

# BOOK OF ABSTRACTS



Organização



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## 23113 | Assessment of Agri-Solar Roof Systems: Exploring Multifunctional Applications

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**Background & Aim:** In the current context, issues related to urban well-being and the sustainability of cities can be addressed through rooftop gardening [1] [2]. This concept reflects the growing need for sustainable urban solutions, which has driven the transformation of underutilized spaces, such as urban rooftops, into productive areas. However, challenges such as lack of technical knowledge, insufficient government support, and lack of leisure time hinder adoption [3]. The combination of agriculture and photovoltaic panels (Agri-Solar Roof Systems) emerges as an innovative strategy to optimize these spaces, allowing for simultaneous food and clean energy production. This approach promotes carbon neutrality, food security, energy efficiency, and climate resilience. However, effective implementation requires evaluating economic and socio-environmental impacts. This study aims to fill this gap by evaluating Agri-Solar Roof Systems in Portugal, focusing on exploring their multifunctional applications and benefits. **Methods:** The study adopts a systematic literature review to consolidate existing knowledge on Agri-Solar Roof Systems. A detailed analysis will identify technical, socio-environmental, and economic challenges and opportunities associated with these systems. In addition, surveys will be conducted with stakeholders to understand the acceptability and key factors influencing adoption in Portugal. **Results:** The results are expected to include technical guidelines for implementing Agri-Solar Roof Systems in Portugal and a case study demonstrating practical applicability and potential impacts. **Conclusions:** The integration of Agri-Solar systems represents a promising solution for urban sustainability, maximizing productivity in underutilized urban spaces through the synergy between agriculture and renewable energy. The results of this study will provide insights for policymakers, businesses, and other stakeholders, contributing to the advancement of public policies and innovative practices for more resilient and sustainable cities.

**Keywords:** Nature-based solution, Food production, Energy Production, Green Roofs, Ecosystem services.

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**References:**

- [1] Holloway, L., Cox, R., Dowler, E., Kneafsey, M., Tuomainen, H., & Venn, L. (2009). Reconnecting consumers, producers and food: Exploring alternatives. *Choice Reviews Online*, 46(11), 46–6158. <https://doi.org/https://doi.org/10.5860/choice.46-6158>
- [2] Hough, M. (2004). *Cities and natural process: A basis for sustainability: Second edition*. In *Cities and Natural Process: A Basis for Sustainability: Second Edition*. <https://doi.org/https://doi.org/10.4324/9780203643471>
- [3] Thapa, S., Nainabasti, A., & Bharati, S. (2021). Assessment of the linkage of urban green roofs, nutritional supply, and diversity status in Nepal. *Cogent Food & Agriculture*, 7(1). <https://doi.org/10.1080/23311932.2021.1911908>



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