Capturing community(-building) effects of citizen science activities in agri-food using Social Network Analysis – joint exploration of method

Session at 2nd ECSA Agri-Food Working Group Meeting, 17-18 June 2025, Montpellier, France

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Do you agree that agri-food citizen science contributes to rural/urban community building?

Have you studied community-building in (agri-food) citizen science?

How interested are you in studying community-building with structured tools?

Motivation and expectations

- Task in project to map stakeholder connections and community-building in rural agrobiodiversity citizen science
- We can do better than just map stakeholders
- Explore new approach and perspective, non-committal, curious, playful

Session

Short introduction and context (10min)

- Introduction to Social Network Analysis
- SNA in agri-food and in citizen science

Working in groups (1h)

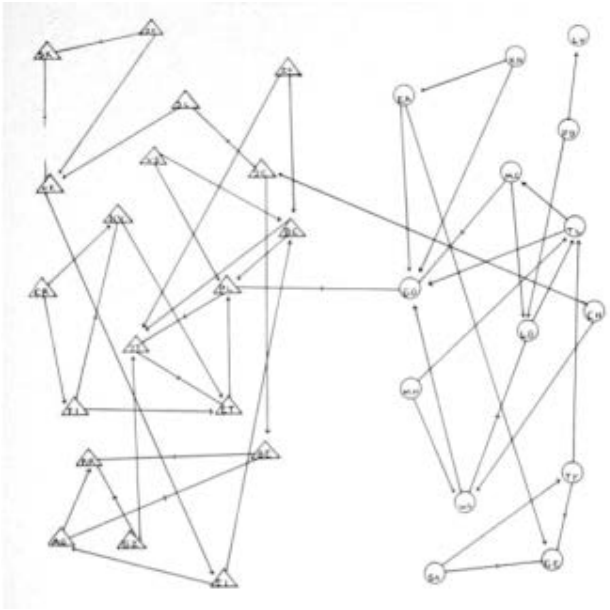
- Selecting one “case” per group: citizen science in agri-food
- Considering notions of community and community development/-building
- Who are the actors and what are their roles? (15 min)
- What are their interactions? (15 min)
- Feeding back (15 min)

Discussion (10min)

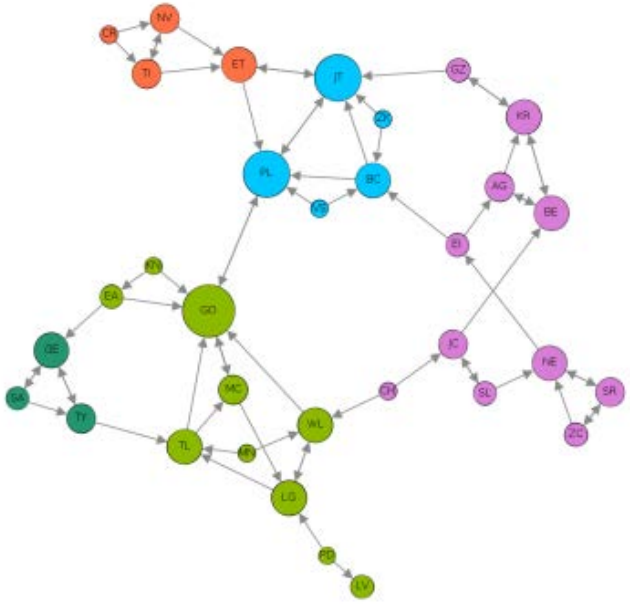
- Appetite for more?

What is Social Network Analysis?

- SNA enables **structurally explicit** study of actors and their relationships in social systems
- **Nodes** = individuals/entities, **Edges** = relationships/interactions
- Helps identify **key actors and roles** (central, connectors /funnels/ bottlenecks), and community clusters (amongst others)
- Highlights **information flows**
- **Qualitative** analysis
- **Quantitative** measures (graph theory)



Moreno and Jennings' network visualization ("sociogram") of the social network of 3rd graders (1934), identifying two main communities based on gender. "Birth" of SNA.



The same network visualized using a community-detection algorithm (modularity) identifying more fine-grained communities and bridges.

From: Demival Vasques Filho (2022) https://dhlab.hypotheses.org/2363

Why study [community building] in agri-food citizen science networks?

