

MODERN AGROFORESTRY IN SWITZERLAND: THE PERCEPTION GAP OF ITS CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

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Introduction

Traditional agroforestry has always existed in Switzerland, for example in the form of standard orchards or wooded pastureland. After World War II however, the state subsidized extensive tree-cutting because trees were seen as standing in the way of farming development, but also to prevent alcoholism (fruit spirits production). More than two out of three high-stemmed trees fell from 1951 to 1991. Chestnut groves almost disappeared, nowadays saved thanks to public funds. Wooded pastureland remains a traditional farming management and well-liked Swiss landscape in the Jura and some Alpine regions.

Very few farmers practice modern agroforestry in Switzerland. What motivates them? They planted trees on surfaces controlled by the agricultural legislation, which does not define this practice and therefore neither supports nor regulates it, because they are convinced it is sustainable. We usually represent sustainable development with three pillars (a balance between environmental protection, economic development and social development). The ecological aspects of agroforestry are described in a rich international literature. The economic aspect was recently studied in Switzerland with theoretical calculation models. The social aspects have barely been approached. One goal of this study (Berger 2015) was to highlight this social dimension, looking for the perception of modern agroforestry.

Method

The author has interviewed four farmers practicing modern agroforestry and presenting different characteristics.

Farmer 1: 16 ha into conversion for organic farming, growing cereals under poplars.

Farmer 2: 6 ha organic farming, cultivating vegetables, selling fruits and berries for special regional products, started to plant trees to prevent soil erosion.

Farmer 3: 23 ha with crops and orchards.

Farmer 4: 30 ha with various crop rotations under various trees (for fruits and wood) to enhance biodiversity.

In addition, four “outside observers” with a good working knowledge of agriculture were also interviewed: two agronomists working in agriculture services, one agronomist working in an environmental service, one biologist working on projects with farmers.

The farmers had to answer three questions related to the three dimensions of sustainable development as mentioned above, namely about their **autonomy** (optimisation of local resources: protection of soil, water resource management, dependence on external inputs), their **independence** (profit margin, degree of specialization, sensitivity to the economic and political situation, dependence on subsidies) and the **quality of their life**.

To compare the perception of agroforestry between farmers and observers, the author used 9 criteria derived from a tool assessing the contribution of farming systems to sustainability: Multi-attribute assessment of the Sustainability of Cropping systems (Craheix et al. 2012). It takes the form of a hierarchy tree with 39 criteria. The author chose 3 main criteria from each dimension of sustainable development (**Figure 1**):

Economic: long-term productive capacity, economic performance, contribution to the economic development.

Social: quality of working conditions, ease of implementation, expectations of the society.

Environmental: pressure on resources, biodiversity conservation, contribution to the environmental quality.

The farmers had to grade each criteria with notes between 1 (least sustainable) and 5 (most sustainable) with 3 for average Swiss agriculture, considering their current agroforestry system and their farming system before implementing agroforestry.

The observers had to grade the same way agroforestry as well as organic farming. Organic farming was used as reference since it has federal directives and subsidies and is considered as relatively sustainable in Switzerland.

