

# Terms of Reference (ToR)

## Development of Recyclables Platform (Web-Based MVP)

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**Project Title:** PlasticSmart Cambodia: Business Cases and Practices to Mitigate Plastic Waste and Pollution for a Sustainable Future

**Duration:** 2 months development + 24 months maintenance and support

**Location:** 3 pilot communes in Kampong Chhnang, Kampong Cham and Kandal

**Submission Deadline:** 26 March 2026

### 1. Background and Context

CARE International is a globally recognized humanitarian and development organization working to address poverty and social injustice. Since 1973, CARE Cambodia has implemented programs focusing on gender equality, climate resilience, and sustainable livelihoods.

PlasticSmart Cambodia, implemented by CARE Cambodia in partnership with CARE Austria, Youth Council of Cambodia (YCC) and Independent Democracy of Informal Economy Association (IDEA), and funded by the European Union and Austrian Development Agency, aims to reduce pollution and greenhouse gas emissions by promoting sustainable packaging and waste management practices. Recent 2025 field research reveals critical challenges: no at-source segregation, open burning is widespread in rural and underserved areas, edjai are the main recyclers who face unstable/opaque pricing, debt traps, health risks, and lack of formalization. Household sorting remains low and service uptake is limited.

To address these issues, the project will develop the “Recyclables Marketplace” — a lightweight, mobile-first web platform (shareable URL) that creates a transparent channel connecting households, informal waste collectors (edjai), and small depots. The platform is intentionally designed to work alongside, rather than replace, existing formal municipal waste collection systems. It does not mandate nationwide segregation or disrupt current practices. Instead, it offers a voluntary, trust-building pathway for motivated households and collectors to participate in quality recycling.

The platform should be accessible via a simple shareable URL, requiring no app download, and will function offline through browser-based storage that syncs automatically when connectivity is restored. Recognizing the context of our target users, the interface will be Khmer-first with heavy use of icons and voice guidance to accommodate varying literacy levels, while SMS notifications will ensure critical

updates reach users even without data plans. At its core, the platform builds trust through transparency, providing real-time pricing information, digital collection logs, and a points-based incentive system that rewards both households and edjai for participation and quality. The technical architecture prioritizes low-cost, low-maintenance operations to ensure the platform remains viable and sustainable well beyond the project's 2-year pilot period.

## **2. Objectives**

Overall objective is to develop a web-based digital platform for profitable and sustainable waste management including improve income stability and gender responsiveness for informal waste collectors particularly women and all people of genders, enables household participation in quality recycling, enhances fair market linkages with small depots, recyclers and generates reliable diversion data for program management and local authorities while embedding gender responsive approach.

Specific Objectives:

1. Increase transparency and trust in recyclables collection through daily price visibility and digital proof of collection.
1. Improve edjai income stability and quality via clear pricing, logs, earnings history, and performance-based points
2. Enable households/vendors to participate easily (request pickup, receive confirmation, earn points, view history/impact).
3. Support small depots to access more reliable pre-sorted supply and communicate fair prices.
4. Provide CARE/partners and local authorities with simple diversion (including sex, age, and other disaggregated) data for program management and reporting.
5. Ensure the solution is simple, low-risk, offline-tolerant, Dual Language- Khmer & English, and operationally sustainable.

## **3. Scope of Work**

Deliver a website (mobile-first, no app) focused on minimum viable product (MVP) essentials. No payments processed (cash-based transaction only). Households pre-registered with unique digital ID + QR. The vendor will design, build, test, deploy, and hand over a single responsive web application (mobile-first). The platform must be accessible via a shareable URL, with no app download required.

Core MVP features:

A) Public / Guest (no login required)

- Public homepage with daily price board (PET, HDPE, LDPE, PP) showing riel/kg and last updated timestamp.

- Prominent entry for “Enter Household ID” and/or “Scan QR” to access household view.
- Simple sorting guide with icons (Khmer-first; English toggle).

