Thematic Piece: Governance

Joint Programming Initiative on Agriculture, Food Security and Climate Change FACCEJPI.NET

In this series of thematic pieces, we spotlight FACCE-JPI projects on a specific theme. This piece will centre on projects with the theme of governance.

What is Governance and why is it important for sustainable agriculture in a changing climate?

Governance is the range of social processes and practices involved in 'solving societal problems and creating societal opportunities through interactions among civil, public and private actors' (Kooiman et al., 2008) . Agriculture faces several ecological and societal challenges, such as climate change, biodiversity loss and nitrogen pollution. Many call for a transformation of agriculture to meet these challenges. Effective governance for agriculture, and more broadly, food systems, is needed to meet these challenges.

Civil-public-private-partnerships (cp³): collaborative governance approaches for policy innovation to enhance biodiversity and ecosystem services delivery in agricultural landscapes

BiodvERsA/FACCE-JPI call

Duration: May 1 2015-April 30, 2018

Short description of the project

cp³ was focused on the analysis of collaborative governance approaches, understood as partnerships between actors from the civil, public and private spheres of society. The cp³ objectives were to investigate existing governance models in three case studies in Germany, Austria, and the Netherlands and identify, describe, and analyse agricultural production practices linked to the different governance models to explore their relations to ecosystem services, food production and biodiversity targets, including existing trade-offs and synergies. To do so, an analytical framework was developed, based on agricultural location theory to exemplify possible pathways to how governance can affect ecosystem services provision through agricultural production practices.

- governance and bad outcomes for the ecosystem.
- Spatial misfit can be mitigated through **collaborative governance approaches** open to all concerned actors of a problem, who then can engage to work out solutions specifically adjusted to the local conditions.
- Temporal misfit could be mitigated through the **creation of more durable and flexible solutions**, also providing actors with opportunities for learning, innovation, and adaptive management.
- Functional misfit could be addressed through **improved decision making** and **leveraging of additional resources**, e.g. through voluntary work and raising additional private funds.
- **Collaborative governance approaches** tend to be **better adapted** to manage ecosystem services at the local and regional levels than market-based or 'command and control' models.
- Collaborative governance approaches can function as **boundary organisations** allowing actors with divergent interests to work together.

Major publications

Bethwell, C., Sattler, C., Stachow, U. (2022) An analytical framework to link governance, agricultural production practices, and the provision of ecosystem services in agricultural landscapes. Ecosystem Services 53, Article 101402. https://doi.org/10.1016/j.ecoser.2021.101402

Sattler, C., Schröter, B. (2022) Collective action across boundaries: collaborative network initiatives as boundary organizations to improve ecosystem services governance. Ecosystem Services 56, Article 101452. https://doi.org/10.1016/j.ecoser.2022.101452

Metzger, J. P., Fidelman, P., Sattler, C., Schröter, B., Maron, M., Eigenbrod, F., Fortin, M.-J., Hohlenwerger, C., Rhodes, J. R. (2021) Connecting governance interventions to ecosystem services provision: a social-ecological network approach. People and Nature 3, 3, 266-280. https://doi.org/10.1002/pan3.10172

Food System Governance, Food Security and Land Use in Southern Africa (SAFGOV)

Belmont Forum/FACCE-JPI

Duration: April 1, 2014 — March 31, 2015

Short description of the project

The overall objective of this project was to draw on research skills from South Africa, the United Kingdom, the United States and the Netherlands to build an international community of researchers closely linked to a range of stakeholders across South Africa's public and private organisations. This community aimed to co-design and jointly undertake research on (i) the effectiveness and adaptiveness of food system governance arrangements for food security; and (ii) food systems governance as a driver of land-use change and implications for associated ecosystem services.

Key insights related to governance

- Food system governance arrangements can be assessed for effectiveness based on 5 principles: **system-based problem framing, boundary-spanning structures, adaptability, inclusiveness, transformative capacity.**
- This framework was applied to South African food policy programs.
- Policies can be **ambitious on paper** but have little results in reality. In the case of South African food systems, this was due to **inadequate resources** for transformative change.

Major publications

Termeer, Catrien JAM et al. 2018, A diagnostic framework for food system governance arrangements: The case of South Africa https://doi.org/10.1016/j.njas.2017.08.001

Sustainable Management of Agro-ecological Resources for Tribal Societies 2 (SMARTS2)

Belmont Forum/FACCE-JPI

Duration: Aug. 1, 2014 — July 31, 2017

Short description of the project

SMARTS2 aimed to demonstrate how conservation agriculture, technology, and foreknowledge of climate variation can be integrated with small landholder farmers' existing knowledge and behaviours to increase adaptation to climate change. The project facilitated greater adoption of conservation agriculture production systems particularly using intercropping that is resilient to climate change, adding nutrients and providing rural farmers with tools for self-reliance and a cash crop to enhance income.

By understanding how farmers' decisions are currently made (through perception surveys) and by connecting to market conditions and understanding gender roles, this research can help develop community-based farming programs that are less environmentally disruptive, have higher yields and more income streams than traditional agricultural development programs through providing greater real-time feedback of market conditions, and potentially sufficient behavioural change that increase environmental stewardship, market stability, and ultimately food security.

Key insights related to governance

- Assisting farmers with more efficient input use besides introducing new technology is important for community sustainability, resilience and increased food security.
- **Intercropping is a win-win** for farmers as the extra income is an incentive and the intercropping helps retain soil moisture.
- Extension agents and farmers need to be trained in conservation agriculture as project results provide incentives to adopt climate-smart practices.
- **Community engagement** is essential for adopting new technology. Baseline surveys of villages can highlight knowledge gaps and opportunities for training.
- **Training on accessing market information** via mobile devices enhances decision-making.
- **Training on the use of cover crops** and general agricultural practices (e.g., line planting, intercropping and the use of hybrid seed) can improve overall farm productivity among low-education farmers.
- **Training non-governmental organisations (NGO)** staff in household baseline surveys was essential to convey correct information to villagers for data collection.
- Dissemination of findings and sharing ideas across multiple venues enhances collaboration between the scientific community and stakeholders.

Major publications

Chan, Catherine et al. 2017, Efficiency of Conservation Agriculture Production Systems for Smallholders in Rain-Fed Uplands of India: A Transformative Approach to Food Security https://doi.org/10.3390/land6030058

Mishra, S.N. et al. 2018, An Economic Assessment on Conditions for CAPS Adoption in Odisha (India) https://doi.org/10.20546/ijcmas.2018.704.334

Pradhan, Aliza et al. 2018, Potential of conservation agriculture (CA) for climate change adaptation and food security under rainfed uplands of India: A transdisciplinary approach https://doi.org/10.1016/j.agsy.2017.01.002

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