Understand composition of social network and effects of citizen science activities

- Participant connections and information flows
- Change of composition over time due to citizen science activities

Identify central roles, power dynamics and leverage points

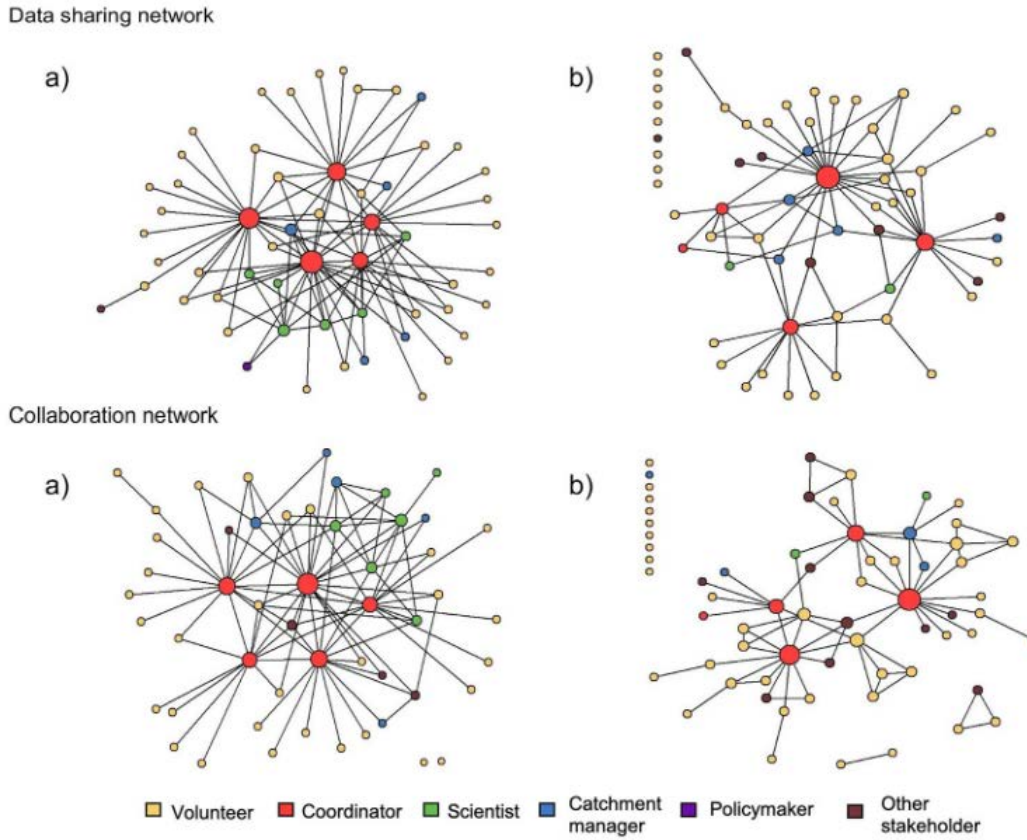
- Main contributors, isolated or disconnected individuals, influencers, knowledge brokers, marginalized groups
- Improve communication, engagement and inclusiveness strategies

SNA in agri-food research: examples

- Seed exchange networks (Thomas et al. 2019, 2022)
- Advice networks in 'Localized Agri-Food Systems' to better understand competitive advantages and innovation dynamics (Chiffoleau and Touzard, 2014)
- The effect of food policy instruments (Gaitán-Cremaschi et al., 2022)
- Resilience, cooperation and trust in local food supply chains (Jarosz, 2000)
- Inclusion patterns in small-scale agri-food business clusters (Ramirez et al., 2018)
- Social capital as a catalyst and barrier to activate 'Localized Agri-Food Systems' and collective action (Crespo et al., 2014; Enriquez-Sanchez et al. 2017)

SNA in citizen science research (Bonney et al., 2023)

- Social networks commonly acknowledged as being key in citizen science
- Treated as metaphor, rather than quantified or actively describing the interactional patterns in citizen science.
- Couple articles exploring social networks of **online** communities in citizen science and crowdsourcing.
- **Very few** articles exploring **place-based citizen science networks** and related outcomes
  - Bonney et al. (2023): *data sharing* and *collaboration networks* of community-based water monitoring programs.
  - Richter et al. (2017): drivers of *long-term engagement* in German butterfly monitoring scheme.



Not yet applied to agri-food citizen science

Working in groups

Working in groups

1. Selecting one citizen science in agri-food “case”
2. Considering notions of **community and community development**/-building (10 min)
3. Who are the **actors and what are their roles**? (15 min)
4. What are their **interactions**? (15 min)
5. Feeding back (15 min)

Theodori (2006)

*Community is defined as a **place-oriented process of interrelated actions** through which members of a local population express a shared sense of identity while engaging in the common concerns of life (grounded in interactional theory by Kaufman 1959; Wilkinson 1991).*

*Community development is **purposive action and interaction** undertaken with positive intentions at improving community structure. The purposive and positive actions of actors are direct attempts to establish and/or strengthen the **community as an interlinking and coordinating structure of human relationships**. Community development exists in the efforts and **interactions of people** and not necessarily in goal achievement.*

Actors

Who are the actors and what are their roles? Are they representatives of some organisation or group or acting in a non-formal capacity (individuals)? Be specific and detailed! How many persons of this "actor“ type participate? What other actors are linked to this actor in participating in the citizen science activity?

Interactions

What types of interactions happen between actors before, during and after the citizen science activity, associated with building community? Be nuanced and specific and identify whether these interactions are directed or reciprocal!

Discussion

Thank you

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