

Comprehensive Roadmap for Sustainable Recycling in Cabo Verde

Future Vision: Expansion and Innovation

This strategic roadmap outlines the steps to transform recycling in Cabo Verde from a local initiative to a comprehensive national system. The plan is divided into five phases, each focusing on specific goals and milestones, with an emphasis on expansion, innovation, and sustainability.

Phase 1: Laying the Foundation (2026-2027)

Praia Central Facility

- **Objective:** Establish a central operational recycling facility in Praia for metal, plastic, and paper.
- **Capacity:** 450 tons processing capacity per year.
- **Employment:** Creation of 45 direct jobs.
- **Team Development:** Establishment and training of a core operational team.

Community Programs

- **Educational Outreach:** Involvement of 25 schools in recycling education programs.
- **Local Initiatives:** Launch of 10 neighborhood recycling initiatives.
- **Entrepreneur Support:** Support for the first wave of recycling entrepreneurs.

Infrastructure Development

- **Facility Setup:** Establishment of a central sorting and processing facility.
- **Network Implementation:** Creation of a comprehensive collection network in Praia.
- **Equipment Procurement:** Acquisition of basic processing equipment.

Milestones

- Facility operational by Q1 2026.
- Achieve 50% processing capacity by end of 2027.
- Dispatch first export shipment of recycled materials.

Phase 2: Deepening and Optimization (2028-2029)

Capacity Expansion in Praia

- **Increased Capacity:** Expand to 700 tons per year.

- **Network Expansion:** Extend collection network to surrounding municipalities.
- **Process Refinement:** Enhance sorting and processing efficiencies by 35%.

New Material Streams

- **Pilot Programs:** Initiate glass recycling and e-waste collection.
- **Research Initiatives:** Investigate organic waste composting options.

Community Growth

- **Education Expansion:** Increase to 50 schools participating.
- **Initiative Growth:** Launch 20 neighborhood recycling initiatives.
- **Employment Programs:** Broaden employment opportunities.

Milestones

- Achieve 75% capacity by end of 2028.
- Launch glass recycling pilot by Q2 2029.
- Activate e-waste collection system by Q4 2029.

Phase 3: Island Expansion (2030-2031)

Mindelo Facility (São Vicente)

- **New Facility:** Establish a facility with a 350-ton annual capacity.
- **Community Program:** Develop a locally adapted community engagement program.
- **Employment:** Create 30 new direct jobs.

Sal Facility (Tourism Focus)

- **Specialized Facility:** Focus on recycling for the tourism sector.
- **Collaboration:** Partner with resorts and hotels.
- **Capacity:** 250 tons per year, focusing on plastic and glass.

Integration and Logistics

- **Transport Network:** Develop inter-island transport for recyclables.
- **Standardization:** Implement standardized processes across facilities.
- **Coordination:** Foster central coordination and knowledge sharing.

Milestones

- Mindelo facility operational by Q2 2030.
- Sal facility operational by Q1 2031.
- Integrated logistics system active by end of 2031.

Phase 4: Product Innovation (2032-2033)

Developing Local Applications

- **Material Production:** Create building materials from plastic waste.
- **Local Needs:** Develop paper recycling for packaging and glass recycling for souvenirs.
- **Composting:** Produce compost for local agriculture.

Strengthening the Circular Economy

- **Market Development:** Foster local markets for recycled products.
- **Quality Control:** Implement product certification and quality control.
- **Industry Collaboration:** Partner with local industries and crafts.
- **Dependency Reduction:** Reduce reliance on exports.

Research and Development

- **University Partnership:** Collaborate with the University of Cabo Verde.
- **Test Facility:** Establish a facility for new technology trials.
- **Technology Adaptation:** Customize technology for local conditions, focusing on water efficiency.

Milestones

- Launch first local building materials by Q3 2032.
- R&D center operational by Q1 2033.
- Process 50% of materials locally by end of 2033.

Phase 5: National Coverage (2034-2035)

Expansion to Other Islands

- **New Facilities:** Establish small-scale facilities in Santiago (interior).
- **Mobile Solutions:** Implement mobile recycling solutions for smaller islands.
- **Collection Points:** Set up strategic collection points on all inhabited islands.
- **Model Customization:** Tailor models for each island's needs.

Complete Material Stream Integration

- **Full Integration:** Process all common recyclable materials.
- **Specialized Streams:** Develop solutions for problematic waste.
- **Zero Waste Goals:** Achieve zero waste in participating communities.
- **Tourism Solutions:** Implement circular solutions in the tourism sector.

Policy Integration

- **Government Collaboration:** Work with national government on recycling policies.
- **Standardization:** Establish standardized processes and reporting.
- **Certification:** Develop a certification system for recycling practices.
- **Incentives:** Create economic incentives to encourage recycling participation.

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Phase 5: National Coverage (2034-2035)

Milestones

- **90% of the Population with Access to Recycling Services:** Achieve broad accessibility to recycling services across Cabo Verde by the end of 2035.
- **Fully Integrated National System:** Establish a cohesive and efficient national recycling system, ensuring seamless operations and management.
- **Model Ready for Export:** Develop a scalable and adaptable model to be shared and implemented by other island nations, fostering regional collaboration and sustainability.

Ongoing Innovation

- **Technological Renewal:**
 - **Implementation of AI for Sorting:** Utilize artificial intelligence to enhance sorting accuracy and efficiency within recycling facilities.
 - **IoT Applications for Collection Efficiency:** Integrate Internet of Things (IoT) devices to streamline collection processes, optimizing routes and schedules.
 - **Blockchain for Transparency:** Employ blockchain technology to ensure transparency and traceability within the recycling chain, enhancing accountability.
 - **Energy-Efficient Processing:** Adopt new processing methods that reduce energy consumption, aligning with sustainability goals.

Climate Adaptation

- **Water-Saving Technologies:** Implement advanced water-saving technologies to conserve resources and adapt to climate variations.
- **Renewable Energy Sources:** Power all recycling facilities with renewable energy, aiming for carbon-neutral operations.
- **Climate-Related Risk Protection:** Develop strategies to safeguard facilities and operations from climate-related threats, ensuring resilience and continuity.

Knowledge Center

- **Regional Hub for Recycling Knowledge:** Establish Cabo Verde as a leader in recycling knowledge, serving as a resource center for other nations in the region.
- **Training Center for Other Island Nations:** Offer training programs and workshops to assist other island nations in developing their recycling systems.

- **Publication of Best Practices:** Regularly publish findings and best practices to share insights and advancements in recycling.
- **International Partnerships:** Build partnerships with international organizations to foster innovation and share resources.

Key Indicators 2035

- **2,000+ Tons of Material Recycled Annually:** Achieve significant recycling volumes, demonstrating the system's effectiveness.
- **250+ Jobs Created in the Recycling Economy:** Contribute to economic growth by creating job opportunities in the recycling sector.
- **95% Reduction in Plastic Pollution on Beaches:** Drastically reduce plastic waste on beaches, enhancing environmental health and tourism appeal.
- **75% Recycling Rate in Urban Areas:** Reach a high recycling rate in urban areas, reflecting widespread community engagement and system efficiency.
- **€2+ Million Annual Economic Value:** Generate substantial economic value from the recycling industry, contributing to Cabo Verde's sustainable development.

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