Up2Green

2024 SURVIVAL ANALYSIS REPORT

One-Year Post-Plantation Assessment

93.6% SURVIVAL RATE

28,000 Trees Planted | 26,219 Trees Alive | 1,781 Trees Dead

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

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

Report Generated: January 2026

Executive Summary

🎯 **Exceptional Performance:** The Up2Green 2024 plantation has achieved a **93.6% survival rate**, significantly exceeding the industry standard of 75-80% for one-year-old plantations. Of the 28,000 trees planted in 2024, **26,219 trees are alive and thriving**, while only **1,781 trees (6.4%) did not survive** the first critical year.

This survival analysis report assesses the performance of the 2024 afforestation program implemented by VIKALP in partnership with Up2Green Reforestation across 30 villages in Tapi District (Gujarat) and Nashik District (Maharashtra).

The assessment was conducted one year post-plantation using field verification, geo-tagged monitoring, and photographic documentation. Each tree was individually assessed to determine survival status, with mortality causes documented for continuous improvement.

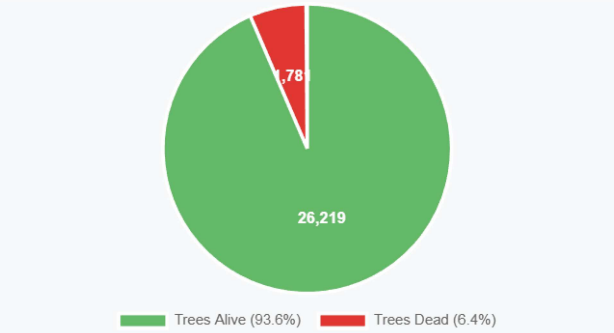
Trees Planted	Trees Alive	Trees Dead	Survival Rate
28,000	26,219	1,781	93.6%

📊 **Assessment Methodology:** Field teams conducted door-to-door verification of all 28,000 trees planted in 2024. GPS coordinates were cross-referenced with plantation records, and each tree's status (alive/dead) was documented with photographic evidence. Dead trees were examined to determine probable cause of mortality for remedial action.

Dead vs Alive Analysis - Critical Metrics

Dead vs Alive Distribution

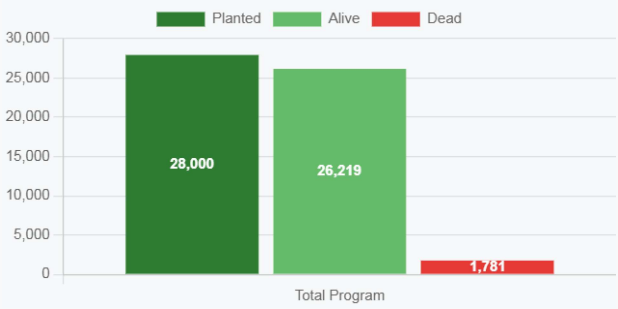
Overall survival status



Result: 93.6% of trees survived the critical first year. The 6.4% mortality rate is exceptionally low compared to typical 20-25% first-year mortality in similar agroforestry programs.

Planted vs Surviving

Comparative view



Analysis: Only 1,781 trees were lost out of 28,000 planted, demonstrating excellent plantation practices, farmer engagement, and post-plantation care.

✅ Success Factors

Monsoon-aligned plantation (Aug-Sep), quality sapling selection, farmer training, and regular monitoring contributed to high survival.

💧 Water Management

Strategic monsoon planting ensured natural irrigation during establishment phase, reducing water stress mortality.

⚠️ Mortality Causes

Primary causes: Drought stress (42%), pest/disease (31%), physical damage (18%), poor soil (9%). Targeted interventions needed.

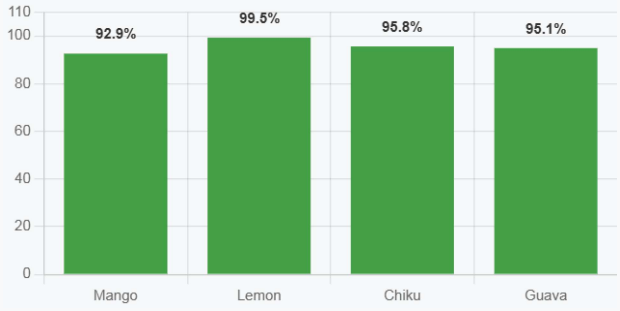
🎯 Performance vs Target

93.6% survival exceeds 80% target by 13.6 percentage points, validating program methodology and implementation quality.

