


Editorial

# A Transformative (r)Evolution of the Research on Agriculture through Fostering Human-Nature Connectedness—A Special Issue Editorial

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**Citation:** Vicente-Vicente, J.L.; Quintas-Soriano, C.; López-Rodríguez, M.D. A Transformative (r)Evolution of the Research on Agriculture through Fostering Human-Nature Connectedness—A Special Issue Editorial. *Agriculture* **2022**, *12*, 522. <https://doi.org/10.3390/agriculture12040522>

Received: 29 March 2022

Accepted: 6 April 2022

Published: 7 April 2022

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More and more people live in cities. In recent decades, this, combined with rural abandonment, has resulted in increased land ownership concentration and land grabbing [1–4], with an increase in agricultural intensification [5,6]. This process is leading to an increasingly polarized landscape between abandonment of traditional farming activities and highly intensive agriculture lands. Rural land abandonment is motivated mainly by socio-cultural factors, such as population aging and migration patterns from rural to urban areas [7]. Land abandonment has been described as a complex process with implications at ecological and socio-cultural levels [8]. Primarily, it can support ecological restoration, increase carbon storage or improve habitat quality. However, at social and cultural levels, it can endanger local ecological knowledge, cultural heritage, local identity and can negatively impact rural livelihoods through the loss of agricultural and forest products. On the other hand, highly intense agricultural farming systems are formed by large monocrops, which are extremely simplified systems, very often combined with the application of high rates of pesticides, the plantation of genetically modified species, and the removal of all kinds of wild biological diversity. A similar process has been observed in terms of livestock, with an increase in intensification in farming systems and the appearance of highly intense facilities (i.e., factory farms) [9], to the detriment of the extensive farming systems, which are less economically profitable but have a stronger link to the territory and integration within the available natural resources [10]. This has resulted in trade-offs with different ecosystem services [5,11–14] due to the prioritization of provisioning services (such as food) at the detriment of other supporting, regulating and cultural services. In addition, agricultural intensification is currently threatening the maintenance of traditional indigenous and peasant farming, whose practices have been proven to be beneficial for building up resilient agroecosystems that sustain both ecosystems and societal well-being [15]. This has led, ultimately, to the loss of the connection of people with nature [16,17].

The loss of human–nature connectedness in Western and urbanized societies has one of its paradigmatic examples in the commodification of food, which takes place in a context of an increasingly complex [18,19] and highly vulnerable [20–22] globalized food system. Therefore, it is clear that a transformation of the agri-food system is urgently needed [23].

In this SI, we have collected eleven studies assessing, using a diversity of approaches, how human–nature connectedness can be recovered through agriculture. Many of them are focused on the application of a systemic approach, by considering a set of sustainable agricultural practices, whereas some are focused on studying what management practices can be applied in agricultural systems in order to reconnect people with nature. One article

addresses principles of good governance to create inclusive and integrative processes that support healthy communities and resilient ecosystems, whereas another one is focused on the consumer's side in order to foster societal transformation.

#### *Integrating Natural and Social Considerations for the Transformation of Agri-Food Systems*

To transform agri-food systems, alternative frameworks, approaches and methodologies are needed. A long-standing framework such as agroecology [24] seems to be one of the most suitable methods to include both the ecological and the social dimensions of agri-food systems [25,26] and eventually to contribute to agri-food system change [27]. In this SI, different contributions include agroecology as a framework for the transition toward more sustainable agri-food systems (e.g., [28–31]). However, so far, in the Global North, the majority of the proposed frameworks have been based on applying incremental or reformative practices (e.g., sustainable intensification, sustainable agriculture, conservation agriculture, or integrated pest management) [32], whereas agroecology has been more frequently applied in countries of the Global South [33].

Nevertheless, embracing a new framework is not sufficient to transform the agri-food system. This has to be accompanied by the combination of a set of social research methods and approaches that lead to transformative change in the agricultural systems for sustainability. Thus, in this SI, alternative approaches have been employed, such as conservation biology [34], nature's contribution to people [35], ecosystem services [36,37] and multi-actor authorship approaches [29], which go beyond the biophysical analysis by considering socio-cultural aspects under a more systemic perspective. Most of these approaches imply a broadening in the scale of the study while incorporating knowledge, perceptions, preferences and values from local stakeholders. While typically, agricultural studies are focused at the plot level, embracing these new approaches leads to a broadening of the scale, especially to farm or landscape scales [29,31,35,37–39], and to a lesser extent to regional or foodshed [40] or to country scales [34].