#### B) Household Digital ID, Pickup Request, and Incentives

- Pre-registered households/vendors using short unique IDs (e.g., LON-1234) + printable QR.
- Household access via ID entry or QR scan; auto-recognize returning users on same browser/device (token-based).
- Optional linking of phone number via OTP for SMS alerts (phone is optional).
- Household dashboard:
  - Points balance
  - Pickup/collection history
  - Simple “rewards catalog” (static items configurable by admin)
  - Redemption request submission to admin
- Pickup request form supporting:
  - Door / description (no precise GPS required), OR
  - Shared collection points (dropdown list configured by admin; 5–15 points per commune typical)

#### C) Edjai Collection Logging (core workflow)

- Edjai scans household QR → opens collection form for that household ID.
- Entry by material type (PET/HDPE/LDPE/PP) with kg input and live price calculation based on daily rates.
- Submit “Save & Confirm” creates a log entry and awards household points.
- SMS confirmation to household (if phone linked) and/or to edjai (as defined).
- Edjai dashboard:
  - Log history (daily/weekly)
  - Earnings estimates
  - Points balance and basic performance indicators

#### D) Admin (CARE) Dashboard

- Secure admin login (role-based).
- Manage and update:
  - Daily reference prices (by material)
  - Points rules/values (simple configuration)
  - Rewards catalog and redemption approvals
  - Shared collection points list (CRUD)
- View and export:
  - Collection logs (filter by date/area/material)
  - Points ledger / redemption list
  - Summary metrics (e.g kg by type/time; simple charts acceptable)
  - Disaggregated data (e.g sex, age, location, plastic types, etc)

- Export to CSV (minimum) and optionally PDF.

#### E) SMS Integration (MVP)

- Integrate with a Cambodia-available SMS gateway (CARE to confirm preferred provider; vendor to propose).
- SMS use cases (minimum):
  - OTP (if phone linking enabled)
  - Collection confirmation / points notification
  - Include basic retry handling and admin-visible delivery status where feasible.

#### F) Offline / Low-connectivity Support

- Edjai must be able to save offline drafts of collection logs in browser storage and sync automatically when connectivity returns.
- Clearly indicate sync status to the user (e.g., Draft / Pending Sync / Synced).

#### G) Languages and Accessibility

- Khmer-first UI with English toggle.
- Heavy use of icons for key flows.
- Basic voice read-aloud for key guidance screens via browser capability (where supported) or provide a practical alternative if device support is insufficient (vendor to advise).

#### 4.2 Optional Features (Nice-to-have)

- Photo upload for collection proof (with safeguards guidance)
- Anonymous leaderboard (by commune/area)
- Depot “confirm quality” checkbox and/or mutual confirmation flow
- Lightweight map visualization of shared points (OSM-based)

### 4. Management and Governance

- **Supervision:** The vendor will report directly to CARE Cambodia’s PlasticSmart Project Team and will work under its overall supervision, ensuring regular coordination, progress updates, and alignment with project objectives and technical requirements.
- **Data Ownership:** All data collected through the platform shall remain the exclusive property of CARE Cambodia. The vendor may not reuse, reproduce, share, distribute, or commercialize the system or any associated data without prior written consent from CARE Cambodia.
- **Data Protection and Privacy:** The vendor must comply with CARE’s data protection standards and ensure the highest level of security in handling all information. This

includes encrypting sensitive data, minimizing the collection of personally identifiable information, providing anonymization capabilities for data exports, and storing all data within a secure hosting environment to prevent unauthorized access, loss, or misuse.

- **Safeguarding & Ethical Compliance:** The vendor must comply with CARE’s Child Protection Policy and Safeguarding and Anti-Harassment Policy at all times, ensuring that all activities are conducted in a manner that prevents harm, abuse, exploitation, and harassment. The vendor is also required to maintain strict confidentiality in the handling, storage, and processing of all user information, ensuring data privacy, security, and responsible use in accordance with applicable laws and CARE’s standards.