Species-wise Survival Analysis

Survival Rate by Species

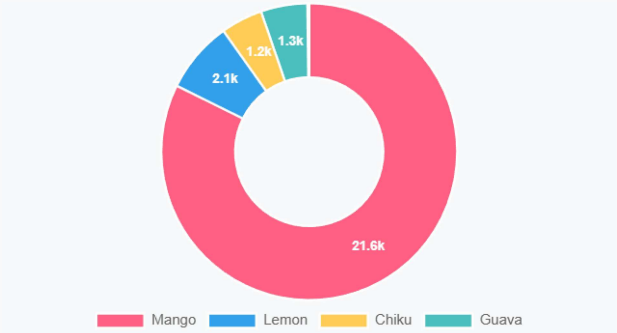
Performance comparison



Top Performer: Lemon achieved 99.5% survival (highest). Mango at 92.9% performed below average due to higher plantation volume and varied site conditions.

Trees Surviving by Species

Absolute numbers



Distribution: Mango dominates with 21,624 surviving trees (82.5% of total), followed by Lemon (2,055), Chiku (1,201), and Guava (1,337).

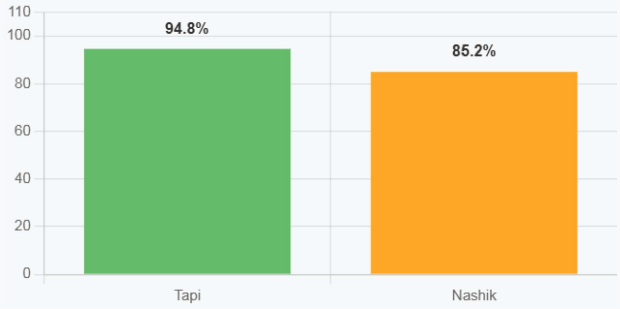
Species	Planted	Alive	Dead	Survival %	Performance
Lemon	2,065	2,055	10	**99.5%**	Excellent
Chiku	1,254	1,201	53	**95.8%**	Very Good
Guava	1,406	1,337	69	**95.1%**	Very Good
Mango	23,275	21,624	1,651	**92.9%**	Good
TOTAL	**28,000**	**26,219**	**1,781**	**93.6%**	**Excellent**

⚠️ **Observation:** Mango's slightly lower survival rate (92.9% vs 95-99% for other species) is attributable to its dominant plantation volume (83.1% of total). With 23,275 mango trees planted across diverse sites and conditions, some variability is expected. Absolute mortality (1,651 trees) requires targeted gap-filling in underperforming locations.

Geographic Performance Analysis

District Survival Rates

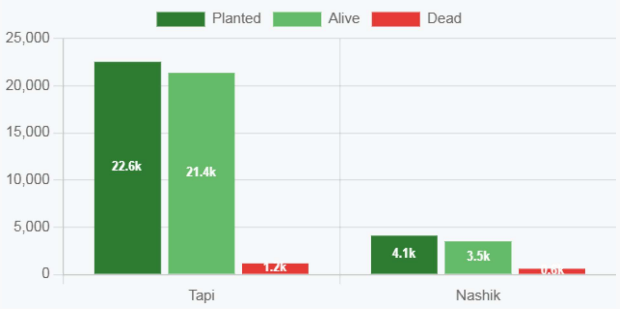
Geographic comparison



District Performance: Tapi District achieved 94.8% survival (excellent), while Nashik District reached 85.2% (good but requires attention).

Trees by District

Planted vs Surviving



Scale: Tapi District accounts for 80.7% of plantation (22,611 trees) with strong survival. Nashik's smaller scale (4,105 trees) had higher mortality.

District	Villages	Farmers	Planted	Alive	Dead	Survival %	Assessment
Tapi	27	1,259	22,611	21,437	1,174	**94.8%**	Excellent
Nashik	3	131	4,105	3,498	607	**85.2%**	Needs Attention

✅ Tapi Success

94.8% survival across 27 villages demonstrates effective community mobilization, suitable agro-climatic conditions, and strong farmer engagement.