These approaches incorporate methodologies from social sciences that are not usually included in agricultural studies. Thus, many of the studies used questionnaires as their main data source, although acquisition was different depending on the purposes and specificities of the study. For instance, Schwartz et al. [36] used GIS software to develop a participatory mapping exercise, Murillo-López et al. [35] used semi-structured interviews to collect qualitative data, whereas Chen et al. [39] and Gugerell et al. [38] developed questionnaires and interviews for quantitative analysis to evaluate farmers' ecological cognition and different proximities, respectively. However, other studies required mixed complex methods incorporating agroecology and involving multi-actor, agricultural knowledge, and innovation systems [29,37]. Besides these innovative approaches, there are others not included in this SI that can also be used or combined with those mentioned. For instance, very often, agroecology is combined with the use of participatory research methods, such as participatory action research [41], and on the other hand, over the last few years, citizen-science methods have become an emerging topic in sustainable agriculture [42].

Therefore, the application of systemic frameworks comprising a set of approaches and methods covering the socio-ecological dimensions of agriculture would address the study of human–nature connectedness in agricultural systems. However, this would imply the inclusion of methods that are more commonly used in social sciences and ecology. Therefore, we think that future studies on agriculture should focus on a more effective integration of social considerations.

#### *Transdisciplinarity as a Driver of Policy Changes and Sustainability Learning in Agri-Food Systems*

In addition to the above-mentioned academic efforts, there is growing acceptance that sustainability transitions also require transdisciplinary work schemes to encourage changes in institutional practices and individual behaviors to progress towards the implementation of a sustainable agri-food system (e.g., [43]). Transdisciplinary work schemes aim to address sustainability challenges by integrating knowledge from various scientific and societal bodies of knowledge [44] through co-learning and knowledge co-production processes [45].

In doing so, scientists from many disciplines (e.g., ecology, agriculture, sociology, and anthropology) and non-scientists (e.g., decision makers, technicians, farmers, and local communities) work together to find evidence-based solutions to deal with policy needs and societal concerns in the field of sustainability. The conceptual basis of transdisciplinary science recognizes that research questions and solutions are framed in policy and societal contexts to provide realistic and context-specific pathways to help the policy community and social actors progress towards a sustainable future [46]. On this basis, transdisciplinary work schemes create methodological tools through which scientists can adopt a more active role and produce mission-oriented research and innovation to help agricultural systems transit towards sustainability [47]. Therefore, they can be considered a means for scientific knowledge to be a driver of societal learning and policy changes while facilitating a culture of shared responsibility for sustainability among the public, academia, private sectors, and consumers to advance towards sustainability [48]. Even though transdisciplinary research has been gradually increasing in multiple areas of sustainable governance such as water, forests, and even agriculture [49,50], more studies from local to global scales are needed to foster people's awareness of our dependence on nature and to collectively support a real transformative (r)evolution of the agri-food system towards sustainability. In this SI, some studies contribute to progress in this direction by providing successful multi-actor initiatives that show how collaborative work at different scales can generate positive impacts to reorientate agri-food systems towards sustainability [30,31].

