

A conceptual model to grasp the complexity of agroecological microfarms

Kevin Morel^a, François Léger^b

^a INRA, UMR 1048 SADAPT, Paris, France ; e-mail : kevin.morel@agroparistech.fr

^b AgroParisTech, UMR 1048 SADAPT, Paris, France ; e-mail : francois.leger@agroparistech.fr

In the last decade, urban agriculture became a major issue in society and science. In the urban context, the proximity of population and the strong pressure on the land raise the double challenge of farming styles which can be both highly multifunctional (urban food sovereignty, social link, ecosystemic services...) [Aubry et al., 2012] as well as viable on very small areas. Nowadays, an increasing number of microfarming initiatives are emerging in an attempt to address this concern. These farms are often very diversified market gardens with an agroecological approach. Because of the high diversity of their products and their claimed multifunctionality they can be considered as complex systems. This complexity and the alternative nature of these initiatives beg the question of relevant analytical frameworks to understand them.

The aim of our contribution is to present a conceptual model to grasp the complexity of agroecological microfarms. This model has been built from field interviews combining anthropology and agronomy in order to better understand the global nature of the studied systems. These interviews have been carried out in northern France on 10 highly diversified organic market gardens, which sell their products locally and implement agroecological techniques on small surface areas.

In my presentation, I will describe the structure of my model (*Figure 1*). Microfarms are organised around a subjective life project with many facets of same relative importance: the search for self-reliance, different attitudes to work, aesthetics, meaning, health, a decent income. From this project follow operational objectives which are both quantitative and qualitative. These objectives determine numerous and interdependent strategic choices. The intricacy of these choices can be analysed through 4 dimensions: (i) interaction with the community, (ii) organisation of the diversity of crops, products and markets in space and time, (iii) investment in equipment (buildings, machines and tools), (iv) ecological and technical choices. At the end of my presentation, I will illustrate the use of our model with a few examples based on the studied farms.

This conceptual framework is a theoretical basis which makes possible to grasp the complexity of agroecological microfarms in a simple visual way. It can be thus used as a concrete tool for leading individual and collective discussions with farmers about the strategic choices they make on their farms. The continuation of our work will be to use such discussions to improve and validate the conceptual model with the farmers and create a simulation model in order to study the viability of agroecological microfarms.

(See figure and reference on the following page)

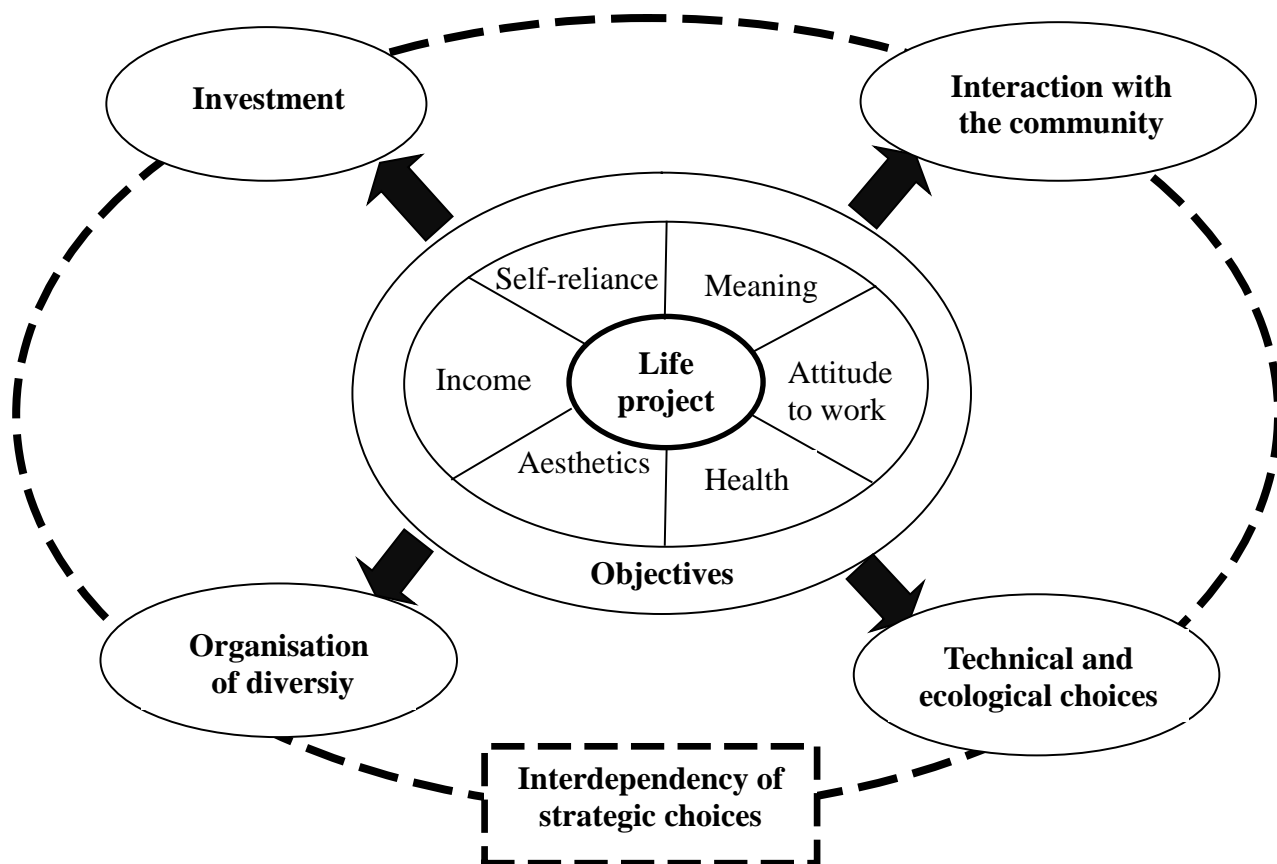


Figure 1: structure of our conceptual model

Reference

Aubry, C., Ramamonjisoa J., Dabat, M.-H., Rakotoarisoa J. Rakotondraibe J. (2012): Urban agriculture and land use in cities : An approach with the multi-functionality and sustainability concepts in the case of Antananarivo (Madagascar). Land Use Policy 29 : 429–