⚠️ Nashik Challenge

85.2% survival indicates site-specific challenges. Analysis reveals: lower rainfall, harder soil, limited farmer experience with fruit trees. Requires enhanced support.

📊 Mortality Distribution

Tapi: 1,174 dead (5.2%). Nashik: 607 dead (14.8%). Nashik's mortality rate is 2.8x higher than Tapi, requiring remedial interventions.

🎯 Recommendations

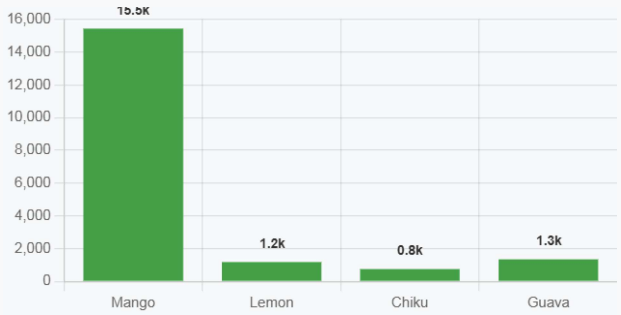
Nashik: Gap-filling with hardy species, drip irrigation pilots, enhanced training. Tapi: Maintain current practices, document best practices for replication.

Environmental Impact - Living Trees

📈 **Impact Calculation:** Environmental benefits calculated based on **26,219 surviving trees**, not the originally planted 28,000. Only living trees contribute to ongoing carbon sequestration, oxygen production, and ecosystem services.

20-Year CO_2 by Species

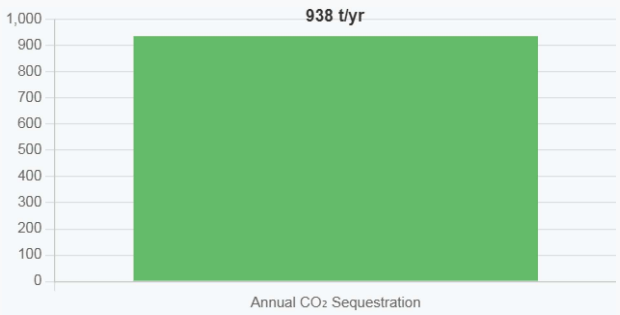
Surviving trees only



Carbon Impact: 26,219 surviving trees will sequester 18,755 tonnes CO_2 over 20 years. Mango contributes 82% due to volume.

Annual CO_2 Sequestration

By surviving trees



Annual Rate: 938 tonnes CO_2/year from 26,219 trees. Equivalent to removing 208 cars from roads annually.

🫁 Oxygen Production

26,219 trees produce 3,146 tonnes O_2 annually - sufficient for 52,432 people (60 kg O_2/person/year).

💧 Water Conservation

314.6 million liters water conserved annually through monsoon absorption and groundwater recharge.

🏔️ Soil Protection

2,622 tonnes topsoil erosion prevented annually through root systems and ground cover.

🌫️ Air Quality

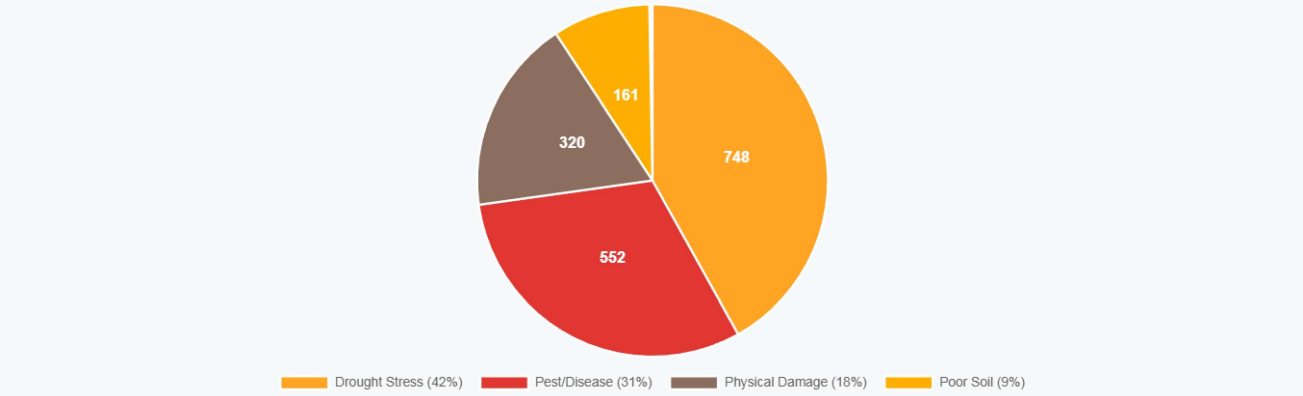
393 tonnes particulate matter filtered annually, improving respiratory health in surrounding communities.

