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Accelerating locally-developed freshwater management practices across global growing regions through innovation ecosystems.

Theme I: Managing Natural Capital

Host institution: University of Glasgow, United Kingdom

Host collaborator: Professor Rudolf Sinkovics

Fellowship dates: 15 September to October 2023

I consent for this report to be posted in the Co-operative Research Programme website.





1. What were the objectives of the research project? Why is the research project important?

This research investigated the role that cooperatives, as an actor in agricultural global value chains, can play in supporting the accelerated adoption of freshwater management practices across globally dispersed growing regions. Cooperatives are member-owned and controlled organizations whose benefits serve the members who supply them. While agricultural cooperatives are traditionally associated with local economic resilience, employment, and greater social integration (Ortiz-Miranda et al., 2010; Tregear & Cooper, 2016), recent work indicates that under certain conditions, those effects extend to coordinating the search for and implementation of innovative solutions for sustainable development by shifting innovation from an isolated to a collective effort (Siedlok et al., 2023, 2024; Smith et al., 2018). In fact, cooperatives that participate in global value chains perform an orchestrating role, help their members to understand, strategically adapt and innovate in anticipation of global trends (Callagher et al., 2022; Siedlok et al., 2021). This project extends this body of work by investigating cooperatives' role in orchestrating innovation adaption across globally dispersed growing regions in response to freshwater challenges. Comparative analysis of Chilean, Italian, and NZ kiwifruit regions using the Global Innovation System (GIS) approach was used to visualize existing direct and indirect linkages that can be leveraged to accelerate innovation across globally dispersed growing regions.

Objective 1: To identify and map the existing direct and indirect linkages between cooperatives and other actors in three kiwifruit global value chain that can be leveraged to accelerate freshwater management innovation adoption.

Objective 2: To isolate the conditions in which cooperatives can support adoption in global innovation systems through a comparative case analysis.

Objective 3: To identify opportunities for future linkages across global growing regions to accelerate the adoption of freshwater growing practices across dispersed regions.

References

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2. Were the objectives of the fellowship achieved?

Or are they on the way to being achieved?

If not, for what reasons? (The data or research is still ongoing or being analysed; technical reasons (e.g. equipment not working, adverse weather conditions, unexpected results, etc.; other reasons?)

Yes, the three objectives were met.

The outputs of the global innovation system mapping (objective #1) were produced using Miro, an online collaborative whiteboarding platform.

The conditions in which cooperatives can support innovation adoption of freshwater growing practices.

Main findings and recommendations are being finalised and will be disseminated in a working paper shared via SSRN.

3. What were the major achievements of the fellowship? (up to three)

3.1 We leveraged existing data through application of an emerging methodology that was new to us. Our initial research plan was to use secondary data and supplement that with primary interviews. However, once it became clear how the global innovation system model was operationalised and the plethora of secondary data available, including interview data already available, we decided to focus on leveraging that corpus of material.

3.2 Visual outputs that show the innovation adoption dynamics of global challenges. While the benefit of comparative case analysis is rich ('thick') case descriptions, it can be hard to extract the vital themes. Using the ecosystem mapping techniques and presenting them a visual map helped us to show the dynamics of each case as well as the similarities and differences across them.

4. Will there be any follow-up work?

- Is a publication envisaged? Will this be in a journal or a publication? When will it appear?

A peer-reviewed manuscript was not part of the project goals. Nonetheless, the empirical insights generated by using the global innovation systems model led us to identify several improvements to the model and I am documenting those in a manuscript for submission an A-ranked/3* journal in 2024.





- Is your fellowship likely to be the start of collaboration between your home institution and your host?

Discussions during the visit seeded two project ideas and we are exploring how either could be progressed via EU-related research programmes.

- Is your research likely to result in protected intellectual property, novel products or processes?

No.

5. How might the results of your research project be important for helping develop regional, national or international agro-food, fisheries or forestry policies and, or practices, or be beneficial for society?

Please express this in terms of environmental/food security/food safety/economic/health (human and livestock and plant) benefits, etc.

The results of this research project are important because they provide new insights into the role that cooperatives can play in supporting the accelerated adoption of freshwater management practices across globally dispersed growing regions. Several pan-national organisations, including the United Nations, World Bank, and the OECD has made assertions about the role of cooperatives in sustainable development, on which freshwater access is one. Yet, research that is scant on understanding in which conditions cooperatives can make a difference. The research found that in situations where cooperatives are active in working with their members, they can assist as boundary spanners and knowledge brokers to accelerate local practices. However, to assist with accelerating non-local practices cooperatives need to have existing organisational processes that span geographical boundaries that they can leverage for this purpose. Hence, the results indicate what kinds of cooperatives can assist. Similarly, by identifying some of the key characteristics that other kinds of organisations possess, which could be leveraged to accelerate adoption of freshwater practices. These insights are important for stakeholder organisations and policymakers alike.

6. How was this research relevant to:

- The objectives of the CRP?

The project contributed toward the CRP's objective to encourage new collaborations among universities from member organisations on projects that contribute in some way toward the goal of feeding a global population of nine billion by 2050. The fellowship enabled the researcher and her host to act on a collaboration about global food value chains, which they first started discussing in 2021.

- The CRP research theme?

Theme I, Managing Natural Capital, concerns the management of natural resources in light the growing demand for food production. This project contributes to this objective with its focus on kiwifruit. Much research is focused on agriculture freshwater management associated with livestock, cereals and grains, the proposal focuses on kiwifruit, a fresh fruit product category whose quantity and quality are water sensitive. The kiwifruit value chain is global, and standards are shaped by country-level institutions governing horticultural production standards and powerful multinational corporation retail customers (e.g. Walmart, Tesco, Sainsbury's, Cosco, Asda, Aldi), and assurance system suppliers (e.g. FoodPLUS GmbH's GLOBAL G.A.P.). Hence, the focus on this fruit category expands the insights about food production and water needs.

7. Satisfaction

- Did your fellowship conform to your expectations?

Yes.





- Will the OECD Co-operative Research Programme fellowship increase directly or indirectly your career opportunities? Please specify.

Yes. As well as the networking with other academics based at or near Glasgow, the fellowship provided me the opportunity to develop skills with a relatively new methodology and leverage both new and existing data with that approach, thus adding a new technique to my CV.

- Did you encounter any practical problems?

No.

- Please suggest any improvements in the Fellowship Programme.

None.

8. Advertising the Co-operative Research Programme

- How did you learn about the Co-operative Research Programme?

A colleague shared the URL

- What would you suggest to make it more “visible”?

The scheme was a very good way for me to undertake interdisciplinary work. Given the mission of the scheme is to tackle a problem that needs interdisciplinary, if not transdisciplinary, solutions, then encouraging researchers to take on fellowships to connect them with scholars in different disciplines, as well as a broader base of stakeholders might offer a way to make the scheme more “visible”

Promote the scheme and the participants via social media. I provided my LinkedIn and X (Twitter) details as requested but did not get tagged in posts. Likewise, provide the relevant hashtag so participants can add them to our posts. Currently, these are hard to find.

- Are there any issues you would like to record?

The administrative support and professionalism of the staff associated with this programme is stellar.