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## EXPLORING CONDITIONS FOR AGRICULTURAL VIABILITY IN GUADELOUPE: IDENTIFYING GATEKEEPERS. SOME INSIGHTS FROM THE FRENCH CARIBBEAN

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### Keywords

viability, gatekeepers, territorial governance, textual analysis, graph theory

### Abstract

Toward exacerbated global changes, one of the main current challenges is to implement agroecological transition. In this context, territorial scale appears as a consistent level where governance procedures are experienced. The context is the one of a multi-level and multi-actors' governance leading to change in local public policy. We questioned 21 key stakeholders from agricultural frameworks as well as actors from collective organisations. By combining textual analysis tools and graph theory, we focus on stakeholders' representations of viability as these actors produce advice regarding the settings of administrative and regulatory planning. We identify four key dimensions to viability (economical, agroecological, socio-cultural and organisational). The results show a continuum on the agroecological dimension of viability. They reveal the pivotal role of gatekeepers designed as actors able to support substantive change by transforming the agroecological dimension of viability in a 'rational myth'. By doing so, they could initiate collective actions to promote change and support agroecological transition.

### Introduction

The shift from high-yield to more viable farming systems has become one of the major issue and challenge for agriculture. The end of the productionist model is supported by the FAO that claims for 'smart agriculture' (FAO, 2010) principles which are environmentally friendly and rely on technical but also social innovations. In this context, agroecological transition may be considered as a privileged pathway. We make the hypothesis that agroecological transition comes from the ability of stakeholders to build a common paradigm on viability of farming systems and from their ability to initiate change in conceiving, managing and producing agricultural products and services. We then seek to highlight how stakeholders of the agricultural sector see viability of farming systems. Results help to set regulatory and administrative devices that could ensure viability of farming systems and more widely of agriculture in the French Caribbean. Taking the example of Guadeloupe, we more widely wonder about the adaptive capacities of small islands facing exacerbated global changes considering that a set of viable farming systems will lead to the viability of agriculture as a whole. As such agriculture will itself be a source of resilience toward global changes (Angeon, 2015).

### Method: Exploring the devices, these 'small islands of beings'

Based on a mathematical theory from the mid-seventies (Aubin & Frankowska, 1996; Aubin 2010), viability theory explores how systems that face 'viability constraints' can be regulated (Aubin 2010). Following this approach, viability of agriculture designs its potential by providing ecosystem services and by ensuring sustainable practices. It lies on the ability of farming systems to respect strong constraints mainly agronomic and ecological, economic, organisational and sociocultural. To grasp this rules, we led comprehensive interviews (Kaufman, 1996) with a sample of stakeholders selected thanks to the snow ball method (Goodman, 1961). We then got a raw material based both on discourses and formal documents mentioned by stakeholders. Using textual analysis tools, we identify the most frequent words arising from the interviews' reports and from the formal administrative and planning documents. We then used graph theory to identify gatekeepers.

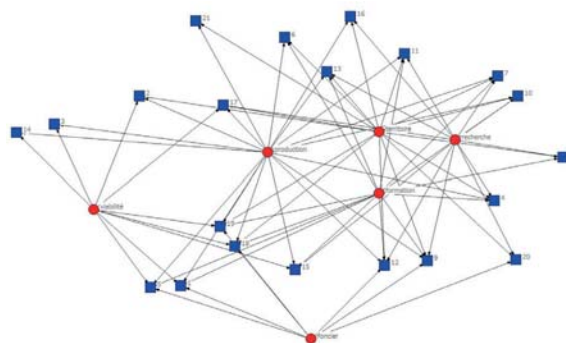
### Results

Our results show that: **1/** Stakeholders do address differently the four dimensions of viability. Interviews reveal that the most common entry on viability is the economic dimension, then the agroecological one. **2/** There is a link but not a strict one between stakeholders' discourses and formal documents. 6 words mainly characterize stakeholders' representations of viability: research, territory, training, viability, property, production. From the point of view of the stakeholders and of the planning documents, Viability of agriculture on the Territory arises from Production, is constrained by Property and can be improved thanks to Research and Training. **3/** For some stakeholders, the current agricultural model framed

by dominant single crops farming systems for exportation is viable while for others the end of this era is reached. Considering that collective action ‘put together different types of force that are precisely associated because they are different’ (Latour, 2010, p107), stakeholders that wish implementation of agroecological transition will be united to work, think and propose a set of solutions and actions. Lexical analysis shows that there is a continuum of representations that describes agroecological dimension of viability. For all stakeholders, organisational dimension appears a sine qua non condition to operate actions in favour of viability. As such, it is a ‘multi-level and multi-stakeholders territorial governance process’ (Chia et al., 2010). 4/ Viability of a farming system comes from negotiations, tensions and conflicts between stakeholders on the ways and means of regional development by creating mechanisms to build new rules of actions. As such, identifying gatekeepers is needed. Graph theory allows to define clusters from a similarity matrix based on stakeholders’ representations (See Figure 1). We defined 2 groups: GROUP 1 for stakeholders who think Viability (i.e., for whom the current system is viable) and GROUP 2 for stakeholders who do not think Viability (i.e., the current system is not viable. It has to change). From our matrix, we learn that GROUP 1 considers ‘production’ as the way of action to reach viability whereas GROUP 2 rather identifies the ‘territory’ as a consistent level to implement transversal actions. Between the two groups, some stakeholders are identified as ‘gatekeepers’: actors that play a core role in linking constituted networks. In our case study, these actors are able to drive collective actions in favor of agroecological practices by supporting ecosystem services and sustainable innovations in order to promote viable farming systems. In GROUP 1, gatekeepers are number 2 and 17. In GROUP 2, the gatekeeper is number 21.

### Conclusion

A large diversity of representations explains how agriculture in Guadeloupe may be viable. In order to map this diversity, we collected and analysed stakeholders’ representations through their discourses and through institutional documents. Viability is mainly defined by economical characteristics with a major constraint expressed in terms of land property. Training and research appear to be a way of action to highlight the importance of agroecological dimension of viability. Moreover, some stakeholders are identified as gatekeepers to enable collective action as a process of territorial governance. We suggest that research has to go on with these driving actors to effectively implement devices to promote a single voice (common language and projects) for viability.



**Figure 1. Matrix of viability representations. Identifying Gatekeepers**

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