**5. Key Deliverables: All system architecture and documents**

1. Fully functional responsive website (deployed on Vercel/Netlify or similar).
2. Admin tool and dashboard to manage shared collection points (simple list).
3. User & technical documentation (Khmer + English).
4. User Manuals/Guidelines
5. 1 User-Centered Design Workshop
6. 2 Training sessions (For project team and Final Users)
7. Post-launch support & bug fixes.
8. Source code + database schema + deployment instructions.

**5. Timeline (Total 2 Months)**

Phase	Duration	Key Activities	Deliverable
1. Kick-off & Design	Week 1–2	Scope lock, wireframes, tech stack	Approved wireframes & plan
2. Development	Week 3–6	Build core flows (QR login, request, collection form, points, price board, basic admin)	Beta version
3. Testing & Fixes	Week 7	Internal testing, bug fixes, SMS integration	Ready-for-pilot version
4. Launch & Training	Week 8	Deploy, soft launch, training sessions	Live site + training complete
5. Support	Months 3–24	Maintenance period	Monthly status reports

**6. Roles and Responsibilities**

- Project Team: Pre-register households (assign IDs, print/distribute QR cards), manage shared collection points, provide content (prices, rewards), update prices/rewards post-launch, secure sponsors, facilitate testing/onboarding.
- Developer: Design, build, translation, test, deploy, train, support

## 7. Required Qualifications

### Essential Qualifications

- 3+ years web/mobile development experience
- 2+ completed projects with similar complexity (marketplaces, logistics, or community platforms)
- Proven experience in:
  - SMS gateway integration
  - Offline-first web architecture
  - Role-based admin systems
  - Secure hosting and deployment
  - User-friendly design for low-literacy users

### Preferred

- Experience in Cambodia or Southeast Asia
- Khmer language capability
- Experience working with NGOs/social impact platforms
- Familiarity with informal economy or waste management systems

### Evaluation Criteria

Criteria	Weight
Technical Quality & Architecture	40%
Relevant Experience	30%
Cost-effectiveness	20%
Maintenance & Sustainability Plan	10%

## 9. How to Apply

Submission of Proposals: Interested agencies should submit their proposals via email to [KHM.Procurement@care.org](mailto:KHM.Procurement@care.org) by 22 March 2026.

The consultancy application should be included:

1. Technical Proposal (methodology, architecture, workplan)
2. Financial Proposal (detailed budget breakdown)
3. Company profile and CVs

Submission Deadline: 26 March 2026

Start Date: Early April 2026; Target Launch: Mid May 2026

**Selection Process:**

The selection process includes a review of all submitted applications, clarification meeting with shortlisted consultant, and reference checks. The agency that best demonstrates its ability to meet the primary objective of this consultancy (within the proposed timeframe) with the most relevant qualifications and experience will be selected.

For any inquiries, please contact via email: [KHM.Procurement@care.org](mailto:KHM.Procurement@care.org).

CARE is an equal opportunity employer committed to a diverse workforce. All qualified applicants are encouraged to apply, including women, LGBTQI+ individuals, people with disabilities, members of ethnic minorities and members of other marginalized groups. CARE International in Cambodia is committed to protecting the rights of children. CARE International in Cambodia reserves the right to conduct screening procedures to ensure a child safe environment.

CARE places human dignity at the Centre of its relief and development work. At the heart of CARE's efforts to impact poverty and social justice is its engagement with marginalized communities, and vulnerable adults and children. Vulnerable adults and children are particularly at risk of sexual exploitation and abuse. CARE commits to the protection from sexual harassment, exploitation and abuse (PSHEA) of vulnerable adults, involving CARE Employees and Related Personnel. CARE has zero tolerance toward sexual exploitation and abuse and child abuse. CARE takes seriously all concerns and complaints about sexual exploitation and abuse and child abuse involving CARE Employees and Related Personnel.

