Transdisciplinary learning

Enhancing Food Security in the Northeast through Regional Food Systems

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Transdisciplinary: a definition

"[H]ere we define transdisciplinarity as a research approach that includes multiple scientific disciplines (interdisciplinarity) focusing on shared problems and the active input of practitioners from outside academia."
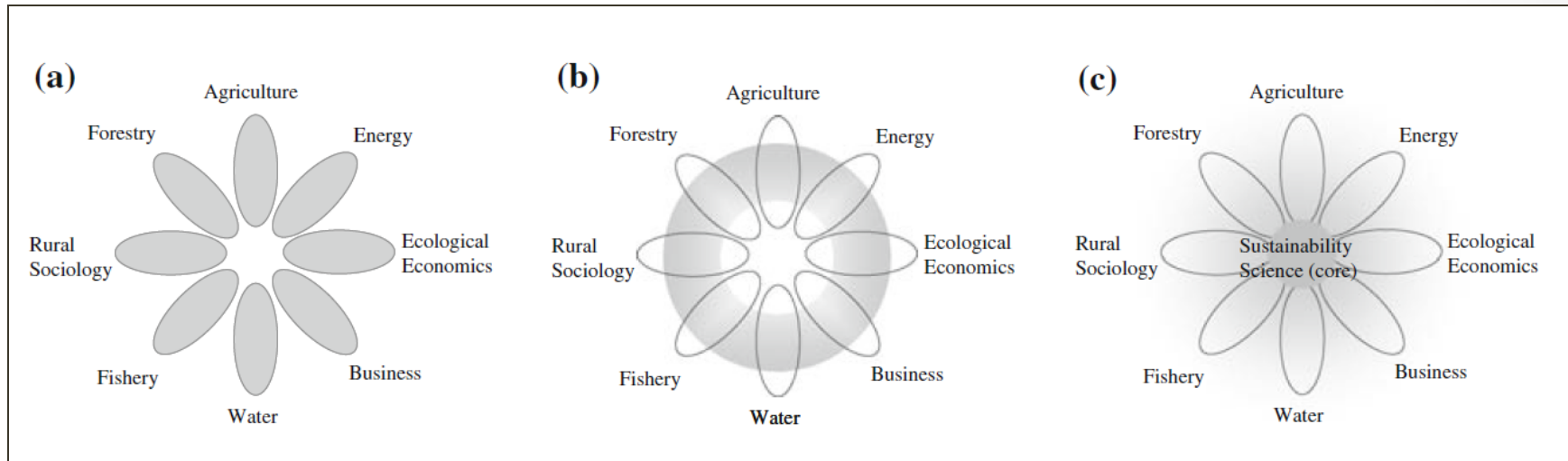
- Brandt et al. (2013, p.1)

From **Brandt**, P., Ernst, A., Gralla, F., Luederitz, C., Lang, D.J., Newig, J., Reinert, F., Abson, D.J., and von Wehrden, H. 2013. A review of transdisciplinary research in sustainability science. *Ecological Economics* 92: 1-15.

More elements of transdisciplinarity

- Mutual learning occurs
- Disciplinary insights are integrated AND comprehensive understanding emerges
- A common language is developed
- New knowledge is produced
- Communication builds bridges between disciplines AND helps to translate findings

From **Jahn**, T., Bergmann, M., and Keil, F. 2012. Transdisciplinarity: Between Mainstreaming and Marginalization. Ecological Economics 79: 1-10.