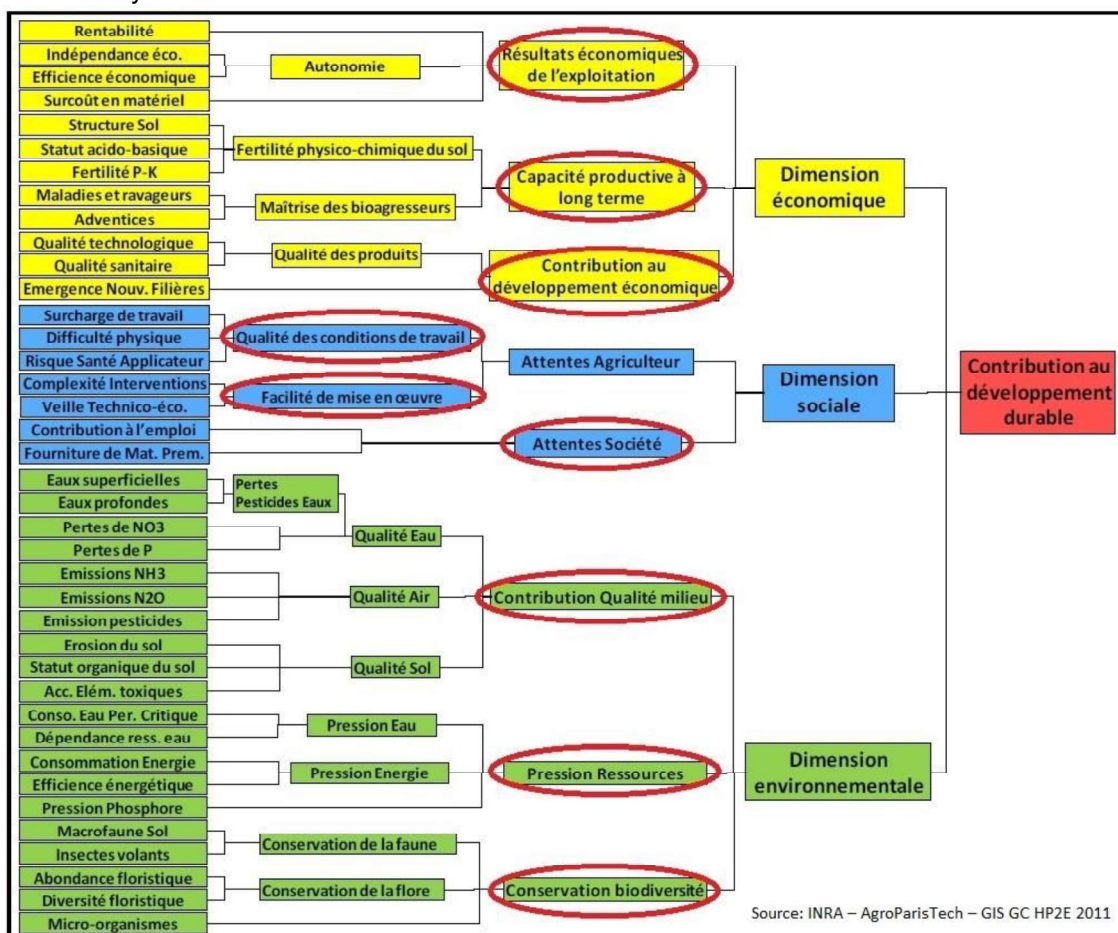


Figure 1: The 9 criteria from Multi-attribute assessment of the Sustainability of Cropping systems (MASC 2.0) chosen to assess sustainability, are circled in red.

Results

Here are some key findings of the study.

The four farmers said they had a good quality of life, though one added it was sometimes financially difficult. About financial independence, some were satisfied while the others found themselves too dependent on public subsidies. Considering resources, all farmers considered to be self-sufficient or quite self-sufficient.

Results for the criteria of sustainable development are shown in **Figure 2**.

Agroforestry received only one grade below average from the farmers, whereas observers each gave many times grades below average for agroforestry.

For most criteria, the farmers gave higher grades for agroforestry compared to their former farming system, which means they consider agroforestry more sustainable. These farmers continue to plant trees on their farms. Moreover, the criterion “long-term productive capacity” received unanimously high grades (from 4.5 to 5).

The observers generally evaluated agroforestry less sustainable than organic farming.

It should be noticed that the observers had very divergent answers. For instance, two criteria of the social dimension, “ease of implementation” and “expectations of the society”, received the lowest as well as the highest grades.

Discussion

The choice of criteria used reflects the subjective approach of the author to evaluate agroforestry, as well as the answers reflect the subjective feelings of each participant. The sample of people interviewed (limited within the context of a Certificate of Advanced Studies) is small for a firm conclusion. Nonetheless the results undeniably show a substantial gap in the perception of agroforestry between farmers practicing it and outside observers. The durability

assessments of agroforestry by observers are at variance with each other, which reveals a lack of knowledge about agroforestry.

