



# **Surplus Hub: A Sustainable Solution for Food Redistribution**

**Mohammed Shezan Ahmed, Moniga Devi, Mudasir Baig Indikar, Muktha Nagaraj,**

**Nadella Uma Satya Naga Manjusha, Nandita Dharmendra Gasti, Nikita Hota,**

**Dr. Pujari Sudharshana Reddy**

MBA (Core Finance, Core Marketing, Core HR) Students, Faculty of Management Studies, CMS Business School, Jain Deemed to be University, Bengaluru, India

Assistant Professor, Department of Finance, Faculty of Management Studies, CMS Business School, Jain Deemed to be University, Bengaluru, India

**ABSTRACT:** Food wastage and hunger are paradoxical global challenges, with millions of tons of edible food discarded while a significant portion of the population faces food insecurity. The Surplus Hub project aims to bridge this gap by leveraging technology to connect surplus food providers with recipients in need. This study explores the problem of food wastage, the innovative solution provided by Surplus Hub, its business model, market potential, financial viability, and socio-environmental impact. The findings suggest that technology-driven food redistribution can significantly reduce waste, ensure efficient food allocation, and contribute to sustainability efforts.

## **I. INTRODUCTION**

### **1.1 Background**

Food wastage is a critical issue, with approximately 1.3 billion tons of food wasted annually, equating to one-third of global food production (FAO, 2021). This has severe economic, social, and environmental consequences, including increased greenhouse gas emissions, resource misallocation, and worsening food insecurity.

Hunger remains a pressing issue, with over 800 million people worldwide suffering from chronic undernourishment (WHO, 2022). While surplus food could be redirected to those in need, the absence of efficient redistribution mechanisms results in edible food going to waste.

### **1.2 Problem Statement**

Lack of a streamlined platform connecting surplus food providers with those in need.

Logistical and regulatory challenges in food donation processes.

Environmental impact of food waste, contributing to carbon emissions.

Missed economic opportunities for food businesses to reduce disposal costs and fulfill Corporate Social Responsibility (CSR) goals.

### **1.3 Objectives**

The Surplus Hub project aims to:

Develop a user-friendly platform for surplus food donation.

Reduce food wastage while addressing hunger.

Ensure compliance with food safety regulations.

Create a sustainable and scalable business model.

## **II. LITERATURE REVIEW**

### 2.1 Food Waste and Global Trends

Food waste occurs at multiple levels—production, distribution, and consumption—leading to financial losses and environmental concerns. According to the World Economic Forum (2022), food waste contributes to approximately 10% of global carbon emissions.

### 2.2 Food Insecurity and Hunger

Despite the abundance of food, hunger persists due to inefficient distribution systems. Research suggests that tech-driven solutions can enhance food redistribution efficiency (Borrello et al., 2020).

### 2.3 Existing Food Redistribution Models

Too Good To Go (Europe) allows restaurants to sell surplus food at discounted prices.

Olio enables peer-to-peer food sharing within communities.

These models indicate that digital platforms can play a vital role in reducing food waste and improving accessibility. However, challenges such as logistics, scalability, and compliance need to be addressed.

### 2.4 Challenges in Food Redistribution

Logistical Barriers: Coordinating surplus food collection and distribution.

Legal Concerns: Ensuring compliance with food safety regulations.

Awareness and Adoption: Encouraging businesses and NGOs to participate.

## **III. RESEARCH METHODOLOGY**

### 3.1 Research Approach

This study employs a mixed-method approach, including:

Qualitative Analysis: Reviewing food waste literature and case studies.

Quantitative Data: Analyzing food wastage statistics and user adoption trends.

### 3.2 Data Collection

Primary Data:

Surveys and interviews with 50 restaurants, 30 NGOs, and 100 low-income individuals.

Secondary Data:

Reports from FAO, WHO, and UN SDG Goals.

### 3.3 Data Interpretation

80% of restaurants expressed willingness to donate surplus food.

70% of NGOs reported difficulties in securing food donations.

65% of low-income individuals faced challenges accessing free meals consistently.

These insights validate the need for a centralized, tech-enabled food redistribution system like Surplus Hub.

## **IV. PROPOSED SOLUTION: SURPLUS HUB**

### 4.1 Platform Features

Real-time Matching: AI-driven system connects surplus food providers with NGOs.

Geolocation Tracking: Ensures smooth coordination of food pickups and deliveries.

User Authentication: Secure login for donors and recipients.

Feedback & Rating System: Maintains food quality and trust.

Compliance Guidelines: Ensures adherence to food safety regulations.

### 4.2 Business Model

Subscription-based model for food providers.

Transaction fees for successful donations.

Additional revenue streams: Advertising, premium memberships, and grants.

### 4.3 Stakeholders

Food Providers: Restaurants, hotels, caterers, grocery stores.

Recipients: NGOs, community kitchens, low-income families, homeless shelters.

Regulatory Authorities: Ensuring compliance and policy support.

## **V. MARKET STRATEGY**

### 5.1 Target Audience

Businesses looking to reduce food waste and enhance CSR efforts.

NGOs and social service organizations needing consistent food supplies.

Individuals facing food insecurity.

### 5.2 Competitive Advantage

Unlike traditional food banks, Surplus Hub provides real-time donation matching.

Greater accessibility through mobile and web applications.

Integrated compliance measures to address legal concerns.

### 5.3 Promotion and Outreach

Social Media Campaigns to raise awareness.

Corporate Partnerships with food industry leaders.

Community Engagement Programs to encourage participation.

## **VI. FINANCIAL STRATEGY**

### 6.1 Revenue Streams

1. Subscription Fees: Restaurants and hotels pay a fee for platform access.

2. Transaction Fees: A percentage-based fee per successful donation.

3. Advertising: Revenue from food brands and CSR programs.

4. Grants and Sponsorships: Support from government and non-profits.

### 6.2 Cost Structure

Platform Development & Maintenance: Software development, hosting, and updates.

Marketing & Outreach: Campaigns and promotional activities.

Logistics: Transportation and coordination costs.

### 6.3 Financial Projections

Targeting 100–500 business users in the first year.

Forecasting steady revenue growth as platform adoption increases.

Projected profitability within two years.

## **VII. BUSINESS IMPACT AND SUSTAINABILITY**

### 7.1 Social Impact

Reduces food waste while addressing hunger.

Empowers communities by fostering collaboration among stakeholders.

### 7.2 Environmental Impact

Minimizes carbon emissions from decomposing food.

Promotes sustainable food consumption practices.

### 7.3 Economic Benefits

Reduces waste disposal costs for food providers.

Creates job opportunities in logistics and food distribution.

## VIII. CONCLUSION

The Surplus Hub initiative presents a transformative solution to the dual challenges of food waste and hunger. By leveraging technology, the platform facilitates efficient food redistribution, ensuring surplus food reaches those in need. Its scalable and financially sustainable model makes it a viable long-term solution.

As the global community moves toward sustainable food systems, platforms like Surplus Hub can play a pivotal role in reducing food waste, alleviating hunger, and fostering social equity.

## REFERENCES

1. FAO. (2021). Food Waste and Its Global Impact.
2. WHO. (2022). Hunger and Food Insecurity Report.
3. Gustavsson, J., Cederberg, C., & Sonesson, U. (2011). Global Food Losses and Food Waste.
4. Borrello, M., et al. (2020). Food Redistribution Technologies: A Systematic Review.



INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  [ijirset@gmail.com](mailto:ijirset@gmail.com)



[www.ijirset.com](http://www.ijirset.com)

Scan to save the contact details