



Tropentag, September 14-16, 2022, hybrid conference

“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## Biotechnology, biomass, agroecology: which bioeconomic approaches do Argentinean enterprises follow?

JOCHEN DÜRR<sup>1</sup>, MARCELO SILI<sup>2</sup>

<sup>1</sup>*University of Bonn, Center for Development Research (ZEF), Germany*

<sup>2</sup>*National University Sur Bahia Blanca, Argentina*

### Abstract

The bioeconomy continues to be a contested field in the political debate. There is still no consensus on how a sustainable bioeconomy should be designed and how it could be anchored in society. The most prominent bioeconomy visions, concepts and strategies come from OECD, which is strongly bio-technology focused, and from the EU, which is more biomass oriented. There are also alternative concepts emerging, such as from the European Technology Platform TP Organics, which follows a more agro-ecological vision, and stresses the inclusion of different stakeholders from science, politics, business, and civil society. However, alternative bioeconomy concepts that deviate from the mainstream discourse, and are based on small-scale, agro-ecological models, are usually underrepresented in the debate.

This is also the case in Argentina, where the bioeconomy is mainly linked to genetically modified monoculture crops, intensive use of inputs, and export orientation, with a biotechnological and agro-industrial, biomass focus. This production model induced biotechnology research and innovations, such as drought-tolerant seeds and no-tillage systems, but also had negative consequences on air and water quality, land use changes, land distribution, health and employment, and on deforestation.

So far, there have been, to our knowledge, no attempts to classify bioeconomic ventures into bioeconomy typologies. Based on literature research, we extracted categories by which different bioeconomy types (biotechnology-focused, biomass-based, and socio-ecological approaches) can be distinguished. We used these categories in an online-survey with 47 bioeconomic enterprises which represent different sectors of the Argentinean bioeconomy. The novelty of this approach lies in the operationalisation of categories that characterise bioeconomic typologies and their application to the real business world. By using descriptive, correlation and cluster analysis, we discuss which kind of bioeconomic approaches can be identified in Argentina, if the approaches can be as clearly distinguished as the ideal types described in literature suggest, and how the different types of bioeconomic enterprises contribute to sustainable local development.

**Keywords:** Bioeconomy, entrepreneurship, local development, sustainability