Chapter 11
Environmental Food Impact

P. Selvakumar
https://orcid.org/0000-0002-3650-4548
Department of Science and Humanities, Nehru Institute of Technology, Coimbatore, India

J. Karunambikai
Providence College for Women, India

M. Shanthi
https://orcid.org/0000-0002-3844-9765
Avinashilingam Institute for Home Science and Higher Education for Women, India

S. R. Murali
https://orcid.org/0000-0001-9263-6193
Nadar Mahajana Sangam S. Vellaichamy Nadar College, India

T. C. Manjunath
https://orcid.org/0000-0003-2545-9160
Rajarajeswari College of Engineering, India

ABSTRACT

Food systems are intricately linked to environmental health, with agriculture, food processing, transportation, and waste management collectively contributing. Understanding the environmental footprint of food involves assessing the full life-cycle impacts, from farm to fork, including production, processing, distribution, consumption, and disposal stages. This comprehensive approach encompasses the environmental impacts associated with land use change, energy consumption,

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chemical inputs, biodiversity loss, and waste generation throughout the food supply chain. Analyzing food footprints requires consideration of diverse factors such as agricultural practices, food miles, packaging materials, waste management strategies, and consumer behaviors, highlighting the complex interactions between food production systems and ecological systems. As global populations grow and dietary patterns evolve, addressing the environmental footprint of food is essential for achieving sustainable development goals and safeguarding planetary health. Water-efficient agricultural technologies and practices.

INTRODUCTION TO ENVIRONMENTAL FOOD IMPACT: UNDERSTANDING THE FOOTPRINT OF FOOD

Food systems are intricately linked to environmental health, with agriculture, food processing, transportation, and waste management collectively contributing. Understanding the environmental footprint of food involves assessing the full lifecycle impacts, from farm to fork, including production, processing, distribution, consumption, and disposal stages. This comprehensive approach encompasses the environmental impacts associated with land use change, energy consumption, chemical inputs, biodiversity loss, and waste generation throughout the food supply chain. Analyzing food footprints requires consideration of diverse factors such as agricultural practices, food miles, packaging materials, waste management strategies, and consumer behaviors, highlighting the complex interactions between food production systems and ecological systems. As global populations grow and dietary patterns evolve, addressing the environmental footprint of food is essential for achieving sustainable development goals and safeguarding planetary health. Water-efficient agricultural technologies and practices (Pulkkinen H, et al., 2015). The concept of water footprinting provides a comprehensive assessment of water use throughout the lifecycle of food products, accounting for direct water withdrawals, virtual water trade, and water pollution impacts associated with production processes. Water footprint assessments inform decision-making by identifying water-intensive production stages, hotspots of water scarcity risk, and opportunities for water use optimization across agricultural supply chains. Sustainable sourcing strategies, corporate water stewardship initiatives, and certification schemes, such as the Water Footprint Network and the Alliance for Water Stewardship Standard, promote responsible water management practices among food producers, processors, and retailers to minimize water footprints and support water security in water-stressed regions.