# Phase 1 – Problem Understanding & Industry Analysis (Food Waste Reduction Website)

**1. Requirement Gathering**

👉 **Goal:** Understand the needs of stakeholders involved in food waste reduction.

* **Donors (Individuals/Restaurants/Hotels/Organizations):**
  + Register and log in securely.
  + Post available surplus food details (type, quantity, expiry timeline, pickup address).
  + Track donation history.
* **Receivers (NGOs/Charities/Community Kitchens/Individuals in need):**
  + Search for available food donations nearby.
  + Request and reserve food items.
  + Get pickup/delivery updates.
* **Admins:**
  + Verify donor/receiver accounts.
  + Monitor transactions and platform activities.
  + Ensure food safety guidelines are followed.
* **Delivery Partners/Volunteers:**
  + Get pickup/delivery instructions.
  + Update status (picked, on the way, delivered).
* **Platform Owners:**
  + Monitor overall performance (donations, deliveries, user growth).
  + Ensure platform security and reliable payment/logistics integration (if donations or transport costs are involved).

**2. Stakeholder Analysis**

👉 **Goal:** Define roles & responsibilities.

* **Primary Stakeholders:**
  + **Donors:** Provide surplus food.
  + **Receivers:** Collect and use the food.
  + **Admins:** Verify, manage, and ensure smooth functioning.
* **Secondary Stakeholders:**
  + **Delivery Volunteers / Logistics Providers:** Handle food transport.
  + **Health & Safety Authorities:** Ensure food hygiene standards.
  + **Developers/IT Team:** Maintain and enhance the platform.

**3. Business Process Mapping**

👉 **Goal:** Compare the current process vs. platform-enabled process.

* **Current (Manual/Traditional):**
  + Donors contact NGOs/receivers directly via calls/social media.
  + No structured system for availability, tracking, or safety checks.
  + Food often gets wasted due to delays or lack of coordination.
* **Proposed (Platform-Enabled):**
  + Donors post available food in real-time on the website.
  + Receivers search & request based on location/need.
  + Volunteers handle pickup/delivery with live tracking.
  + Admin dashboard shows total food saved, beneficiaries served, and volunteer activity.

**4. Industry-Specific Use Case Analysis**

👉 **Goal:** Learn from similar initiatives & adapt best practices.

* **Benchmark Examples:**
  + Platforms like *Feeding India*, *Too Good To Go*, *Robin Hood Army* use tech to reduce food waste.
  + They provide real-time availability, pickup scheduling, and transparency.
* **Our Platform Features:**
  + **Matching System:** Connect donors and receivers nearby automatically.
  + **Food Safety Guidelines:** Donors must confirm food condition before posting.
  + **Engagement:** Send notifications/emails when new donations are available nearby.
  + **Impact Tracking:** Show stats like *meals served, food saved from waste*.

**5. Tech/Tool Exploration**

👉 **Goal:** Identify technologies to simplify development.

* **Authentication:** JWT, OAuth (Google Login).
* **Database:** MongoDB Atlas / Firebase.
* **Maps & Location:** Google Maps API for donor–receiver matching.
* **UI Components:** React + Tailwind CSS / Bootstrap.
* **Backend:** Node.js + Express.js.
* **Deployment:** Vercel (frontend), Render/Heroku/AWS (backend).
* **Communication:** Twilio (SMS alerts), Firebase push notifications, or email APIs.
* **Monitoring & CI/CD:** Postman, GitHub Actions.