Multi-Inter-Trans-disciplinary

Multidisciplinary   Interdisciplinary   Transdisciplinary

From **Kajigawa**, Y. 2008. Research core and framework of sustainability science. *Sustainability Science* 3: 215-239.
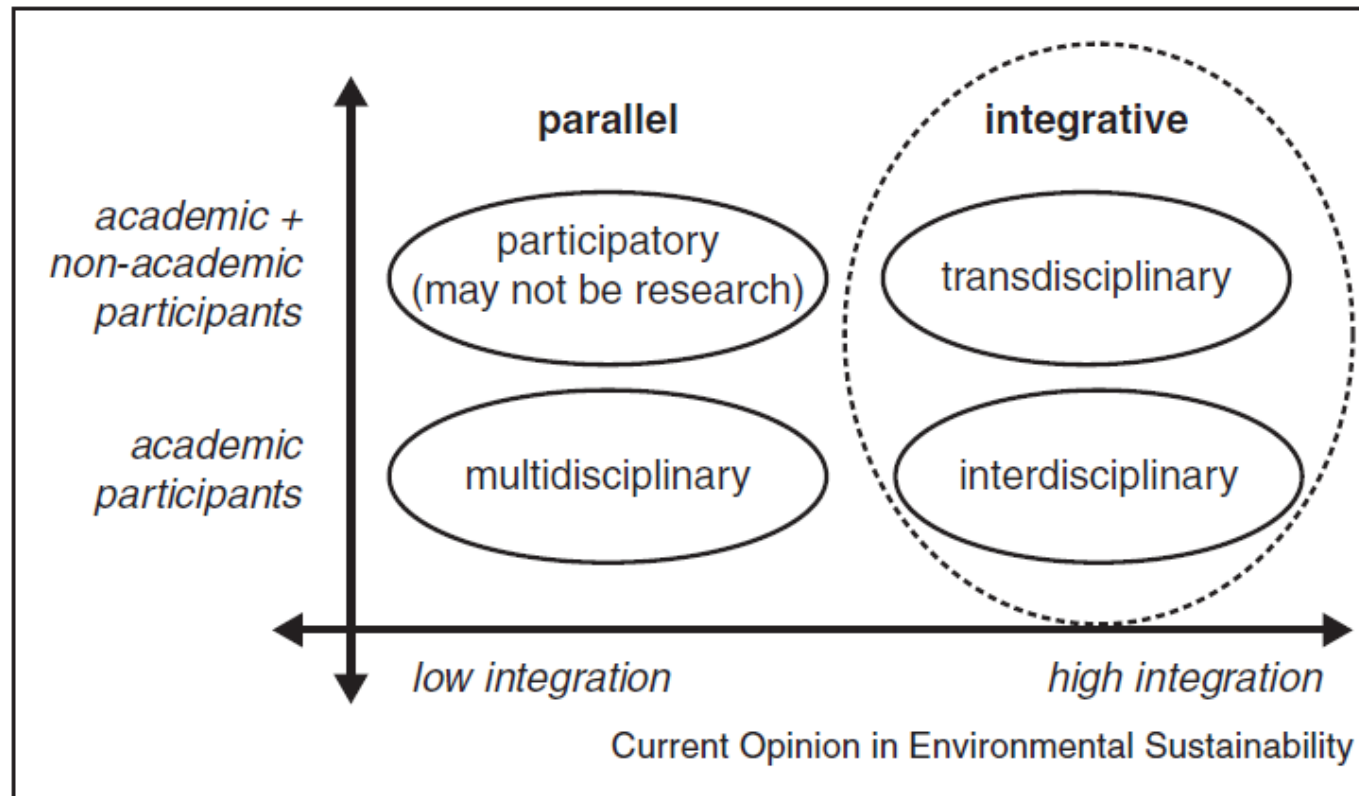
Integration and participation

Fig. 1 from **Mauser**, W., Klepper, G., Rice, M., Schmalzbauer, B.S., Hackman, H., Leemans, R., and Moore, H. 2013. Transdisciplinary global change research: the co-creation of knowledge for sustainability. *Current Opinion in Environmental Sustainability* 5: 420-431.

Five challenges to transdisciplinarity

1. Lack of coherent framing
2. Integration of methods
3. Research process and knowledge production
4. Engaging practitioners
5. Generating impact

Brandt et al. (2013)

Ingredients of success

- Expertise/competence in communications
- Leadership structure
- Cohesion among members
- Utilization of principles of systems theory
- Spending time together
- Practicing trust
- Task talk, including discussions of language differences
- Demonstrating presence
- Reflexive talk
- Humor
- Discussions outside formal meetings, interpersonal bonding

From **Thompson**, J.L. 2009. Building collective communication competence in interdisciplinary research teams. Journal of Applied Communication Research 37(3): 278-297.

Transdisciplinarity within EFSNE

Across project

- Orienting goal to frame problem
- Mixed methods approach
- Cross-project papers to synthesize findings

Research teams

- Building relationships: researchers, store owners, community liaisons
- Case studies inform supply chain models
- In-person meetings to enhance collaboration

Outreach and education

- Opportunities for students to interact across disciplines & institutions
- Multi-disciplinary topical learning community on modeling