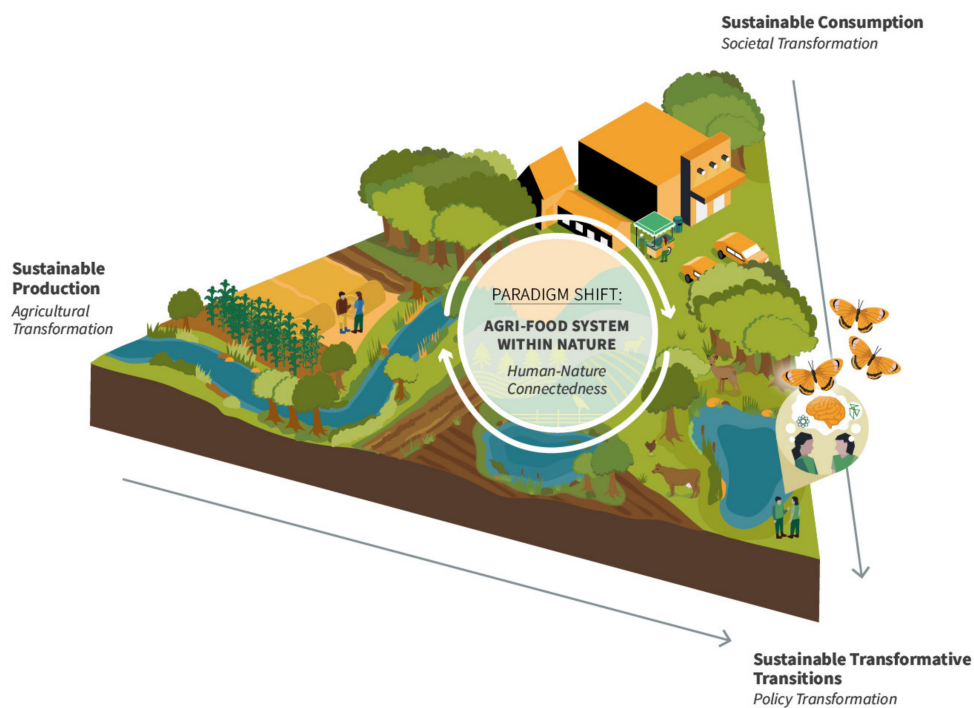
#### *Shifting the Paradigm in the Research on Agriculture*

The need for a reconnection of people with nature implies a shift in the paradigm that places the agricultural system within nature and its ecological boundaries. For that purpose, sustainable production and consumption should be the starting point to develop agricultural and societal transformation pathways (Figure 1). As the articles presented in this SI show, pathways toward sustainability can be based on scientific evidence acquired through the application of systemic frameworks, including new socio-ecological approaches and socio-cultural methodologies. In addition, inclusive governance approaches will be needed in order to provide suitable conditions for developing sustainable transformative transitions (Figure 1).

We have identified some specific aspects that, in our opinion, should be changed in agricultural research as part of this paradigm shift:

- From “crops” to “agroecosystems”. Reducing the consideration of agricultural systems to just crops implies treating food only as a commodity, and therefore, to something that can be easily displaced far from its place of origin. On the contrary, when looking at crops within agroecosystems, it is acknowledged that food—a provisioning service—is produced through complex socio-ecological relationships, and therefore, its production has an impact on many different ecosystem services (e.g., soil fertility, biodiversity, climate regulation, and culture). Thereby, recognizing agri-food systems as coupled human–environment systems would support enhanced sustainability outcomes from agroecosystems.
- From the “plot” to the “landscape” vision of a “farm”. The scale of a plot does not include the many ecological relationships that are taking place at the landscape level. A farm should be managed as a whole, as a habitat, instead of being perceived as a set of plots that can be managed separately. Future research should be focused on the farm level, in order to capture different socio-ecological impacts. In addition, this scale may make the multiple human–nature connections that these areas provide visible.
- From “agriculture” to “(agri) food systems”. Agriculture is just one part of the whole agri-food system. By tackling only one side of the system we are avoiding the consumption side as well as the socio-cultural aspects of food production. In order to achieve sustainability, it will be mandatory to consider the multiple dimensions of agri-food systems, as well as the telecouplings associated with them.

- From “food as a commodity” to a sustainable food system of “landscape products”. The study of agri-food systems is more than just studying the interactions along the supply chain or the food network. It should also imply the study of the social–ecological conditions and the non-chain actors in the areas of production. In this sense, the incorporation of landscape products as a way to consider food from multiple (ecological, social, and economic) dimensions will promote more resilient social–ecological systems [51].
- From the “social”, “ecological” or “agronomic” perspectives to the “transdisciplinarity” vision. Agri-food systems should be addressed by people with different epistemologies, backgrounds and perspectives, tackling it as a complex system with multiple ramifications and interlinkages, which requires the alignment of scientific advances, policy needs, and societal concerns at different scales to transit collectively towards sustainability.
- From the “top-down/hierarchical and sectoral decision-making”, to the “inclusive and integrative governance”. So far, traditional governance approaches based on top-down models and sectoral policies across different scales have not necessarily resulted in positive outcomes for sustainability. The active participation of stakeholders and local communities in governance systems is increasingly recognized as crucial to strengthening the links between governmental and non-governmental institutions to: (1) facilitate social learning processes that encourage building understanding and trust in the sustainability framework, and (2) promote the policy community and the rest of society to act as agents of change to advance together towards sustainability. Moreover, the articulation of institutional efforts at multiple scales and sectors is pivotal in developing coherent policies and actions that support biodiversity conservation and human well-being. By implementing inclusive and integrative governance approaches it would be possible to develop the policy and social changes needed to implement sustainable transformative transitions in agri-food systems.



