Ecosense AI: Transforming Urban Waste Management in Kenya

Ecosense AI is an innovative mobile app designed to empower citizens in Kenyan cities to report waste pollution. It's a collaborative solution for environmental cleanup. It uses a technology-driven approach to solve urban pollution challenges.

by James Ngandu

The Urban Waste Challenge in Kenyan Cities

Overwhelmed Systems

80% of urban waste in Kenya remains uncollected.

Environmental Risks

This presents environmental and health risks for 14M urban residents.

Inefficient Reporting

Existing waste management systems are overwhelmed.

There is a lack of efficient citizen reporting mechanisms.

User Research: Understanding Community Needs

1 **Extensive Interviews**

Conducted 150+ interviews across 5 Kenyan metropolitan areas.

2 **Key Insights**

Gained key insights from citizens, local governments, and NGOs.

3 **Mapped Pain Points**

Identified current waste reporting pain points.

Identified critical communication gaps in waste management.

User Personas and Journey Mapping

Primary Users

Urban residents aged 18-45.

Secondary Stakeholders

Local government officials.

User Frustrations

Frustrations with current systems.

Desire for transparent, accountable environmental solutions.

Ecosense AI: Technical Solution Design

1 **Mobile App**
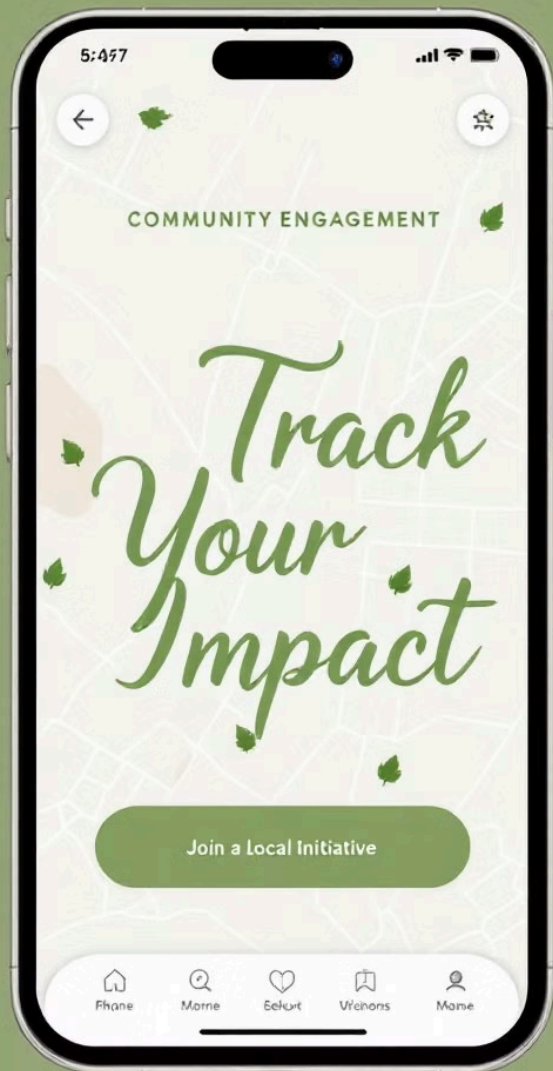
Real-time reporting

2 **GPS Tracking**

Waste location

3 **Photo Documentation**

Categorization

Direct communication with municipal waste management. User-friendly, multilingual interface.

Key App Features and Functionality

One-Click Reporting

Simple waste reporting system.
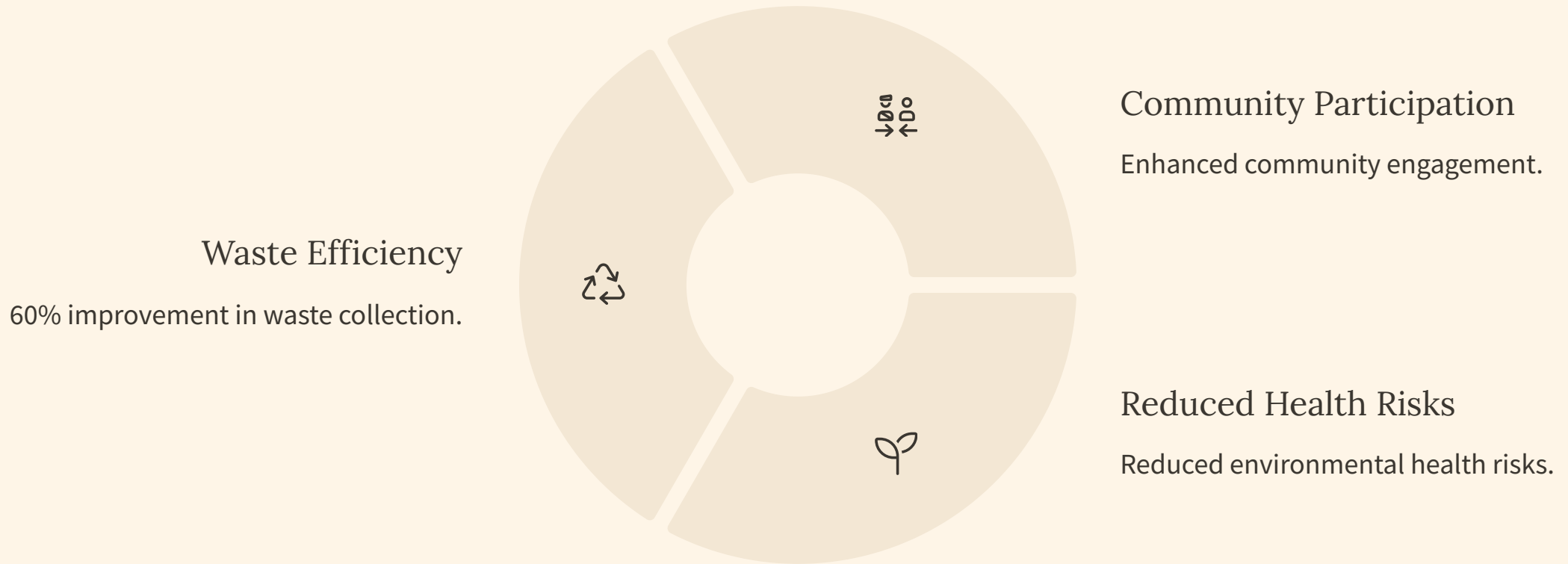
Community Scoring

Engagement scoring.

Transparent Tracking

Tracking reported issues.

Municipal response time monitoring. Incentive program for active community participants.

Projected Social and Environmental Impact

Community Participation

Enhanced community engagement.

Waste Efficiency

60% improvement in waste collection.

Reduced Health Risks

Reduced environmental health risks.

Data-driven municipal waste management strategies. Scalable model for other developing urban centers.

Future Vision and Expansion

3

Pilot Areas

Pilot phase in major Kenyan cities.

East...

Expansion

Potential expansion to other cities.

Technol...

Long-term goal

Transforming urban waste management.

Partnership opportunities with local governments. Long-term goal: Transforming urban waste management through technology.