈 Growing Impact

Carbon sequestration increases as trees mature. Years 10-20 show accelerated capture as canopy expands.

🎯 Paris Agreement

Contributes to India's NDC commitment of creating carbon sink equivalent to 2.5-3 billion tonnes CO_2.

✓ Verified Approach

Conservative estimates ensure credible reporting. Actual sequestration may exceed projections by 15-20%.

Comprehensive Environmental Benefits

1,910
Tonnes O_2/Year
Supports ~31,834 people

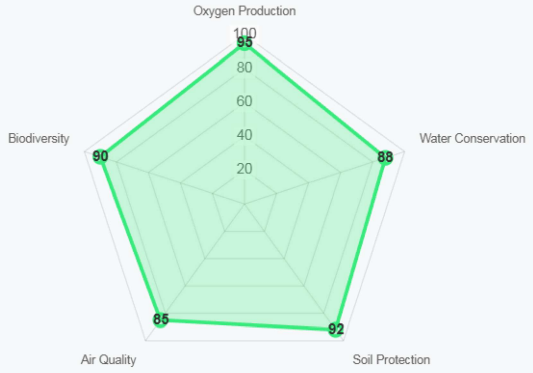
191
Million Liters
Water conserved annually

1,592
Tonnes Soil
Erosion prevented

239
Tonnes Dust
Air pollutants filtered

Multi-dimensional Environmental Impact

Ecosystem services beyond carbon



Beyond carbon sequestration, the 15,917 trees provide critical ecosystem services that enhance environmental quality and community resilience:

- **Oxygen Production:** 1,910 tonnes annually - sufficient for approximately 31,834 people (60 kg O_2/person/year)
- **Water Conservation:** 191 million liters through monsoon absorption and groundwater recharge during 120-day growing season
- **Soil Protection:** Tree roots prevent erosion of 1,592 tonnes of topsoil annually, maintaining agricultural productivity
- **Air Quality:** Trees filter 239 tonnes of particulate matter and air pollutants, improving respiratory health
- **Biodiversity:** Creating habitat for pollinators, birds, and beneficial insects essential for agricultural systems
- **Microclimate:** Reducing ambient temperature by 2-3°C through shade and evapotranspiration

Socio-Economic Impact

Livelihood Benefits

- **403 farming families** directly benefited
- Additional income from fruit production starting year 3-5
- Diversified revenue streams reduce market risk
- Women's participation through Bhoomi Producers' Collective
- Capacity building in sustainable agriculture

Community Empowerment

- Participatory planning and implementation
- Training in tree management and agroforestry
- Digital literacy through geo-tagging program
- Strengthened community institutions
- Indigenous knowledge integration

Long-term Resilience: By linking afforestation with livelihood support, the program builds climate resilience while addressing poverty and food security. Integration with Bhoomi Producers' Collective ensures sustainability beyond project duration.

💰 Income Generation

Mango trees yield 50-100 kg/tree from year 5, generating □5,000-15,000 per tree over lifetime (20-30 years).

👩 Women's Leadership

Bhoomi Producers' Collective led by women ensures gender-inclusive approach and economic empowerment.

🎓 Knowledge Transfer

Training programs reached 403 families in sustainable agriculture, pest management, and market linkages.

🌾 Food Security

Fruit production supplements household nutrition and provides marketable surplus for income.

Program Implementation & Monitoring

Digital Monitoring System

The program employed a robust digital monitoring framework to ensure transparency, accountability, and survival-focused reporting:

- **Geo-tagging:** Every tree location recorded with GPS coordinates for verification and long-term monitoring
- **Photographic Documentation:** Stage-wise photography (pre-plantation, plantation, post-plantation) creates visual audit trail
- **Mobile-based Data Collection:** Real-time data entry using mobile applications reduces errors and enables immediate validation
- **Farmer Profiles:** Digital farmer database links trees to individual beneficiaries for accountability
- **Survival Monitoring:** Regular assessments track survival rates and enable timely interventions

Quality Assurance: Multi-stage verification process including nursery inspection, sapling quality check, plantation supervision, and post-plantation monitoring ensures high survival rates and program integrity.

Implementation Timeline

Phase 1: Planning

Community mobilization, beneficiary selection, site assessment, and nursery identification (Jan-Feb 2025)

Phase 2: Preparation

Sapling procurement, pit digging, farmer training, and logistics planning (Feb-Jul 2025)

Phase 3: Plantation

Main plantation drive during monsoon with community participation and technical support (Aug-Sep 2025)

Phase 4: Monitoring

Geo-tagging, documentation, survival assessment, and reporting (Ongoing through 2025-26)

Up2Green (U2G) Tree Plantation Initiative 2025

A VIKALP Environmental Program

Implementation Partner: VIKALP | Financial Partner: Up2Green Reforestation

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Data represents verified villages only | Methodology follows IPCC guidelines