**Figure 1.** A shift in the paradigm is needed to reconnect people with nature. The new paradigm uses sustainable production and consumption as the starting points to develop a transformative transition to an agri-food system within nature. To achieve that, a policy transformation based on inclusive and integrative governance approaches is needed, enabling conditions for fostering human-nature connectedness, and eventually, for developing sustainable transitions.

Our planet is in a state of emergency. Agri-food systems can worsen the problem (e.g., by emitting greenhouse gasses or contributing to the decrease in biodiversity) or can be part of the solution, by mitigating (e.g., soil organic carbon sequestration, reducing the emission of greenhouse gasses or fostering biodiversity) and adapting (e.g., resilient agroecosystems and food networks) to climate change. There is wide consensus that the current globalized agri-food system is contributing to worsening the social–ecological planetary emergency, and that transformative solutions are urgently needed. We encourage researchers in agriculture to adopt the aforementioned paradigm shift and to develop transformative studies so that we can all contribute to creating agri-food systems within the planetary boundaries.

**Author Contributions:** Conceptualization, J.L.V.-V., C.Q.-S. and M.D.L.-R.; investigation, J.L.V.-V., C.Q.-S. and M.D.L.-R.; writing—original draft preparation, J.L.V.-V., C.Q.-S. and M.D.L.-R.; writing—review and editing, J.L.V.-V., C.Q.-S. and M.D.L.-R.; visualization, J.L.V.-V.; supervision, J.L.V.-V. All authors have read and agreed to the published version of the manuscript.

**Acknowledgments:** We thank Olivia S. Meyer for supporting us with the graphic design and Annette Piore for providing insights for the elaboration of this text. We also thank all the authors that have contributed to this Special Issue.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