We are committed to each other and to the protection of the people we serve. We do not tolerate sexual misconduct within or external to our organization and imbed child protection in all we do. Protection from sexual harassment, exploitation and abuse and child protection are fundamental to our relationships, including employment, and our recruitment practices are designed to ensure we only recruit people who are suitable to work with other staff and the people we serve. As well as pre-employment checks, we will use the recruitment and reference process to ensure potential new staff understand and are aligned with these expectations.

# Annexes

- Annex 1: Draft Platform Concept Design
- Annex 2: Project Profile (*in attachment*)
- Annex 3: CARE Data Protection & Safeguarding Policies (will be shared once onboard)

## **Annex 1: Draft Platform Concept Design**

### **1. Core Objective & Scope**

A lightweight, mobile-first responsive website (PWA-capable, shareable URL: e.g. plasticsmart.kh) that creates a parallel informal recyclables channel for all plastic types.

Goal: Empower edjai with transparent prices & digital records which help increase income & collection quality; motivate households via incentives & proof of diversion; provide CARE/local commune simple data. No payments processed (cash only), no replacement of formal MSW, offline-first, Khmer-default, low-literacy friendly.

Pilot: 3 communes with approximately 80-150 edjai, 5000 households, 5–10 small depots, 1-3 recyclers.

### **2. Prioritized Users & Access**

1. **Edjai** (core users) – Phone OTP login
  - View daily price board (public)
  - Log collection (offline: type, kg, photo)
  - Record sale to depot
  - View earnings history, points balance
  - Request help (PPE, sacks, bad price)
2. **Households/Vendors** (tertiary, voluntary) – QR/ID auto-login (pre-registered by CARE)
  - Request pickup (door pin or shared point dropdown)
  - View points, pickup history, redemption catalog
3. **Small Depots** (secondary) – Simple login
  - Post daily buying prices
  - Confirm edjai logs (quality checkbox)
4. **Admin** – Secure login
  - Dashboard: kg diverted, active users, help/redemption requests
  - Moderate prices, approve redemptions, export CSV/PDF

### **3. Key Mechanics & Flows**

### **Daily Cycle (simplified)**

- Morning: Edjai opens site → sees public price board (PET/HDPE/LDPE/PP, ranges + average, last updated timestamp)
- Collection: Edjai scans household QR → auto-fills form → enters kg (live price calc) → saves draft offline → syncs later
- Sale: Edjai records sale (select depot, kg, price received) → depot confirms if logged in
- Feedback: Household gets SMS “Collected X kg PET today + Y points”
- End-of-day: Edjai views earnings/points; admin sees aggregated diversion

### **Price Transparency Mechanism**

- Depots post buying prices daily (morning login)
- CARE initially moderates/seeds & publishes reference average
- Homepage grid: icon + material name + price range + trend arrow + “X depots buying”
- Edjai sees live calc during logging; households see estimated value on request

### **Incentives / Points System** (low-maintenance, sponsor-funded)

- Households: +points per verified pickup (e.g. 10/kg PET) → redeem soap/rice/phone credit
- Edjai: +5–10/kg clean material, +50 bonus >50 kg/week, +20/week consistent logging, +10 per good household rating → redeem PPE/phone credit/top-up + monthly “Top Edjai” badge
- Redemption

### **Offline & Accessibility**

- Browser localStorage for drafts (logs, requests) → auto-sync on reconnect
- Large icons/buttons, voice read-aloud (prices/guides), SMS fallback for alerts/OTP
- No heavy GPS: use village name or pre-set shared collection points (dropdown from OSM/CARE list)

## **4. Tech & Risk Summary**

- Stack: React + Tailwind (frontend), Firebase/Supabase (backend, free tier MVP), SMS via local API
- Deployment: Vercel/Netlify (instant updates, low cost)
- Maintenance: 15–20% dev cost/year; CARE handles price seeding & redemptions initially
- Risk mitigation: Start public price view only → add logins later; manual moderation first; pilot small (1 commune) → measure uptake before scaling