

Indigenous knowledge in food system transformations

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Indigenous food systems ensure ecological and socio-economic sustainability but remain marginalized in science and policy. We argue that better documentation, deeper understanding, and political recognition of indigenous knowledge can help transform food systems.

Indigenous knowledge is crucial for sustainable transformations of food systems but often remains marginalized in policy and practice. Controversies surrounding the 2021 UN Food Systems Summit have highlighted this issue, as a broad alliance of academics and activists boycotted the event by arguing that it disempowered indigenous people and constituted an effort by “multinational corporations, philanthropies, and export-oriented countries to [...] capture the global narrative of food systems transformation¹”.

The contestation of the 2021 Summit reflects a deeper tension between increasing emphasis on the importance of indigenous knowledge in academic research and its continued marginalization in institutions and decision-making processes of the global food system. As participants and organizers of the 2021 Summit’s side event *Bridging scientific and indigenous peoples’ knowledge for sustainable and inclusive food systems*, we identified seven key entry points for the inclusion of indigenous knowledge in the negotiation of food systems transformations.

Entry points for indigenous engagement

Learning from case studies and discussions at our side event of the 2021 Summit, we highlight the need for concrete entry points beyond merely symbolic acknowledgment of the importance of indigenous knowledge. We identified seven entry points that can contribute to bridging indigenous and academic knowledge about food systems (Fig. 1). The diversity of entry points reflects the need for a multi-pronged approach that includes an improved understanding of indigenous knowledge systems, more inclusive practices of conservation and negotiation, as well as political articulations of indigenous representation and self-determination.

Co-evolution of ecosystems and knowledge systems. Indigenous people conserve about 80% of the world’s biodiversity² and their knowledge systems have co-evolved with ecosystems, guiding agricultural and other livelihood practices. Despite growing academic interest in the co-evolution of ecosystems and knowledge systems³, agricultural development often fails to recognize the adaptive character of indigenous knowledge and practices. Understanding this co-evolution and adaptation is crucial for situating indigenous food systems and their sustainable roles in wider environments⁴.

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Fig. 1 Seven entry points for engaging indigenous food systems knowledge. Seven entry points indicates approaches ranging from better documentation and understanding of indigenous knowledge to inclusive practices of conservation and negotiation, to political challenges of marginalizing institutional practices and policies that can contribute to bridging indigenous and formal scientific knowledge for sustainable and inclusive food systems.

Documentation. As indigenous food systems knowledge is mostly transferred orally, it is particularly vulnerable to socio-economic and ecological disruptions. The vast majority of indigenous food systems remain poorly documented, further increasing vulnerability to external disruptions and invisibilizing them in debates about the global governance of food systems. Overcoming the marginalization of indigenous knowledge in food systems transitions requires comprehensive documentation both of epistemic resources and of their importance for livelihoods and environmental sustainability.

Loss and resilience. Indigenous knowledge systems are being rapidly eroded. Extensive use of exogenous practices, urbanisation, and global food commodity markets act as mutually reinforcing drivers that foster biodiversity loss, land grabbing, forced displacement of communities and loss of native languages^{5,6}. However, complex patterns of erosion, adaptation, and revitalization⁷ of indigenous knowledge often remain poorly understood by researchers and policymakers. Without accounting for the mechanisms of loss and resilience, policy interventions may adversely affect the preservation and revitalization of indigenous knowledge rather than mitigating its loss.

Strategies for conservation. Academic research on indigenous knowledge benefits indigenous peoples only if it contributes to concrete interventions that support indigenous communities in conserving relationships with local environments. Relationships between people and their environments can only be conserved in-situ. Protecting ecosystems and natural resources while ensuring local communities have access to their lands and rights to practice their culture is essential to maintaining these relationships and must be central to conservation efforts. While indigenous knowledge demands a focus on in-situ conservation, ex-situ methods can play an important supporting role. For example, seeds of local crop varieties in gene banks can play an important role in the transfer of indigenous food systems knowledge

between regions and across generations. At the same time, ex-situ methods need to be developed carefully together with communities as they also create novel risks of exploitative bioprospecting and biopiracy.

Negotiating knowledge diversity. Agricultural research and development have historically targeted indigenous food systems as obstacles to economic growth and modernization⁸. While there is increasing advocacy for the inclusion of indigenous knowledge⁹, its integration often reproduces inequalities: Indigenous knowledge is recognized only insofar as it has a supplementary value for mainstream agricultural development¹⁰. Rather than highlighting the value of indigenous knowledge for indigenous communities, academic research often focuses instrumentally on the usefulness of indigenous knowledge for external agendas in biodiversity conservation or sustainable growth. In contrast, more recent frameworks aim to create frameworks for symmetrical dialogue rather than merely an asymmetrical integration of indigenous knowledge into dominant academic frameworks^{11,12}.

Representation in practices and policy. Contestations of the 2021 UN Food Systems Summit illustrate that the marginalization of indigenous people remains deeply entrenched in major institutions and processes. The global food system continues to be dominated by actors who prioritize formal scientific knowledge—from public funding agencies to the agrifood industry to major non-governmental organizations. Indigenous interest organizations and actors are still often pushed to the periphery of institutional practices and policies. Thus, academic research on indigenous knowledge needs to be combined with concrete mechanisms that reconfigure institutional practices and policies in the food system. Research must connect to practice as transformations of the food system require an active policy stance that challenges the institutional misrepresentation of indigenous knowledge and peoples.

Indigenous self-determination. Different food systems are entangled with different ways of life, highlighting the need to link food security with food sovereignty as it relates to cultural identity, spiritual wellbeing and land stewardship¹³. The marginalization of indigenous food systems is intertwined with colonial legacies of cultural and political domination¹⁴. Food security and sovereignty are therefore part of a wider political struggle for self-determination of indigenous peoples. As endorsed in the *United Nations Declaration on the Rights of Indigenous Peoples*, self-determination implies the right of indigenous peoples to be in control of their own food systems as part of determining their own way of life¹⁵.

Ways ahead

The controversies around the UN Food Systems Summit clearly show that actions speak louder than words, and that the time to act is now. Despite ubiquitous talk about diversity and inclusion in agricultural development, indigenous food systems remain poorly understood, undervalued, and marginalized in practice. Treating indigenous knowledge as an equal in scientific and policy debates is critical in enabling sustainable and just transformations of our food systems. The seven entry points of this article showcase the need for a multi-pronged approach that moves from talk about inclusivity to inclusive practice.

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C.R., H.H., H.C.S., and K.L. developed the idea and organised the side event at the UN Food Summit. D.L., H.C.S., D.V., H.A.M., and C.V.R. contributed to the panel discussions at the side event. D.V. and D.L. prepared the manuscript with the inputs and comments from H.K. and H.H. H.K. prepared the figure and all authors contributed to the finalisation of manuscript.

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