



# Social-ecological Systems Analysis of a Bolivian Artisanal Fishery: Community-based Governance and Rural Economies

Carla Baldivieso (1,2,4), Michelle Bonatti (2,3,\*), Stefan Sieber (2,3)

1 Comunidad de Estudios JAINA, Tarija, Bolivia; baldivic@hu-berlin.de

2 Leibniz Centre for Agricultural Landscape Research (ZALF), Eberswalder Straße 84, 15374 Müncheberg, Germany; stefan.sieber@zalf.de

3 Department of Agricultural Economics, Faculty of Life Sciences Thae-Institute, Humboldt-Universität zu Berlin, Unter den Linden 6, 10099 Berlin, Germany

4 ATSAF Academy Ph.D. Student – WorldFish Cambodia CGIAR Center

\* Correspondence: michelle.bonatti@zalf.de

## Introduction

- The aim of our study is to analyze the mechanisms of governance developed by the Weenhayek riverine population, highlighting the rural economies transformations.
- Integration between the Socio-Ecological Systems (SES) framework and the Agrobiodiversity Knowledge Framework (AKF).

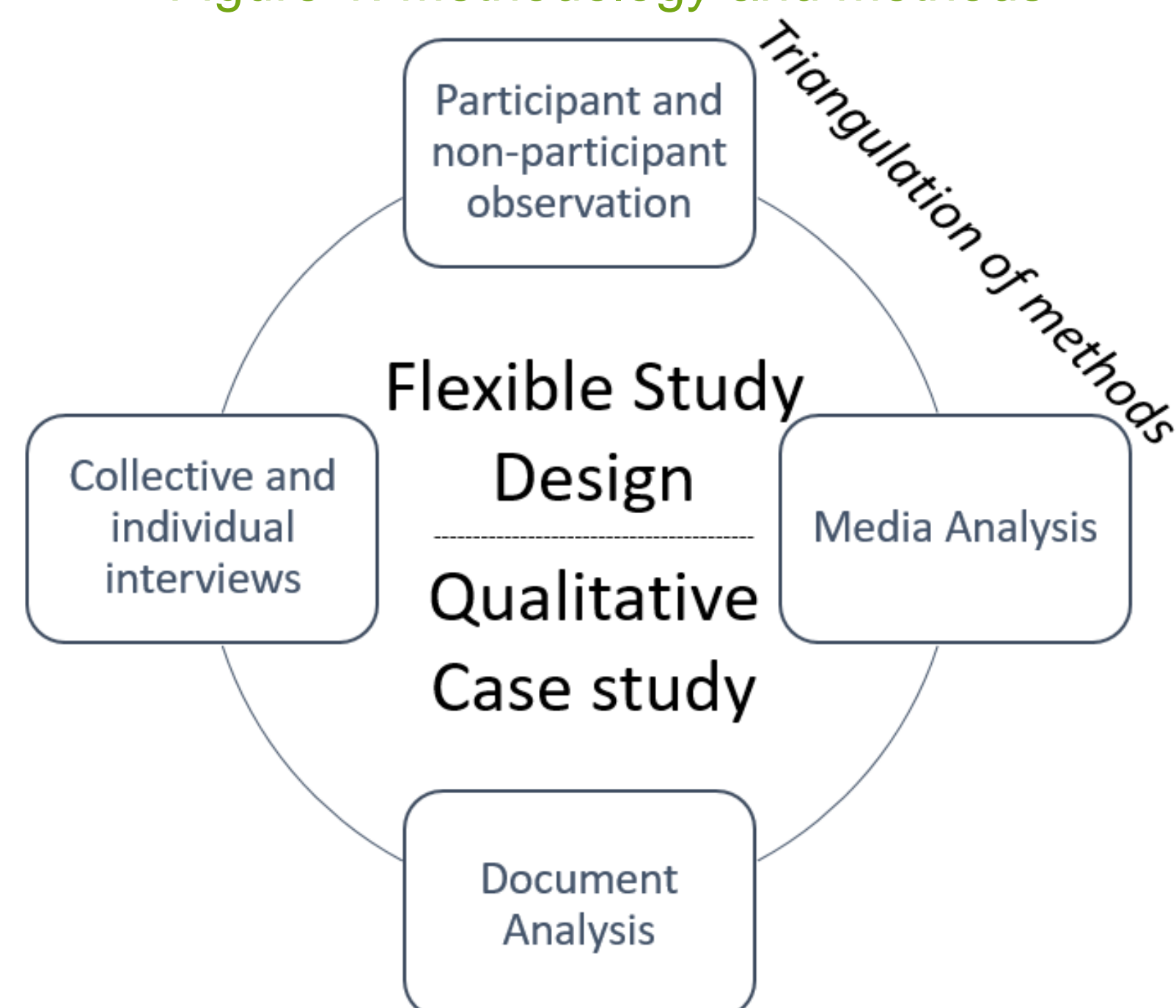


Key words: Social Ecological Systems; Governance; Agrobiodiversity, Rural Economies

## Methodology

- Variables from the SES analytical framework proposed by Ostrom and colleagues (2020). Selection following previous studies (London et al. 2017), and guided by the AKF developed by Zimmerer et al. (2019), focusing in governance.

