

Preliminary findings suggest that private agribusiness has led the bioeconomy transition in Brazil and largely steered its pathways. It has extensively used innovative power to create new resources (biofuels & bioproducts), transformative power to slowly change public institutions and structures (i.e., pushing for an increasingly bio-based economy), but also reinforcing power to consolidate dominance in agriculture and land use governance. Agriculture regime incumbents have used the bioeconomy transition to encroach on what have traditionally been spaces (markets) of the fossil-fuel industry, in a form of multi-regime competition. Far from politically being a bottom-up process, the bioeconomy transition in Brazil has rather been a power shift between the dominant agents of distinct regimes. As agribusiness empowers itself by conquering new spaces, noticeably the agriculture regime it dominates also becomes larger and more powerful in the country, as well as more significant globally. The conclusions discuss the relevance of these findings both for the governance of bioeconomy sustainability and for understanding multi-regime interactions through a power lens in transition theory.

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Avelino, F. (2017). Power in Sustainability Transitions: Analysing power and disempowerment in transformative change towards sustainability. *Environmental Policy and Governance* 27, 505-520.

Bastos Lima, M.G. (2018). Toward Multipurpose Agriculture: Food, fuels, flex crops, and prospects for a bioeconomy. *Global Environmental Politics* 18(2), 143-150.

Hausknot, D., Schriefl, E., Lauk, C., and Kalt, G. (2017). A Transition to Which Bioeconomy? An exploration of diverging techno-political choices. *Sustainability* 9, 669.

Sutherland, L.A., Peter, S., and Zagata, L. (2015). Conceptualising multi-regime interactions: The role of the agriculture sector in renewable energy transitions. *Research Policy* 44, 1543-1554.

Track: Power, Agency, and Politics

Keywords: Power, Agency, Bioeconomy, Multi-regime interactions, Brazil

Category: Full paper

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Abstract. The global agro-food system contributes significantly to climate change, which is the most serious of the environmental challenges. According to the IPCC (2019), it is estimated that between 21% and 37% of the total anthropogenic greenhouse gas emissions in the World are associated with pre and post-production activities in the food system. This global challenge implies to cooperate among countries to create new methodologies for transition research and to speed up sustainability transitions all over the World.

This research work is linked to an Adsideo research project which depends on the development cooperation program of the Technical University of Valencia in Spain. The project implies a new transition research methodology itself in order to collaborate between these countries. The background of the project relies in the complex system vision and in the transformative approach. In particular, it connects with the socio-technical transition approach towards sustainability, the multi-level perspective and the multi-actor perspective based on human capabilities. The main objective of the project is to generate room for reflexivity and new governance spaces at local level to enhance the transition capacities of the agro-food system in Valdivia (Chile) and Valencia (Spain). Also this project aims to carry out a learning-exchange process through transatlantic experiences and links. In addition, the theoretical framework has been reinforced through the conceptualization development of urban-rural transformative capacities to sustainability transitions in order to allow the methodological replicability of the project in different contexts. In that way, the methodology is based on the qualitative paradigm and on the principles of transdisciplinarity and inclusivity. Different qualitative techniques have been developed such as documentary analysis, participant observation and semi-structured interviews in the agro-food systems. Subsequently, multi-actor workshops to learn and to reflect on transition capacities have been generated. These participatory workshops included a balanced representation among policy makers, civil society, local leaders related to disruptive initiatives, academia, private sector and social business. First results in Valencia show different grades of capability in the development of new agro-food policies to sustainability, legal frameworks, transformative leaderships, disruptive initiatives, social learning and coproduction of knowledge. The results will be nourished by final exploratory studies in both cities and thanks to the exchanges between Valdivia and Valencia.

Track: Methodologies

Keywords: sustainability transitions, socio-technical systems, multi-level perspective, agro-food, governance, international cooperation, Valdivia, Valencia

Category: Speed Talk

[413] Sebastian Hornum (UNEP DTU Partnership). *Role of suppliers in an emerging technological innovation system: The case of small-scale irrigation in Kenya.*

Abstract. Irrigation technologies has been identified as an important lever for adapting to climate change in Kenya (Ministry of Agriculture, 2017), as it addresses water scarcity and food security through increased agricultural productivity. Despite being available through a seemingly well-developed network of irrigation equipment suppliers, several obstacles stand in the way of their diffusion and uptake among smallholder farmers.

As small-scale irrigation technologies has the potential to grow into a USD 236 Million dollar market (USAID, 2016), there is great opportunity for the private sector to invest in and create market for small-scale irrigation technologies in Kenya. Therefore, it is of interest to understand how to over-come prevailing blocking mechanisms in the effort to expand the irrigation market and enhance technology uptake. Barriers to the diffusion of small-scale irrigation technologies have been studied on various levels in Sub-Saharan Africa (Friedlander et al., 2013; Wanvoeke et al., 2015; Venot et al., 2017), and to limited extent in Kenya (Kulecho and Weatherhead, 2006). While this literature on enablers and barriers can be helpful to explain the diffusion of irrigation technologies, it fall short of providing a more systematic and conceptual understanding of the successful or unsuccessful process of technology diffusion.

To this end, this study applies a technological innovation system (TIS) approach to assess the factors influencing the transition towards increased uptake of irrigation technologies, with an emphasis on how these affect private sector attempts and opportunities to scale and market irrigation technologies to smallholder farmers in Kenya. Through a qualitative approach, consisting to key informant interviews (n = 29), group discussion, field visits and document analysis the study conducts a functional-structural analysis of the innovation system around irrigation technologies for smallholder farmers to explain blocking mechanisms and enablers.