- Bunkus, R.; Theesfeld, I. Land Grabbing in Europe? Socio-Cultural Externalities of Large-Scale Land Acquisitions in East Germany. *Land* **2018**, *7*, 98. [[CrossRef](#)]
- Estel, S.; Kuemmerle, T.; Alcántara, C.; Levers, C.; Prishchepov, A.; Hostert, P. Mapping Farmland Abandonment and Recultivation across Europe Using MODIS NDVI Time Series. *Remote Sens. Environ.* **2015**, *163*, 312–325. [[CrossRef](#)]
- Palšová, L.; Bandlerová, A.; Machničová, Z. Land Concentration and Land Grabbing Processes—Evidence from Slovakia. *Land* **2021**, *10*, 873. [[CrossRef](#)]
- Van der Zanden, E.H.; Verburg, P.H.; Schulp, C.J.E.; Verkerk, P.J. Trade-Offs of European Agricultural Abandonment. *Land Use Policy* **2017**, *62*, 290–301. [[CrossRef](#)]
- Clough, Y.; Kirchweger, S.; Kantelhardt, J. Field Sizes and the Future of Farmland Biodiversity in European Landscapes. *Conserv. Lett.* **2020**, *13*, e12752. [[CrossRef](#)]
- Bruno, D.; Sorando, R.; Álvarez-Farizo, B.; Castellano, C.; Céspedes, V.; Gallardo, B.; Jiménez, J.J.; López, M.V.; López-Flores, R.; Moret-Fernández, D.; et al. Depopulation Impacts on Ecosystem Services in Mediterranean Rural Areas. *Ecosyst. Serv.* **2021**, *52*, 101369. [[CrossRef](#)]
- Rey Benayas, J.M. Abandonment of Agricultural Land: An Overview of Drivers and Consequences. *CAB Rev.* **2007**, *2*, 1–14. [[CrossRef](#)]
- Quintas-Soriano, C.; Buerkert, A.; Plieninger, T. Effects of Land Abandonment on Nature Contributions to People and Good Quality of Life Components in the Mediterranean Region: A Review. *Land Use Policy* **2022**, *116*, 106053. [[CrossRef](#)]
- Sanchez Carpio, D.; Stanka, B. *The Urgent Case to Stop Factory Farms in Europe*; Friends of the Earth Europe and Food & Water Action Europe: Brussels, Belgium, 2020; p. 36.
- Bertolozzi-Caredio, D.; Garrido, A.; Soriano, B.; Bardaji, I. Implications of Alternative Farm Management Patterns to Promote Resilience in Extensive Sheep Farming. *J. Rural Stud.* **2021**, *86*, 633–644. [[CrossRef](#)]
- Raven, P.H.; Wagner, D.L. Agricultural Intensification and Climate Change Are Rapidly Decreasing Insect Biodiversity. *Proc. Natl. Acad. Sci. USA* **2021**, *118*, e2002548117. [[CrossRef](#)]
- Eggleton, P. The State of the World's Insects. *Annu. Rev. Environ. Resour.* **2020**, *45*, 61–82. [[CrossRef](#)]
- Dreoni, I.; Matthews, Z.; Schaafsma, M. The Impacts of Soy Production on Multi-Dimensional Well-Being and Ecosystem Services: A Systematic Review. *J. Clean. Prod.* **2022**, *335*, 130182. [[CrossRef](#)]
- Machovina, B.; Feeley, K.J.; Ripple, W.J. Biodiversity Conservation: The Key Is Reducing Meat Consumption. *Sci. Total Environ.* **2015**, *536*, 419–431. [[CrossRef](#)]
- FAO. *Indigenous Peoples' Food Systems: Insights on Sustainability and Resilience from the Front Line of Climate Change*; FAO, Alliance of Bioversity International, and CIAT: Rome, Italy, 2021.
- Pacheco-Romero, M.; Kuemmerle, T.; Levers, C.; Alcaraz-Segura, D.; Cabello, J. Integrating Inductive and Deductive Analysis to Identify and Characterize Archetypical Social-Ecological Systems and Their Changes. *Landsc. Urban Plan.* **2021**, *215*, 104199. [[CrossRef](#)]
- Riechers, M.; Pătru-Dușe, I.A.; Balázs, Á. Leverage Points to Foster Human–Nature Connectedness in Cultural Landscapes. *Ambio* **2021**, *50*, 1670–1680. [[CrossRef](#)]
- Puma, M.J. Resilience of the Global Food System. *Nat. Sustain.* **2019**, *2*, 260–261. [[CrossRef](#)]

