Participatory Agroforestry Development in Switzerland

Mareike Jäger, Felix Herzog
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In Switzerland, agroforestry systems have a long tradition
Even silvoarable systems were a form of land use, that has been practiced for centuries in Switzerland, but were forgotten
Agroforestry in Switzerland - the traditional standard tree orchard in a modern setting

- Combinations of standard fruit trees incl. Nut trees with various intercrops (vegetables, soft fruits, arable crops ...)
- Focus on fruit production, as well as biodiversity and landscape
Project Agroforestry Network
Switzerland 2014 - 2018

- Building a network of agroforestry pioneer farmers and monitoring the development of the agroforestry plots

- Farmer to farmer exchange of experience regarding management, environmental impact, economics, selection of tree species and varieties (fruit trees, forest trees, wild fruit ...)

- Establishing the Swiss Interest Group on Agroforestry as a contact and extension center, development of tools, creating a website and organization of events

Pictures, M.Jäger
Currently 15 Demonstration plots mainly in arable regions
Arable crops in combination with walnut trees (also black walnut), wild cherry, wild pear, lime and sorbus
Varied AF system with standard tree cherry, apple trees, different varieties of wild fruit, vegetable production in between.
Agroforestry system with chestnuts
Agroforestry system with nut trees and plums on farmland, mobile broiler barns, which rotate within the crop rotation on the field.
25 demo plots show the whole range of silvoarable agroforestry in Switzerland
Examples of monitoring on agroforestry plots
Monitoring the development of soil structure and nutrient status

- Soil analysis / basic nutrients
- Spade sample / structure scoring
- Aggregate stability test
Regular interviews* for the practical management and the perception of farmers in relation to biodiversity and environmental impact of the system

Measuring tree growth for tracking the accumulation of biomass and carbon storage

Abbildung 1: Messen des Brusthöhendurchmessers auf 130 cm (M. Kuster).
Activities of the Swiss Interest Group on Agroforestry - Stakeholder meetings in the context of AGFORWARD
Cours Winter pruning on fruit trees
Essential practical findings from the first two years of the project

The trees are still young (<10 years) and are hardly ever perceived as a limitation to crop production. This may change with the increasing age of trees.

Challenge
- Crop rotation
- Pest management and pesticide applications

Pictures: S.Stalder, E.Hilpert
Insect pressure

Stronger shading and increasing problems with slugs. But: fewer lice, since the intercrops are more shaded. The challenge will be to find cultures that are shade tolerant and avoided by slugs.

Regular tillage allows to control mice infestation. However, mice retreat to tree strips and must be fought there carefully.
2 practical insights

- Planting holes in the field which have been dug out with the digger causes too deep planting of trees. The planting holes even sag together with time, so that a depression occurs, filled with water.

- Overall, the knowledge on trees among farmers needs to be improved, and thus the «mistakes» from the tree nursery (for example too steep scaffold branches ...) can be detected and corrected by the farmers themselves.
Trees develop rapidly and benefit from the fertilizer in agriculture and the mineralization by the tillage.
No age mix of the tree population in newly created silvoarable agroforestry systems. Plantation character is the result. A typical feature of an orchard is getting lost: mix of young, middle-aged, old and outgoing trees.
Conclusion after two Years

• Both, farmers and policy makers, show an increasing interest in agroforestry development.

• Agroforestry can contribute to address urgent questions of modern agriculture: climate smart arable farming, water and resource protection, increased profitability, etc.

• Each farmer needs his/her individual agroforestry project, copy-paste does not work.

• Successful projects are not subsidy-driven but are managed by farmers who have a «tree mentality».
«We do good to ourselves by managing our own farm landscape, which we encounter every day, not in a boring and dull, but in an interesting and loving way. We not only influence the feelings of the local population but also our own.»

Edi Hilpert, Agroforestry Pioneer

Thank you very much for your attention!

High-stem salad!

Pictures: Edi Hilpert