

Reducing food waste and adhering to sustainable diets: the case of the Mediterranean basin

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Abstract

Unsustainable consumption and production patterns jeopardize the resilience of the current food systems, including those in the Mediterranean basin, leading to profound implications for the environment and food security (United Nations, 2015; Zdruli et al., 2016). Moreover, both climate and non-climate stressors in the limelight, such as geopolitical instabilities, social inequalities, the COVID-19 pandemic, and economic recessions, pose dynamic threats to the resilience of the food systems, resulting in cumulative impacts on food security (FAO et al., 2021; HLPE, 2020; IPCC, 2022; Mbow et al., 2019). As a component of unsustainable consumption and production patterns, food waste generation has been associated with parameters of environmental degradation (Capone et al., 2020; Zdruli et al., 2016), economic losses (FAO, 2014), caloric and nutrient losses (Capone et al., 2016; Searchinger et al., 2019), as well as other social costs associated with the pillars of food security (FAO, 2019a). Meanwhile, among other drivers, the rising population, higher rates of urbanization, globalization, and economic growth continue to raise food demand and change dietary preferences towards western-style diets. Paradoxically, although research evidence suggests that the Mediterranean diet could serve as a sustainable dietary pattern and an effective preventing measure for numerous noncommunicable diseases (FAO, 2019b), the adherence to this pattern has decreased in these regions, highlighting the nutritional transition of these societies (CIHEAM, 2015). It has been claimed that future policies and initiatives should incorporate changes to both the demand and supply sides of the food system (Mbow et al., 2019). Reducing food waste and shifting to sustainable diets, such as the Mediterranean dietary pattern, have been advocated as demand-side mitigation strategies (FAO et al., 2021; IPCC, 2022). The aim of this study is to present the research on the levels of food waste and its implications in the Mediterranean region. To achieve this, an extensive literature review was conducted, focusing on the available national data on food waste measurements in the countries of the Mediterranean basin. Furthermore, estimates of the environmental impacts of food waste generation in the Mediterranean area have been presented. In conclusion, although there is a growing scientific interest in that topic, evidence for the amounts of food waste at national level in the Mediterranean basin is lacking. Further initiatives are required to encourage the

reduction of food waste in the Mediterranean food systems, including the incorporation of the Mediterranean diet into future policies as a measure for food waste prevention.

Keywords: food waste, sustainable diet, Mediterranean basin

References

- Capone, R., Bennett, A., Debs, P., Bucatariu, C., El Bilali, H., Smolak, J., Lee, W., Bottalico, F., Diei-Ouadi, Y., Toppe, J.J.Z.w.i.t.M.N.r., food, FAO, 2016. Food losses and waste: global overview from a Mediterranean perspective. *J Zero waste in the Mediterranean: Natural resources, food knowledge*. CIHEAM, 193-242.
- Capone, R., Berjan, S., El Bilali, H., Debs, P., Allahyari, M.J.I.F.R.J., 2020. Environmental implications of global food loss and waste with a glimpse on the Mediterranean region. 27. CIHEAM, F., 2015. Mediterranean food consumption patterns: diet, environment, society, economy and health. A White Paper of Priority 5 of Feeding Knowledge Program, Expo Milan 2015. Bari/ Rome: CIHEAM-IAMB/ FAO.
- FAO, 2014. Food Wastage Footprint: Full-cost accounting. FAO Rome, Italy.
- FAO, 2019a. The State of Food and Agriculture 2019. Moving forward on food loss and waste reduction. FAO Rome. Licence: CC BY-NC-SA 3.0 IGO.
- FAO, IFAD, UNICEF, WFP, WHO, 2021. The State of Food Security and Nutrition in the World (SOFI) 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. FAO Rome, Italy.
- FAO, W., 2019b. Sustainable healthy diets - Guiding principles. Rome.
- HLPE, 2020. Food security and nutrition: building a global narrative towards 2030. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome.
- IPCC, 2022. Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Lösschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.
- Mbow, C., Rosenzweig, C., Barioni, L.G., Benton, T.G., Herrero, M., Krishnapillai, M., Liwenga, E., Pradhan, P., Rivera-Ferre, M.G., Sapkota, T., Tubiello, F.N., Xu, Y., 2019. Food Security. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D.C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)].
- Searchinger, T., Waite, R., Hanson, C., Ranganathan, J., Dumas, P., Matthews, E., Klirs, C., 2019. Creating a sustainable food future: A menu of solutions to feed nearly 10 billion people by 2050. Final report. WRI.
- United Nations, 2015. Resolution adopted by the General Assembly on 25 September 2015. Transforming our world: the 2030 Agenda for Sustainable Development.
- Zdruli, P., Ziadat, F., Nerilli, E., D'Agostino, D., Lahmer, F., Bunning, S., 2016. Sustainable development of land resources.

Acknowledgments: This poster was supported by the LIFE IP CEI Greece [LIFE18 IPE/GR/000013] project, which is co-founded by the LIFE Programme of the European Union and the Green Fund.