Figure 1: Methodology and methods



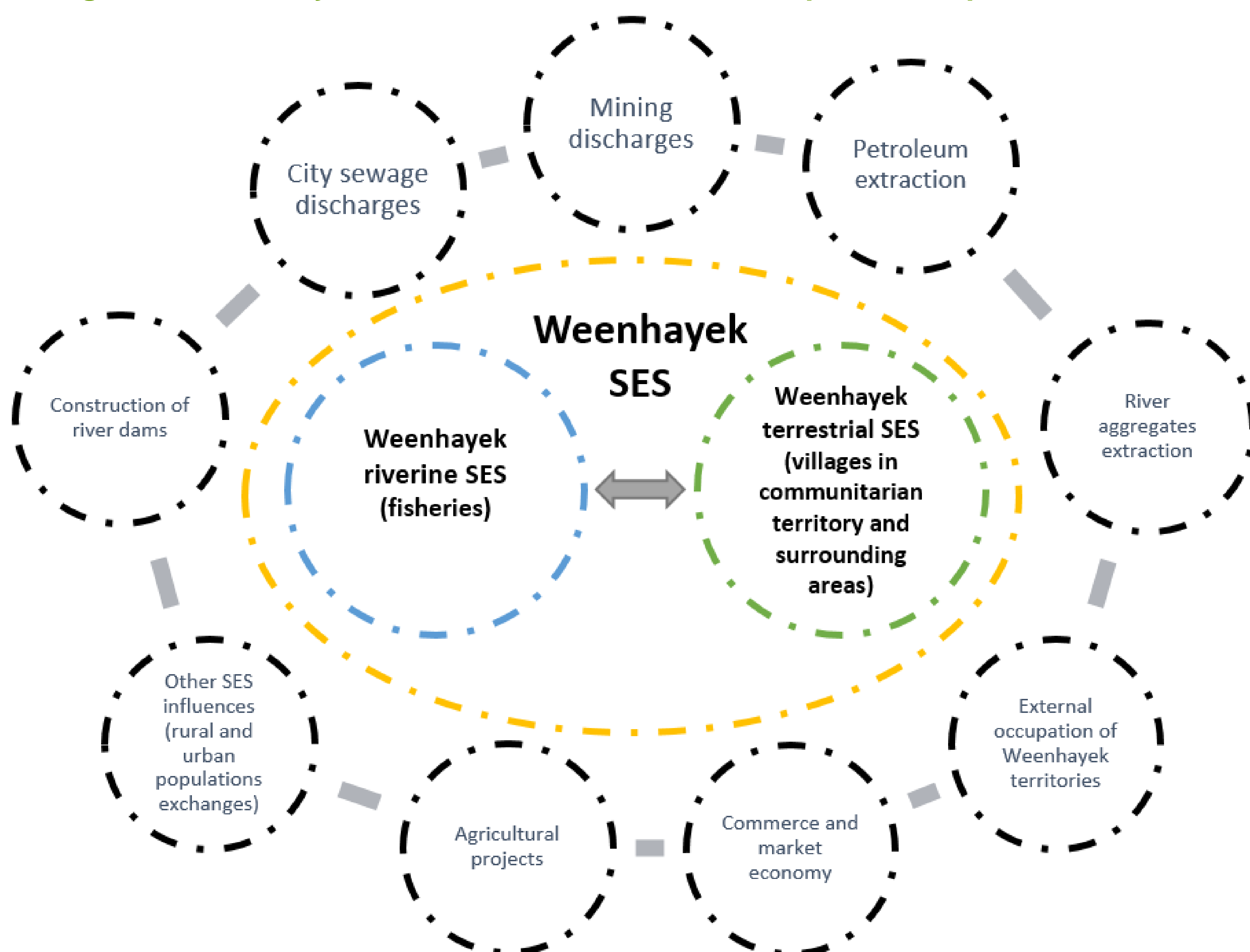
Picture 1 and 2: Online meeting pictures of collective fishing.



## Results (i)

- The Weenhayek SES is influenced by other SES that affect the governance of agrobiodiversity, as an open economy. Weenhayek rural economies are in constant transformation, influenced by threats to agrobiodiversity.