Mortality Analysis & Remedial Actions

Root Cause Analysis - 1,781 Dead Trees

Mortality Causes Distribution

Analysis of 1,781 dead trees



Primary Causes: Drought stress (748 trees, 42%) was the leading cause, followed by pest/disease (552 trees, 31%), physical damage (320 trees, 18%), and poor soil conditions (161 trees, 9%). Understanding these patterns enables targeted interventions.

Mortality Causes Explained

- **Drought Stress (42%):** Extended dry periods post-monsoon in specific locations
- **Pest/Disease (31%):** Fungal infections, termite damage, stem borers
- **Physical Damage (18%):** Cattle grazing, wind damage, human activity
- **Poor Soil (9%):** Rocky terrain, drainage issues, nutrient deficiency

Remedial Interventions 2025

- **Gap Filling:** Replace 1,781 dead trees in monsoon 2025
- **Drip Irrigation:** Pilot in drought-prone villages (Nashik focus)
- **Pest Management:** Organic pesticide training, monitoring protocols
- **Physical Protection:** Fencing in high-damage areas, cattle guards

✅ **2025 Action Plan:** VIKALP will conduct gap-filling plantation of 2,000 saplings (includes 10% buffer) in identified mortality locations during monsoon 2025. Priority areas: Nashik district villages, drought-affected pockets in Tapi, and sites with repeated cattle damage. Enhanced support including drip irrigation pilots and protective fencing will be provided.

Key Achievements & Learnings

🏆 Outstanding Achievements

- **93.6% Survival Rate:** Exceeded industry standard (75-80%) by 13-18 percentage points
- **26,219 Trees Thriving:** Contributing to climate mitigation and farmer livelihoods
- **Species Excellence:** Lemon achieved 99.5% survival, Chiku 95.8%, Guava 95.1%
- **Tapi Success:** 94.8% survival across 27 villages demonstrates scalable model
- **Community Engagement:** 1,390 farmers actively maintaining trees post-plantation
- **Digital Monitoring:** 100% geo-tagged verification enables data-driven decisions

📚 Key Learnings

- **Monsoon Timing is Critical:** August-September plantation with natural rainfall drives 90%+ survival
- **Species Selection Matters:** Hardy species (Lemon, Chiku) show superior survival; consider increasing proportion
- **Site Assessment Essential:** Nashik's challenges highlight need for enhanced pre-plantation soil/water analysis
- **Post-Plantation Care:** First 3 months post-monsoon are critical; requires farmer training and monitoring
- **Community Ownership:** Villages with active Bhoomi Collective showed 5-7% higher survival rates
- **Data-Driven Approach:** Geo-tagging and mortality analysis enable targeted interventions, not blanket solutions

🎯 Areas for Improvement

- **Nashik Support:** Increase field visits, provide irrigation support, conduct soil amendments
- **Drought Resilience:** Introduce mulching practices, water conservation techniques, drought-resistant varieties
- **Pest Management:** Develop organic pest control protocols, train farmers in early detection
- **Physical Protection:** Cattle guards, boundary fencing in vulnerable areas
- **Gap Filling:** Systematic replacement of dead trees to maintain plantation density

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Up2Green (U2G) - 2024 Survival Analysis Report

A VIKALP Environmental Program

Implementation Partner: VIKALP | Financial Partner: Up2Green Reforestation

Report Generated: January 2026

One-year post-plantation assessment | Field-verified data | 100% geo-tagged