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### ► **To cite this version:**

Gisèle Alexandre, Joséphine Louise Agristola, Agathe Cheval, Jessica Perrette, Audrey Fanchone, et al.. Academic or traditional knowledge transmission need a specific analysis of the formal and informal livestock sectors of the French West Indies (FWI).. Caribbean Science and Innovation Meeting 2019, Oct 2019, Le Gosier, France. hal-02899131

**HAL Id: hal-02899131**

**<https://hal.univ-antilles.fr/hal-02899131v1>**

Submitted on 14 Jul 2020

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## Academic or traditional knowledge transmission need a specific analysis of the formal and informal livestock sectors of the French West Indies (FWI).

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There is a growing concern about the lack of adoption of some technologies at the farm level. The context, as a whole, may influence the successful use of innovations. The transfer of technology policy is criticized, particularly in tropical regions, for its inadequacy to the socioeconomic context of the livestock farming system (LFS). In Guadeloupe and Martinique, the authors have long worked in strong partnership with professional organizations and decision-makers to adapt innovations to the context. Close partnership with stakeholders, recognition of the realities of agrosystems, surveys of farmers and value chain agents, and collaborative *in situ* research have enabled the sharing of academic and traditional knowledge. A strong observation was the recognition of the coexistence of agricultural development models that manifest themselves not only at the technical level but also in the institutional and economic spheres. This has been diagnosed in different domains [1; 2 ; 5].

The objective of the study was to analyse the institutional context of the LFS in the FWI. The description of the links between structures, the presentation of agricultural sectors and the analysis of biotechnical processes provided by experts and other stakeholders made it possible to build the socio-technical system (STS) of LFS in French West Indies, using the Geels (2002) approach (Figure 1).

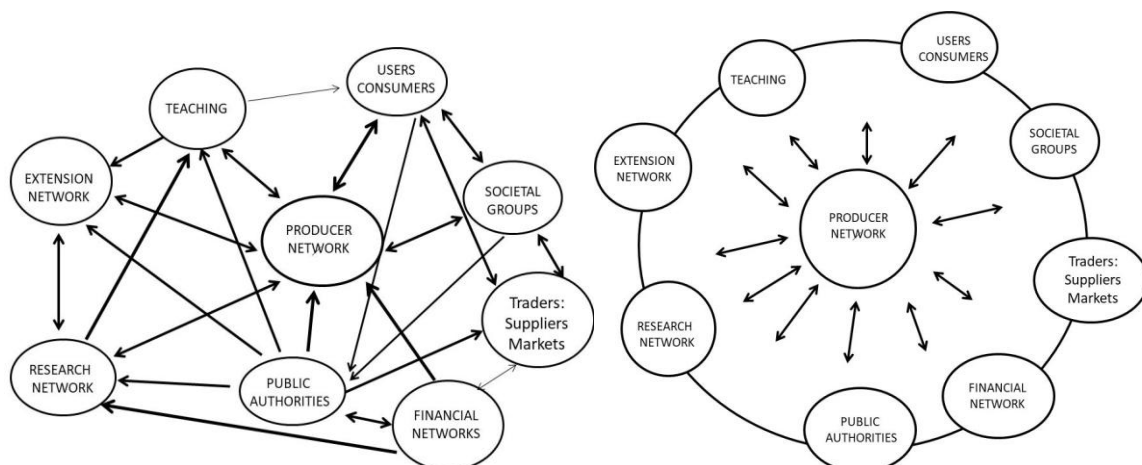


Figure 1. Representation of the existing socio-technical system for agriculture in FWI (adapted from Geels 2002): fig 1a deployed graph (on the left), fig 1b (on the right) simplified graph.

The key players in the organization of agriculture in France, on which the FWI depend, are all present at the highest level. These are for example, the livestock & animal health services of DAAF, the research units upon livestock farming (INRA) or animal health (CIRAD), or agricultural or animal development services (CDA). Financial institutions (banks, donors, ...) and markets (input, output, ..) are very visible in our situations unlike other underdeveloped tropical areas [2]. Civil society and more particularly the associative sector is very active with regard to the national condition, since the creation of associations is proportionally more numerous ([www.recherches-solidarites.org](http://www.recherches-solidarites.org)): in the heritage (and cultural) sphere, the social sector, and the economic domain (including an environmental entry). This is how societal expectations are expressed in terms of food quality, issues of pollution of natural resources and the preservation of endogenous knowledge.

