'Does small-scale farming resist within urbanization increasing pressure?': enhancing alternative food alliances in the metropolitan countryside of Rio de Janeiro, Brazil

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Introduction

Rural-urban complexity is observed across the Metropolitan Region of Rio de Janeiro where a group of small-scale farmers has been able to resist by elaborating flexible strategies adapted in the face of rural change. The research aims to investigate the resilience of small-scale farming in the industrialised Southeast Brazil. To achieve this, the research examined the pressures facing farmers in areas affected by the metropolitan dynamics of Rio de Janeiro, how these pressures have influenced farming practices, how farmers have developed individual and collective resilience, and the wider theoretical and policy lessons gained on how rural areas and farming communities respond to urbanization.

Methods

The study is based on primary research undertaken in Greater Rio de Janeiro. An analysis of the nature of the place, founded on bottom-up information flows and qualitative investigations. Empirical findings of this study indicate how the resilience and adaptive capacity of small-scale farming have challenged dichotomous urban-rural approaches to land use in peri-urban areas in which agriculture and localized food systems are simply replaced by urban pressures. Land tenure and social formation are results of past agrarian history and influence the course of converting farm-land into other uses as well as influencing resistance and dynamic adaptation at the rural-urban interface.

Capability to learn from changes

The perception of the farmer, and to ensuring a degree of flexibility and adaptiveness at rural-urban interface.

Combining different types of knowledges

Ability to combine scientific information with farming knowledges. Combining different types of information and sharing in various networks.

Creating opportunity for organisation and cross-scale linkages

Ability of the farmers' community to maintain the local capacity for social organisation.

Farming in metropolitan areas is characterized by fragmented patterns of land ownership, land-intensive productive systems and land-use diversity, products with high aggregated value (e.g., fruit and organic agriculture) and direct forms of commercialization to consumers made possible by proximity to urban markets. Pressured by urban expansion, rural activities have diminished in the metropolitan region but have not disappeared.

Table 1. Agricultural production of the main fruit products in the municipalities of Cachoeiras de Macacu, Itaboraí and Tanguá (in the Eastern of Rio Metropolis) in 2017(tons). Source: Technical Assistance and Rural Extension Company of Rio de Janeiro state, EMATER-Rio (2017).

fruit	Cachoeiras de Macacu	Itaboraí	Tanguá
banana	1.643,00	238,70	110,00
coconut	665,00	46,80	490,00
guava	12.085,00	-	-
orange	350,50	583,00	17.959,00
lemon	862,00	138,90	1.542,35
passion fruit	735,00	-	-

The metropolitan countryside of Rio de Janeiro

The built-up area of Rio de Janeiro has expanded outward, and the metro population increased from 10,389,441 inhabitants in 1991 to 12,330,186 in 2016 (IBGE, 1991, 2016). New industrial and petroleum complexes and port facilities were installed on the limits of the metropolitan region in recent years. Under these circumstances, agriculture has become juxtaposed with other functions and interests, leading to a mosaic of diversified land use in both inner and outer metropolitan space. Depending on the relative distance from the built-up metropolitan core and local agrarian history, urban and peri-urban farmers have asserted their place in a multifunctional countryside (BICALHO, 1992; BICALHO AND MACHADO, 2013; MACHADO, 2013, 2020).

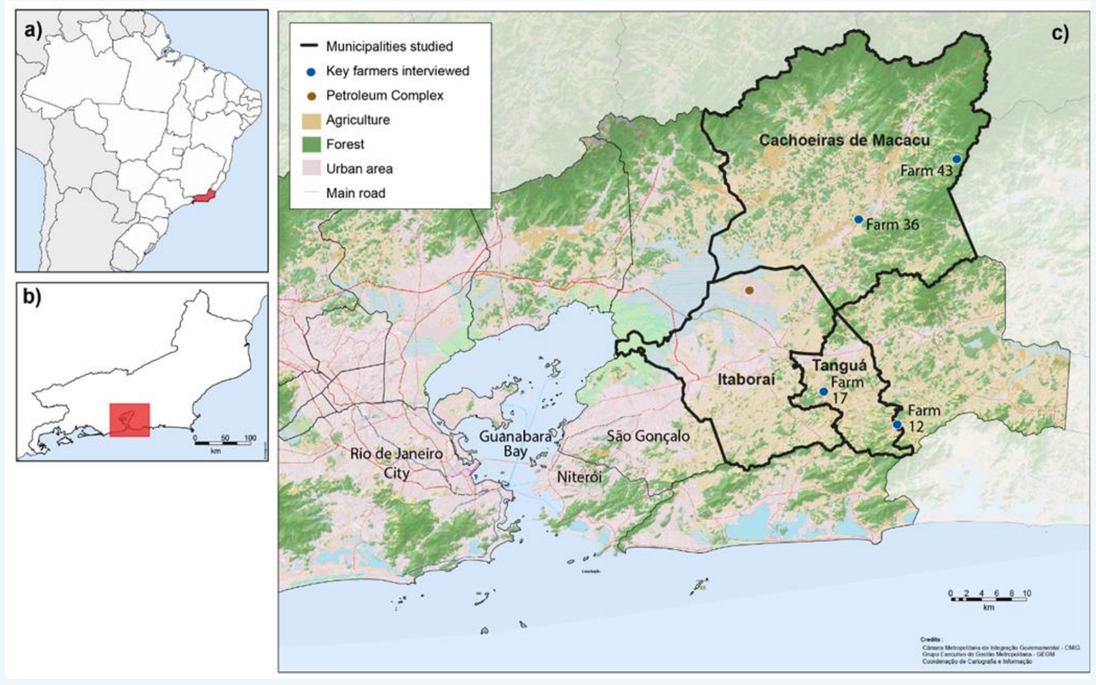

Figure 1. a) Brazil, b) Rio de Janeiro state, c) Rio de Janeiro City and the Eastern of Rio Metropolis. A highly multifunctional countryside in which agriculture have become juxtaposed with other functions and interests as part of a mosaic of diversified land uses.

Figures 2 and 3. Since the end of the 1970s, fruit production has been the most resilient and adaptable to urban pressures and is becoming more important, with some farmers seeking to achieve quality standards. Its suitability to the environment of the metropolitan countryside of Rio de Janeiro is due to its profitability and continuous production to generate income throughout the year. Specialized sets in each production are distributed in hillside and lowland areas. The slope is an area dominated by banana production, while the lowland tends to specialize in other fruits, especially guava and citrus.

The focus on the **territorial dimension** is crucial for managing and public policies in a **multifunctional space** (WILSON, 2007).

The key point is the importance of promoting resilience by establishing political priorities to support small-scale farming systems based around fundamentally different logics to intensive global food systems, and which, over time, generate more sustainable and equitable power relation systems for the purpose of **regional and local quality agricultural systems, small-scale farming strategies, and resilient rural futures**.

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