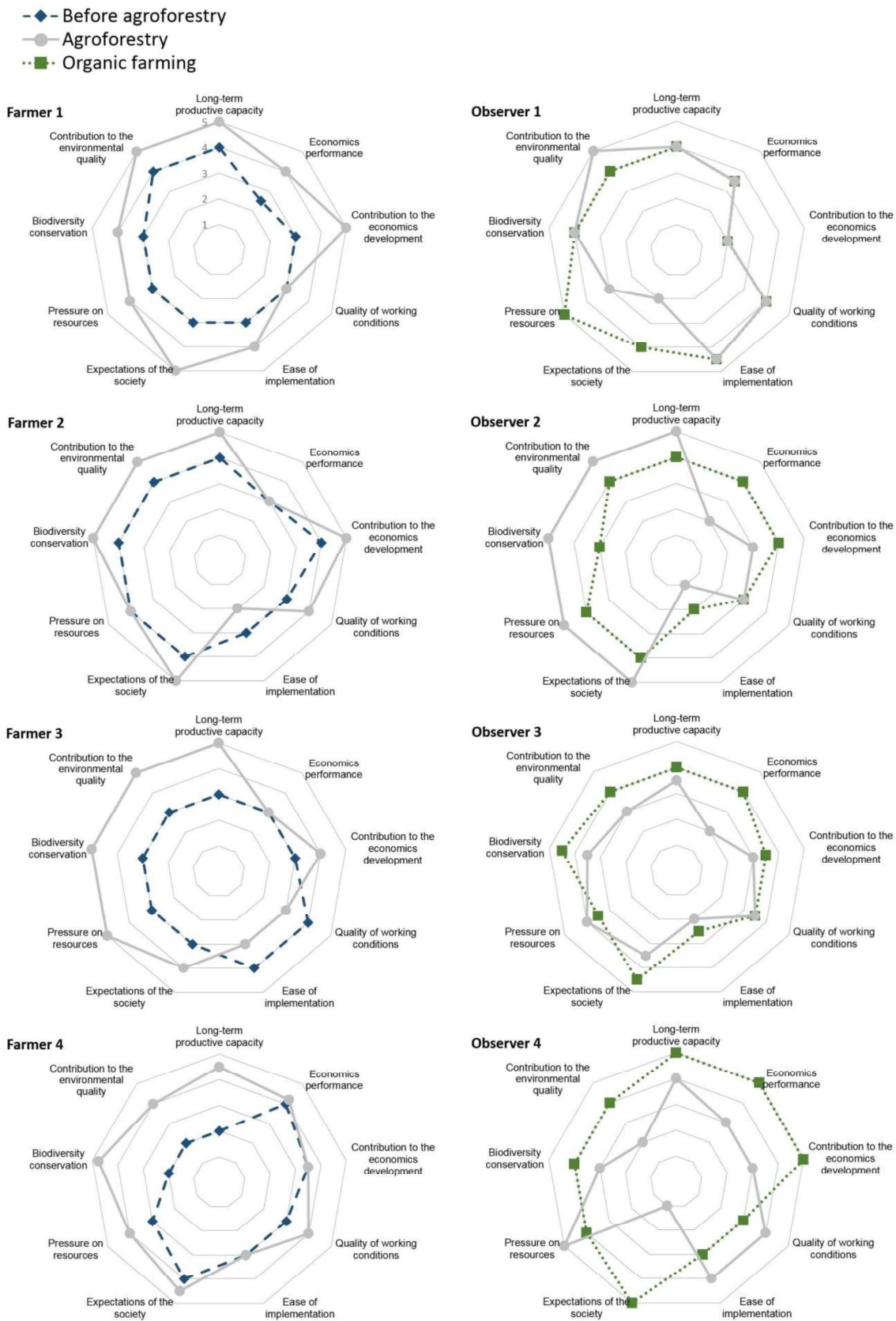


Figure 2: The participants gave grades between 1 and 5 for each sustainability criteria: 5 meaning sustainable and 1 not sustainable. The four farmers gave grades for their farming before practicing agroforestry (dark dashed line) and currently with agroforestry (light-gray solid line). The four “outside observers” gave grades for organic farming (dark dotted line) and for agroforestry (light-gray solid line).

In Switzerland, the term of “agroforestry” does not exist in the legislation and therefore this practice does not receive any direct support. Some “ecological payments” are related to conditions not always compatible with agroforestry. Thus some farmers give up some federal subsidies to keep the freedom to manage their agroforestry system. Whereas it is laid down in the Swiss Federal Constitution that agriculture has, among others, to substantially contribute to the conservation of natural resources and maintenance of rural landscape and that agriculture must fulfil multiple functions, agroforestry has not been researched sufficiently so far to be recognised as an option for a sustainable productive farming system.

This lack of information and communication about agroforestry represents both an obstacle and an opportunity for its development.

On one hand it is difficult for farmers to practice agroforestry because they do not find much advice and support (**Figure 3**). They have to give up some subsidies while colleagues might get money for “ecological measures” maybe less efficient than agroforestry, and they have to cope with the mistrustful looks of outsiders.

On the other hand Swiss pioneers in agroforestry feel themselves responsible for their farms - instead of following government policies or techniques learnt in school. Agroforestry farmers are convinced that they contribute to the sustainable development of agriculture. They think what they do is not only right for themselves and the environment, but also profitable on a long-term perspective. They are satisfied with their lives, which sharply contrasts to the largely dominant discourse in the media of farmers opposed to the “greening” of agriculture that supposedly hinders them from producing, complaining about their situation and calling for more state support.



Figure 3 : Visit of agroforestry fields with the farmer for the valuation of his work and the exchange of information

In Switzerland, agroforestry could contribute to goals like a sustainable food production and the implementation of resilient agricultural practices that increase productivity while contributing to the preservation of ecosystems. However, the lack of expertise prevents a large-scale development of agroforestry. Furthermore, the strong division of roles and responsibilities between agriculture and forestry does not help when collaborations could profit both of them. Agricultural legislation is developing fast. Regulations do not promote agroforestry yet and should at least not hinder or forbid it in the future.

We must stop seeing agriculture as part of the problem and help farmers to consider themselves as a part of the solution. The pride to be a farmer and to shape the future is not specific to agroforestry farmers, but to all willing to take and assume risks seeking for a sustainable production. In deciding not to optimize subsidies within the restrictive legal framework and betting on the complementarity between trees and crops, the four agroforestry farmers regained their freedom to decide which production system is sustainable and gives job satisfaction. A dissemination of the positive image of these innovative farmers could give a boost to other farmers and promote production techniques more climate- and resource- friendly.

References:

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