Figure 2: Weenhayek SES riverine and terrestrial spaces as open economies



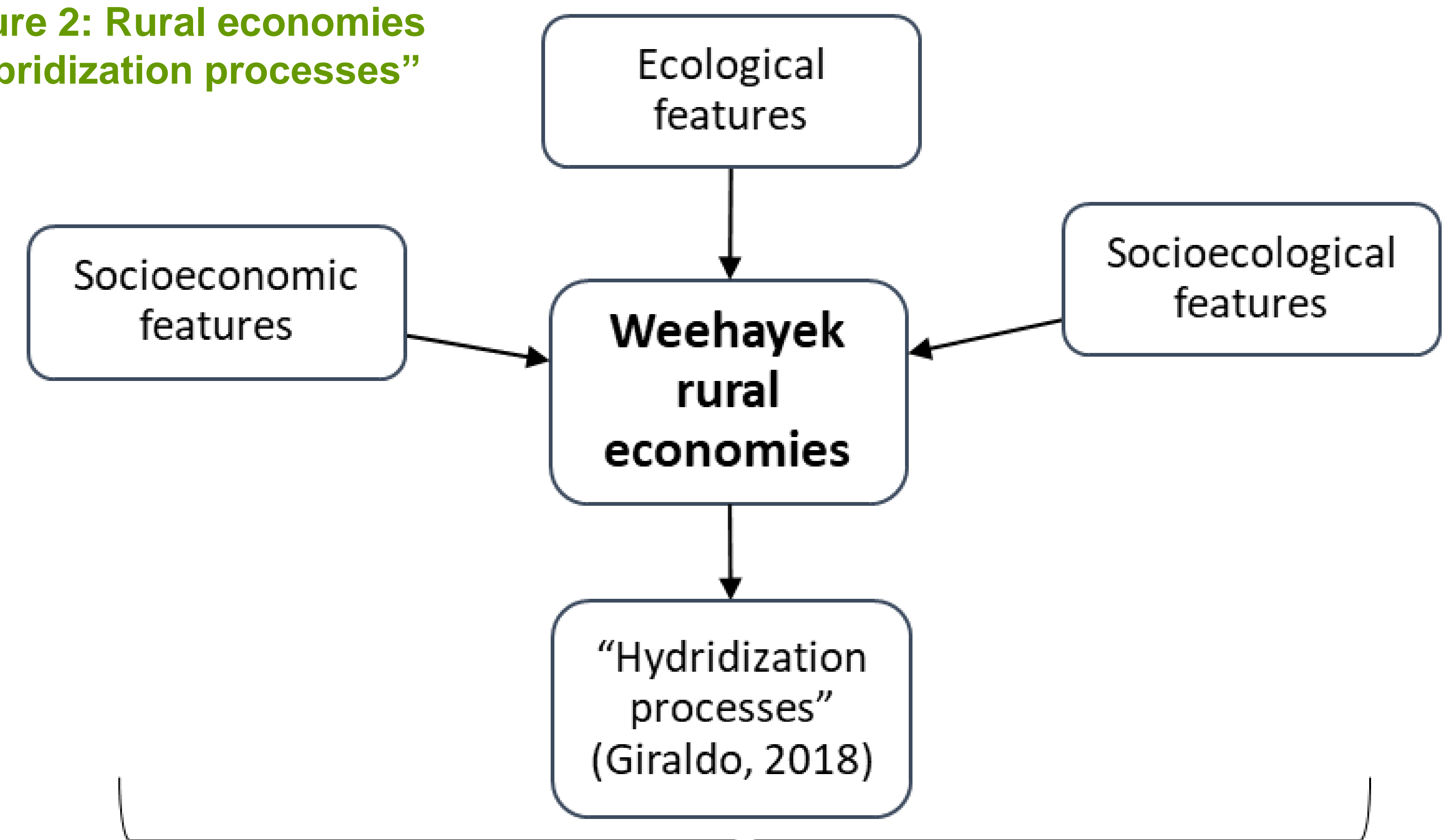
## Results (ii)

- Two riverine zones, identified as upper and lower jurisdictions, characterize the studied area. They present significant differences in their forms of governance.

Table 1: Contrast between riverine zones		Upper jurisdiction (Villa Montes)	Lower jurisdiction (Yacuiba)
Socioeconomic features	Market economy and bartering	Major, established since the 1960. Bartering mechanisms are often used.	Minor, marketing outlets opened in the 2000s and are becoming more prominent. Bartering mechanisms are often used.
	Existence of resource-based organizations	One syndicate of concessioners and one association of fisher workers.	Non-existent.
	Organization that undertakes fishing claims	Resource-based organization with support of Weenhayek political authorities	Weenhayek political authorities
	Concession system (allocations of rights)	60 concessions to fish in fixed places in the river.	17 concessions to fish in movable places in the river.
Ecological features	River ecological characteristics	The river is stony, there is no significant movement of sand and the riverbed does not change. This allows fishing in fixed locations.	The river transforms along the channel and becomes less stony and more sandy as it flows downstream, so the bed is mobile. This does not allow fixed fishing spots to be defined.
	Fishing gears	Fishing gear is modern, accompanied by relatively few traditional fishing techniques used in the commercial season.	Use of traditional fishing techniques to a greater extent than in the other jurisdiction during the commercial season.
Socioecological features	Fishing gears	Fish as a central component in traditional food. Handicrafts and carpentry as important cultural traditions.	Fish as a central component in traditional food. Handicrafts and carpentry as important cultural traditions. Preservation of traditional knowledge is more evident.
	Traditions: cooking, handicrafts, carpentry		

## Discussion and Conclusions

Figure 2: Rural economies "hybridization processes"



Community governance mechanisms are based on various economies along the Weenhayek SES, which have an attachment to the SES and its cyclical nature.

- The Weenhayek economy is based on distributive and non-cumulative dynamics that define its relationship to the market economy within hybrid processes. This conditions its potential to build alternative economic institutions.

## Organizations involved



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