19. Puma, M.J.; Bose, S.; Chon, S.Y.; Cook, B.I. Assessing the Evolving Fragility of the Global Food System. *Environ. Res. Lett.* **2015**, *10*, 024007. [[CrossRef](#)]
20. Savary, S.; Akter, S.; Almekinders, C.; Harris, J.; Korsten, L.; Rötter, R.; Waddington, S.; Watson, D. Mapping Disruption and Resilience Mechanisms in Food Systems. *Food Sec.* **2020**, *12*, 695–717. [[CrossRef](#)]
21. Bailey, R.; Wellesley, L. *Chokepoints and Vulnerabilities in Global Food Trade*; Chatham House, the Royal Institute of International Affairs: London, UK, 2017; ISBN 978-1-78413-230-9.
22. Kumm, M.; Kinnunen, P.; Lehtikainen, E.; Porkka, M.; Queiroz, C.; Röö, E.; Troell, M.; Weil, C. Interplay of Trade and Food System Resilience: Gains on Supply Diversity over Time at the Cost of Trade Interdependency. *Glob. Food Secur.* **2020**, *24*, 100360. [[CrossRef](#)]
23. Webb, P.; Benton, T.G.; Beddington, J.; Flynn, D.; Kelly, N.M.; Thomas, S.M. The Urgency of Food System Transformation Is Now Irrefutable. *Nat. Food* **2020**, *1*, 584–585. [[CrossRef](#)]
24. Altieri, M.A.; Farrell, J.G.; Hecht, S.B.; Liebman, M.; Magdoff, F.; Murphy, B.; Norgaard, R.B.; Sikor, T.O. *Agroecology: The Science of Sustainable Agriculture*, 2nd ed.; CRC Press: Boca Raton, FL, USA, 2019; ISBN 978-0-429-49546-5.
25. FAO. *The 10 Elements of Agroecology: Guiding the Transition to Sustainable Food and Agricultural Systems*; FAO: Italy, Rome, 2018.
26. HLPE Report #14—Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems That Enhance Food Security and Nutrition. 2019, p. 163. Available online: <https://www.fao.org/family-farming/detail/en/c/1263887/> (accessed on 28 March 2022).
27. Gliessman, S. Transforming Food Systems with Agroecology. *Agroecol. Sustain. Food Syst.* **2016**, *40*, 187–189. [[CrossRef](#)]
28. Mehrabi, S.; Perez-Mesa, J.C.; Giagnocavo, C. The Role of Consumer-Citizens and Connectedness to Nature in the Sustainable Transition to Agroecological Food Systems: The Mediation of Innovative Business Models and a Multi-Level Perspective. *Agriculture* **2022**, *12*, 203. [[CrossRef](#)]
29. Giagnocavo, C.; de Cara-García, M.; González, M.; Juan, M.; Marín-Guirao, J.I.; Mehrabi, S.; Rodríguez, E.; van der Blom, J.; Crisol-Martínez, E. Reconnecting Farmers with Nature through Agroecological Transitions: Interacting Niches and Experimentation and the Role of Agricultural Knowledge and Innovation Systems. *Agriculture* **2022**, *12*, 137. [[CrossRef](#)]
30. Wilkes, J. Reconnecting with Nature through Good Governance: Inclusive Policy across Scales. *Agriculture* **2022**, *12*, 382. [[CrossRef](#)]
31. González-Rosado, M.; Parras-Alcántara, L.; Aguilera-Huertas, J.; Lozano-García, B. Building an Agroecological Process towards Agricultural Sustainability: A Case Study from Southern Spain. *Agriculture* **2021**, *11*, 1024. [[CrossRef](#)]
32. Pretty, J. Intensification for Redesigned and Sustainable Agricultural Systems. *Science* **2018**, *362*, eaav0294. [[CrossRef](#)]
33. Altieri, M.A.; Nicholls, C.I. Agroecology: A Brief Account of Its Origins and Currents of Thought in Latin America. *Agroecol. Sustain. Food Syst.* **2017**, *41*, 231–237. [[CrossRef](#)]
34. Molina-Pardo, J.L.; Rodríguez-Caballero, E.; Cueto, M.; Barranco, P.; Sánchez-Robles, M.; Laguía-Allué, A.; Giménez-Luque, E. Effects of Agricultural Use on Endangered Plant Taxa in Spain. *Agriculture* **2021**, *11*, 1097. [[CrossRef](#)]
35. Murillo-López, B.E.; Castro, A.J.; Feijoo-Martínez, A. Nature’s Contributions to People Shape Sense of Place in the Coffee Cultural Landscape of Colombia. *Agriculture* **2022**, *12*, 457. [[CrossRef](#)]
36. Schwartz, C.; Shaaban, M.; Bellingrath-Kimura, S.D.; Pierr, A. Participatory Mapping of Demand for Ecosystem Services in Agricultural Landscapes. *Agriculture* **2021**, *11*, 1193. [[CrossRef](#)]
37. Acebes, P.; Iglesias-González, Z.; Muñoz-Galvez, F.J. Do Traditional Livestock Systems Fit into Contemporary Landscapes? Integrating Social Perceptions and Values on Landscape Change. *Agriculture* **2021**, *11*, 1107. [[CrossRef](#)]
38. Gugerell, C.; Sato, T.; Hvitsand, C.; Toriyama, D.; Suzuki, N.; Penker, M. Know the Farmer That Feeds You: A Cross-Country Analysis of Spatial-Relational Proximities and the Attractiveness of Community Supported Agriculture. *Agriculture* **2021**, *11*, 1006. [[CrossRef](#)]
39. Chen, Z.; Sarkar, A.; Hasan, A.K.; Li, X.; Xia, X. Evaluation of Farmers’ Ecological Cognition in Responses to Specialty Orchard Fruit Planting Behavior: Evidence in Shaanxi and Ningxia, China. *Agriculture* **2021**, *11*, 1056. [[CrossRef](#)]
40. Mouléry, M.; Sanz Sanz, E.; Debolini, M.; Napoléone, C.; Josselin, D.; Mabire, L.; Vicente-Vicente, J.L. Self-Sufficiency Assessment: Defining the Foodshed Spatial Signature of Supply Chains for Beef in Avignon, France. *Agriculture* **2022**, *12*, 419. [[CrossRef](#)]
41. López-García, D.; Cuéllar-Padilla, M.; de Azevedo Olival, A.; Laranjeira, N.P.; Méndez, V.E.; Peredo y Parada, S.; Barbosa, C.A.; Barrera Salas, C.; Caswell, M.; Cohen, R.; et al. Building Agroecology with People. Challenges of Participatory Methods to Deepen on the Agroecological Transition in Different Contexts. *J. Rural Stud.* **2021**, *83*, 257–267. [[CrossRef](#)]
42. Ebitu, L.; Avery, H.; Mourad, K.A.; Enyetu, J. Citizen Science for Sustainable Agriculture—A Systematic Literature Review. *Land Use Policy* **2021**, *103*, 105326. [[CrossRef](#)]
43. Lewandowski, I. *Bioeconomy: Shaping the Transition to a Sustainable, Biobased Economy*; Springer: Berlin/Heidelberg, Germany, 2017; ISBN 978-3-319-68152-8.
44. Lang, D.J.; Wiek, A.; Bergmann, M.; Stauffacher, M.; Martens, P.; Moll, P.; Swilling, M.; Thomas, C.J. Transdisciplinary Research in Sustainability Science: Practice, Principles, and Challenges. *Sustain. Sci.* **2012**, *7*, 25–43. [[CrossRef](#)]
45. Angelstam, P.; Andersson, K.; Annerstedt, M.; Axelsson, R.; Elbakidze, M.; Garrido Rodríguez, P.; Grahn, P.; Jönsson, K.I.; Pedersen, S.; Schlyter, P.; et al. Solving Problems in Social-Ecological Systems: Definition, Practice and Barriers of Transdisciplinary Research. *Ambio* **2013**, *42*, 254–265. [[CrossRef](#)]

