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Sommario/riassunto

This volume gathers the latest advances, innovations, and applications in the field of biosystems engineering, as presented at the 12th Conference of the Italian Association of Agricultural Engineering (AIIA), held in Palermo, Italy, on September 19-22, 2022. Focusing on the challenges of improving the resilience of agriculture, forestry and food systems in the post-Covid era, it shows how the research has addressed the following topics: Monitoring and modelling hydraulic and hydrological processes in agriculture and forestry systems; Challenges in stream rehabilitation and soil conservation strategies; Sustainable water resource management under climate change scenarios; Planning safe, healthy and resilient territorial, built and green systems; Cultural heritage preservation and rural landscape protection, planning and management; Plant and livestock production processes and technologies. Healthy and Organic farming. Animal welfare; Energy, waste and by-products smart use; Post-harvest logistics and food chain structures technology; Applications and experiences in smart agriculture and forestry; One Health, management and standardization for agriculture and forestry machinery and structures; Big data, machine learning and data hub in biosystems engineering. The contributions were selected by a rigorous peer-review process, and offer an extensive and multidisciplinary overview of the research in the field of biosystems engineering for sustainable agriculture.