Each compartment of the STS, (each circle of the graph) seems to be uniform, although there are differentiations due to the multiplicity of actors and sub-objectives (not described here) within each group. However, for the overall analysis, Geels [4] indicates that the activities of these groups are guided by a semi-coherent set of rules or "sociotechnical regimes" adopted by different social groups. A global approach of their structure, functioning, objectives and sphere of power is desirable for each implementation of an innovation or development plan but could not be exhaustively achieved in this first phase of study. The arrows represent the links or fluxes existing between the groups, both in the material (products, money, etc.) and immaterial (information, decision-making power, etc.) domains.

Due to the large situation of co-existence of systems (formal and informal) the first conceptual STS model allows to describe the specific services dedicated to each sector (Figure 2a, 2b, respectively).

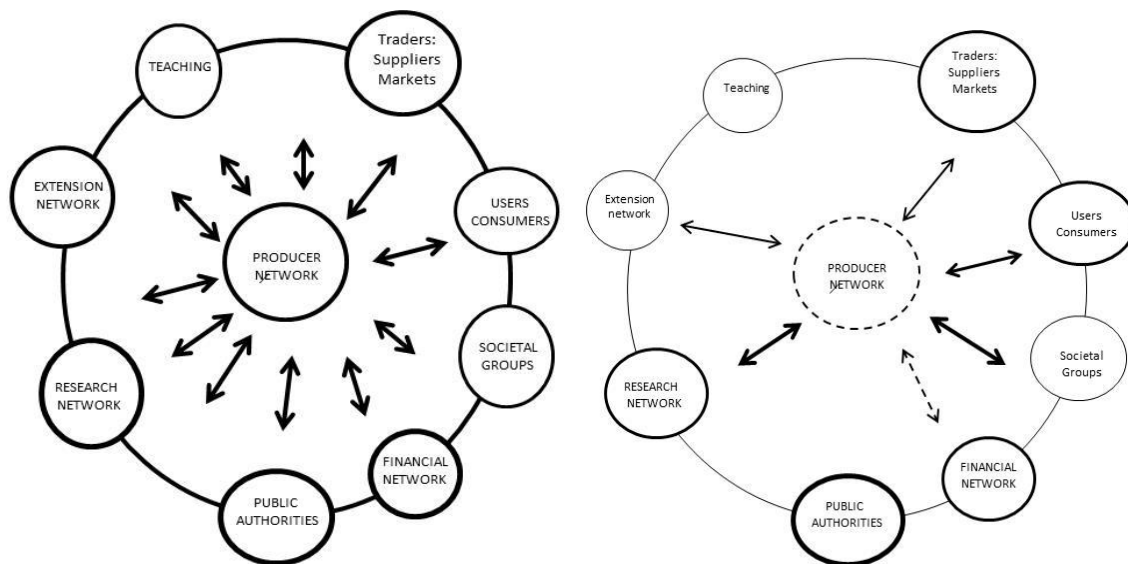


Figure 2. Representation (adapted from fig1b) of the existing socio-technical systems within the formal livestock sector (figure2a on the left) and the informal one (figure 2b on the right) in FWI.

All the compartments of a STS are present in FWI for the formal livestock sector [1 ;3]. It should be noted that the visible and identifiable entities and services that could be interviewed are those of the professional organized model. The administrative, research, training and extension institutions set up exchanges only in projects of organized sector (formal sector) and in a conjunctural way. As for the 'economic sphere', the financial institutions and markets (for input and output) are common to both activities. On the other hand, for the informal sector [2 ;3 ; 5], the STS seems to be unfolded in an incomplete way : for example there is less intervention from actors belonging to the public authorities or financial networks and agricultural training (in terms of specific technical advices). There are also differences in the number of interrelationships between entities and compartments of this STS. As for the informal livestock systems which is more diffuse within family farming [3], very territorially rooted but with little organization in structures [3 ; 5].

These activities, deeply rooted in the culture and rural economy of the region, require an urgent focus on their rehabilitation. Synergetic actions, through the 2 models, are need to adress territorial development whilst preserving the environment through an agroecological perspective [1, 3]. In this regard, it is important to insist on the analysis of the social feasibility, which has been reflected in the statements made by institutional and professional actors. The various exchanges reveal a number of social tensions. Producers' confidence is fading and they have less and less confidence. This is further exacerbated in our island environment [2] characterised by a situation of models co-existence.

In order to implement innovations that fit into the local LFS context, we should: i) reinforce collaborative studies between farmers and researchers in a win-win approach [1, 3]; ii) improving organizational cultures and behaviours and fostering networks and linkages [2]. And more over, according to Chia and Dulcire [2], to produce a meaningful outcome, it is not only necessary that the economic situation is propitious (necessity to cope with the crisis), but also that the actors, for example, those with the regulatory power (administrations) or those who exercise their legitimate demand (including farmers) have built a common vision.

**Acknowledgments :** Europe FEADER programs, Region Guadeloupe, Parc Naturel Martinique.

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