46. Spangenberg, J.H. Sustainability Science: A Review, an Analysis and Some Empirical Lessons. *Environ. Conserv.* **2011**, *38*, 275–287. [[CrossRef](#)]
47. Egea, F.J.; López-Rodríguez, M.D.; Oña-Burgos, P.; Castro, A.J.; Glass, C.R. Bioeconomy as a Transforming Driver of Intensive Greenhouse Horticulture in SE Spain. *New Biotechnol.* **2021**, *61*, 50–56. [[CrossRef](#)]
48. López-Rodríguez, M.D. Science—Policy Interfaces in the Area of Environmental Governance: Empirical Tests for Its Methodological Development. PhD Thesis, University of Almería, Almería, Spain, 2016.
49. Schneider, F.; Fry, P.; Ledermann, T.; Rist, S. Social Learning Processes in Swiss Soil Protection—The ‘From Farmer–To Farmer’ Project. *Hum. Ecol.* **2009**, *37*, 475–489. [[CrossRef](#)]
50. Castro, A.J.; López-Rodríguez, M.; Giagnocavo, C.; Giménez, M.; Céspedes, L.; La Calle, A.; Gallardo, M.; Pumares, P.; Cabello, J.; Rodríguez, E.; et al. Six Collective Challenges for Sustainability of Almería Greenhouse Horticulture. *Int. J. Environ. Res. Public Health* **2019**, *16*, 4097. [[CrossRef](#)]
51. Garcia-Martin, M.; Torralba, M.; Quintas-Soriano, C.; Kahl, J.; Plieninger, T. Linking Food Systems and Landscape Sustainability in the Mediterranean Region. *Landsc. Ecol.* **2021**, *36*, 2259–2275. [[CrossRef](#)]