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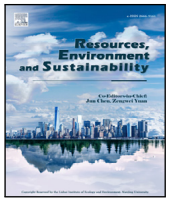

Editorial

Sustainability of food systems and reinforcement of the science-policy interface: Re-focusing on priorities

A reinforcement of the interactions between science and policy is needed now more than ever. This is especially true in the context of the food systems that with the COVID-19 pandemic have clearly shown the dysfunctionalities and structural vulnerabilities of the neoliberal model. In particular, a major investment is needed in better and more relevant knowledge systems and in more efficient science-policy interfaces (Singh et al., 2021). Global food systems in the last decades, have been affected by a growing population, contributing to the overshoot of the planet's capacity to regenerate its biological resources (Galli et al., 2020). Accordingly, a large body of research has highlighted the relevance of food systems in a wide range of global impacts (Smith and Gregory, 2013; Sporchia et al., 2021a,b; Springmann et al., 2016).

Hence, food systems are attracting political attention across the globe, and growing interactions between scientists and policymakers are needed especially due to the fact that they usually act at two distinct levels. Indeed, on September 2021, in the Food Systems Summit (EPRS, 2021), the idea of a new intergovernmental panel providing a global science-policy interface for sustainable food systems was launched. Although the new panel, also called "IPCC for food", has been promptly criticized as its potential capacity to undermine the ability of existing UN bodies (Clapp et al., 2021; Turnhout et al., 2021), such a debate has revealed the urgent need of strengthening the interactions between scientists and policymakers, regardless of the creation of the panel.

While most of the ongoing debate focuses on whether or not such an IPCC for food is needed, and whether its role could be served by the Committee on World Food Security, this editorial prefers to go back to the origin of the issue. In particular, the emphasis here is given to "why" and "how" to measure food systems sustainability to address the principles of the sustainability and guide a transition towards more sustainable food systems across the planet rather than debating on the best science-policy framework to do that.

"What we measure affects what we do. If we have the wrong metrics, we will strive for the wrong things": using these words, the Nobel Prize-winning Joseph Stiglitz, remarked the importance of properly transfer information from science to policy (Stiglitz, 2009). This crucial statement becomes more and more important in the food context where there is a growing need to inform decision making to better identify the multifaceted health and environmental impact of food and dietary choices (Willett et al., 2019; Rockström et al., 2020; Friel et al., 2020; Bentham et al., 2020; Mozaffarian, 2020). Indeed, food systems are responsible for large share of impacts: (i) about one third of the global anthropogenic greenhouse gas emissions (Crippa et al., 2021), (ii) over 90% of humanity's water footprint (Hoekstra and Mekonnen, 2012), (iii) 40% of all habitable land use, casing 80% of deforestation and 70% of biodiversity loss on land (WWF, 2022). Food systems are also responsible for multiple health effects (Clark et al., 2019). Globally, 8 million deaths are attributable to dietary risk factors (Murray et al., 2020), up to 828 million people faced food insecurity in 2021, while more than 3 billion people cannot afford a healthy diet as it costs 60% more than nutrient adequate diets (FAO, 2021). In our era, food systems are also structured in different steps from production to consumption. The supply chain of food systems consists of determined stages that may occur at different time and space. An estimated 30% of the food produced for human consumption globally is lost or wasted somewhere along the food supply chain (FAO, 2015). Moreover, food systems has to be considered as core components of human heritage, where diets play a central role in society and in shaping human behaviour.

Based on this broad picture, and with the Stiglitz's words in mind, appears evident how a new perspective in the interaction between the scientist and the policymaker is needed in the coming years. The former is called for providing more informative approaches capturing the transversal nature of food systems and their intrinsic complexity and multi dimensionality. The latter is called for transforming such a more systemic and complete assessments in a consequent greater capacity of decision addressing the sustainability of food systems. Hence, target-based information represents nowadays the priority to properly lead decision-makers in more effective policy actions. This editorial wants to highlight how providing more comprehensive and informative impact analyses is the current main challenge to be faced at the scientific level. It means: capturing the multi-dimensional characteristics of food systems, identifying proper ways to measure their multi-faceted impact, revealing the potential trade-offs and synergies among their different impacts. Making progresses on these challenges will represent the essential base upon which the reinforcement of the interaction between science and policy should be based. They will require a huge effort in different scientific and political fields that may or may not lead to the creation of specific scientific panels. Future scientific advancements and institutional initiatives are therefore encouraged to promote new forms of transdisciplinary approaches. This brief editorial wants to contribute to the ongoing discussion about the sustainability of food systems and the science-policy interface by helping our colleagues re-focusing the real targets and priorities regardless of deciding on the best science-policy platform to be implemented.

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