

Field tour May 31

2. A search for sustainable production systems

The bus will bring us to a company in Germany where two young Dutch farmers started agroforestry almost ten years ago. They have fantastic experiences with various types of animals in the woods and are now finding out how these can be combined better and better with crop cultivation.

Before that we visit Twickel Estate where Agroforestry is in its childhood. In a truly delightful rural environment you will be informed about a number of promising ideas on transition.

Twickel Estate



Twickel Estate over 67 km², half forest, half agricultural land, with over 50, mostly dairy, farms.
Commissioner: Egbert Jaap Mooiweer.

The ambition of Twickel is restoring agriculture combined with creative redevelopment of chains and closed carbon cycles. This means that the estate wants to introduce agroforestry, but combining trees and agriculture on the same plot is not yet available. Visitors can see agroforestry in his childhood, for example:

- Combining agriculture and forestry to create integrated and sustainable land use systems. Looking for opportunities to integrate windbreaks, riparian buffers, alley cropping, silvopasture and forest farming.
- Developing strategies for multi-storey cropping systems, e.g. on a dairy farm that is redundant. Three of such farms will follow in 3-5 years' time.
- Balancing agricultural production with natural resource conservation in small scale cultural landscapes focussing on soil management.
- Establishment of riparian forest buffers to reduce soil erosion.
- First steps in developing equipment and processes for the cultivation, harvesting and processing of forest derived agricultural products for human foods and biofuel production.

Also challenging is the transformation of more than 300 ha of forest. The question is how to transform into agroforestry a forest that actually works well for wood production and provides excellent balances. Most appealing are woodland systems with chestnuts and walnuts.

Visitors will be informed of possible transitions to Agroforestry. And they will be invited to give advices for further development and for dealing with problems.

Frecklinghof



Frecklinghof is the biological mixed farm run by Dutch farmers who started it in 2008. *Size:* 155 ha. Several livestock species and crops. *Location:* Tecklenburg, 175 km from Nijmegen. *Farmers:* **Chiel van Dijk and Monique van Dijk.**

General: Livestock: dual purpose cattle for dairy (32) and meat (40), pigs, chickens and geese. Furthermore: grassland (80 ha), crops (40 ha of rye, peas, triticale and spelt), forest (32 ha oak/hornbeam) and vegetable garden (0.5 ha). Milk and meat are the main income generating products. Products are partly processed and sold on a weekly regional market, and in the farm shop. In the forthcoming years facilities on the farm for making cheese and slaughtering will be realised. Peas are grown for animal feed, the cereals are sold to local brewers and bakeries. The milk is sold to the factory but on the short term they themselves are going to process the milk into dairy products. The forests produce plenty of good mushrooms. However, selling of forest mushrooms is forbidden in Germany, as is forest grazing. The latter is, however, tacitly accepted and monitored by local foresters.

Chiel and Monique are developing their production system looking for ways to minimize energy use and optimize both ecological and economic profit. To this end calving takes place in spring, animals (oxen, chickens, pigs) are slaughtered before the winter.

Apart from Chiel and Monique the farm employs one person. Three Kelpie dogs are essential in herding and moving around the different livestock animals on the farm. Without them more people had to be employed on the farm.

Integration: Trees are not yet fully integrated in the production systems developed at Frecklinghof. But their role is becoming increasingly important. All animals have access to

the forest. It is the favourite place for the pigs who are in the open air outside all year round. But cattle graze and look for fodder in the forest as well. The forthcoming years Chiel and Monique intend to create large circular plots with food forests in the centre and crops in the outer part of the circles. When market demands for food forest products increases, so will the food forests. Chiel and Monique intend to plant forage trees to feed their cattle during the winter time.

Benefits: The forest (grassland and stubbles) provides the pigs with feed. Cattle finds forage in the forest which supplements the pasture diet. The forests help closing the energy balance on the farm. These benefits are likely to increase with the projected increase in the role of the forest and planted trees in the near future.

Contribution: The role of trees in the development of a sustainable farm system in which profit results from minimising input and from ecological and economic interaction.

Must see: A large farm with a significant number of innovative activities aiming at developing a truly sustainable form of food production.