

Socio-economic determinants of innovation in horticultural production systems



INNOVATION can be defined as a socio- technical process appropriate to rural companies in which can be distinguished: (I) The invention or find (herbicide, organization, culture...) which can be the fact of a farmer, a researcher, an actor of the field, (ii) The innovation which can be defined as a new practice (Schumpeter, 1935). The innovation is thus a process which values invention by integrating it into a system of production. The diversification of the agricultures on the horticulture of export comes under this process. We propose (Temple and Sibelet, on 2005) to qualify the socioeconomic conditions of its realization and to conceptualize it by a grid of analysis.

Ludovic Temple ^{1*}, Nicole Sibelet ²

¹ CIRAD, Département des productions fruitières et horticoles, PS4 T50,
Boulevard de la Lironde

34398 Montpellier, France

² CIRAD, Département Territoires Environnement Ressources Acteurs

TA 60/15, 34398 Montpellier, Cedex 5 France



Qualification of the conditions of a horticultural diversification of export

Two objectives rule the determining factors of the diversification (I) to decrease the risks (ii) or to segment the markets to create situations for trade (Malézieux et al. 05). The socioeconomic conditions of a horticultural diversification of export can differ according to exogenous or endogenous character of the mobilized investments.



An innovation of diversification linked to exogenous investments



The emergence of horticulture sector of export in the tropical countries is often bound to foreign investments, finalized towards the satisfaction of the international markets. These investments are mainly implemented by big companies (farm-produce, multinational industries) within the framework of integrated fields or plural-active urban investors. This dynamic is frequently based on intensive industrial mode of production of fertilizers. This last one sometimes meets limits in its environmental/sanitary "externalities".



An innovation of horticultural diversification linked to endogenous investments

Others situations concern some processes of horticultural diversification coming from domestic agricultures. These last ones mobilize extensive systems of production in fertilizers, in small scale farms. They are materialized by adaptations of the technical trajectories of the domestic agricultures. Their competitiveness on the regional and international markets implies economy of scale and commercial economy. These last ones are done in three ways of additional collective coordinations: (I) vertical coordinations (contracts, networks) between farmers and downstream companies, (ii) horizontal organizations between farmers (cooperatives, groupings...) which mutualize the means of production (iii) the interactions between both by coordinations between actors of the fields and institutional (popularization, research...).



A typological grid of analysis of the innovations

The elaboration of a grid of analysis of the innovation of a horticultural diversification mobilizes works on other productions (Sibelet, 2005). It is based on the principle that any process of agricultural innovation is carried by actors of the fields (table 1). Two factors distinguish these processes:

- The origin of the invention: where the idea comes from? Who is the leader?
- The Vector which has allowed that the invention became innovation: we distinguish in that case the processes supported by non-farmers agents (popularizers, researchers...) who are going to facilitate the process of innovation without being the actors and spontaneous processes of innovation which did not need or did not benefit from external interventions. These processes are favored by steps of Action Research (Liu, on 1997).

Table 1. Framework of the innovation analysis

Origin of invention / vector and support of external agents	Outside	Inside
Process of supported innovation	A) Strong involvement of the "Spreading" projects of development Introduction of a new technique of horticultural multiplication on banana tree	B) Farming dynamic requested as starting point or leaning point Grafting of local species on cultivated species (solanaceae) Layering techniques, pruning of fruit trees
Process of spontaneous innovation	C) Farming innovation based on ideas or techniques coming from outside. Introduction of a new variety (banana, pineapple...)	D) Farming dynamic mostly not detected or not taken into account Horticulture food producing associations and rotations

Bibliographie

- SCHUMPETER J. (1935). La théorie de l'évolution économique. Recherches sur le projet, le crédit, l'intérêt et le cycle de la conjoncture. Dalloz, Paris, 586 p.
LIU M. (1997). Fondements et pratiques de la recherche-action. Editions L'Harmattan, Paris, 350 p.
MALEZIEUX E. MOUSTIER P. (2005). La diversification dans les agricultures du sud : à la croisée de logiques d'environnement et de marché. Cahiers agriculture Vol 14, 375-82.
SIBELET N. (1995). L'innovation en milieu paysan ou la capacité des acteurs locaux à innover en présence d'intervenants externes : nouvelles pratiques de fertilisation et mise en bocage dans le Niuafo'ou (Comores), thèse INA-PG, 283 p.
TEMPLE L. SIBELET N. (2005). Déterminants socio-économiques de l'innovation dans les systèmes de production horticoles. Communication au "Seminar on Strategic Development of Horticulture Supply Chains in SSA". Banque Mondiale 11 octobre 2005.

Conclusion

This grid of analysis underlines that socioeconomic conditions of the horticultural diversification of export are determined by two structuring axis:

- The ability of the farmers and upstream/downstream companies to stabilize the contractual coordinations (homogeneity of the quality, traceability of the batches).
- The ability of the various actors to work in synergy leaning on the recognition of the pre-existent dynamics.



Centre de coopération internationale en recherche agronomique pour le développement
Département des productions fruitières et horticoles
www.cirad.fr