

# A Smart Solution for Minimizing Urban Food Wastage and Alleviating Hunger

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**Abstract:** *By tackling the urgent problems of food waste and community food insecurity, A smart solution for minimizing urban food wastage and alleviating hunger project aims to transform local food systems. The effort seeks to create a complete system for effectively gathering, classifying, and dispersing excess edible food through strategic partnerships with companies, eateries, homes, and community organizations. The initiative aims to redistribute excess edible food from establishments, eateries, and homes to individuals in need by forming alliances with neighbourhood food banks, non-profits, and community organizations. The system's incorporation of Blockchain Technology is a crucial feature that guarantees security, traceability, and transparency during the food redistribution process. Here, create a rudimentary blockchain network to evaluate whether blockchain technology can be used to monitor and log food redistribution transactions. Hashing is used in the creation and validation of blockchain nodes. A reliable strategy for gathering, organizing, and maintaining extra edible food is offered by this application. This will automatically deliver the notification by predicting the user's position and matching it with the donor's location. By utilizing Blockchain's transparency and traceability capabilities, the system allows users to submit requests for food aid with specific needs. After reviewing the requests, possible donors have the option to approve or disapprove them based on the surplus that is available and how well they meet the needs of the user. Once accepted, the user's information is shared with the donors, who then grant their final approval based on the amount of food that is available and the amount that the user requires. Notifications are sent promptly to users whose requests are denied, maintaining openness and controlling expectations during the redistribution procedure.*

**Keywords:** Application design, Donor Enrolment, User Enrolment, Food Request, Update Food availability, Blockchain Creation, Location Prediction, Quantity measurement, Request Process, Delivery Confirmation

## REFERENCES

- [1] De Boni, Annalisa, Giovanni Ottomano Palmisano, Maria De Angelis, and Fabio Minervini. "Challenges for a Sustainable Food Supply Chain: A Review on Food Losses and Waste." *Sustainability* 14, no. 24 (2022): 16764.
- [2] Harvey, John, Andrew Smith, James Goulding, and Ines Branco Illodo. "Food sharing, redistribution, and waste reduction via mobile applications: A social network analysis." *Industrial Marketing Management* 88 (2020): 437-448.
- [3] De Laurentiis, Valeria, Carla Caldeira, and Serenella Sala. "No time to waste: assessing the performance of food waste prevention actions." *Resources, Conservation and Recycling* 161 (2020): 104946.
- [4] Meshulam, Tamar, David Font Vivanco, Vered Blass, and Tamar Makov. "Sharing economy rebound: The case of peer-to-peer sharing of food waste." *Journal of Industrial Ecology* 27, no. 3 (2023): 882-895.
- [5] Read, Quentin D., Samuel Brown, Amanda D. Cuéllar, Steven M. Finn, Jessica A. Gephart, Landon T. Marston, Ellen Meyer, Keith A. Weitz, and Mary K. Muth. "Assessing the environmental impacts of halving food loss and waste along the food supply chain." *Science of the Total Environment* 712 (2020): 136255.
- [6] Damiani, Mattia, Tiziana Pastorello, Anna Carlesso, Stefania Tesser, and Elena Semenzin. "Quantifying environmental implications of surplus food redistribution to reduce food waste." *Journal of cleaner production* 289 (2021): 125813.

- [7] Bergström, Pauline, Christopher Malefors, Ingrid Strid, Ole Jørgen Hanssen, and Mattias Eriksson. "Sustainability assessment of food redistribution initiatives in Sweden." *Resources* 9, no. 3 (2020): 27.
- [8] Papargyropoulou, Effie, Kate Fearnough, Charlotte Spring, and Lucy Antal. "The future of surplus food redistribution in the UK: Reimagining a 'win-win' scenario." *Food Policy* 108 (2022): 102230.
- [9] Rut, Monika, Anna R. Davies, and Huiying Ng. "Participating in food waste transitions: exploring surplus food redistribution in Singapore through the ecologies of participation framework." *Journal of Environmental Policy & Planning* 23, no. 1 (2021): 34-47.
- [10] Karki, Shova Thapa, Alice CT Bennett, and Jyoti L. Mishra. "Reducing food waste and food insecurity in the UK: The architecture of surplus food distribution supply chain in addressing the sustainable development goals (Goal 2 and Goal 12.3) at a city level." *Industrial Marketing Management* 93 (2021): 563-577.