

# IOTA

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## **IOTA Monthly Updates: November 2010**

### **Agroforestry – Martin Davies**

Having been brought up on high output arable farms cropping and trees have never sat very comfortably with me. However, once I moved into the organic sector in the South West I have seen more in-field trees and understand the subtle benefits they can offer, primarily to stock. With further work for Natural England, delivering Environmental Stewardship advice, I have become aware of the real environmental benefits of trees and woodland to the farmed environment. This deeper understanding has led me to really look at how trees interact with food production and the longer term benefits they could offer in our search for sustainable farming systems.

As part of this personal research I recently attended a workshop run by the Organic Systems Development Group (ORC) at Dartington Hall near Totnes. This was the first specific workshop that I've attended on the subject and it was a fascinating day and gave me a real understanding of how diverse a production area agroforestry covers.

Agroforestry is a concept of integrated land use that combines elements of agriculture and forestry in a sustainable production system. With an emphasis on managing rather than reducing complexity it promotes a functional bio-diverse system that balances productivity with environmental protection. Agroforestry systems are classically classified according to the components present. Trees with crops are referred to as *silvoarable*, trees with animals as *silvopastoral*, and trees with crops and animals as *agro-silvopastoral*.

In the UK traditional agroforestry systems include woodland pastures such as the New Forest, parklands, orchard grazing and even hedgerows. However, modern systems include silvoarable and silvopastoral systems (such as those at Wakelyns) and woodland chicken and egg production (such as those that were being practiced until recently at Sheepdrove).

With both ecological and economic interactions between trees and crops and livestock the total productivity within these systems is usually higher than in monoculture systems due to complementarity in resource capture. Trees modify their local microclimatic conditions (temperature, water vapor content of air and wind speed) and as such they can have real benefits to crops and livestock which are grown with them. They will also reduce the amount of nutrients which are lost by maximizing the internal cycling of nutrients. Other such benefits include the regulation of soil, water and air quality, enhancement of biodiversity, pest and disease control and climate change mitigation and adaptation.

By integrating trees into the agricultural landscape there is a real potential to impact on the local economy by increasing economic stability, diversification of local products and economies, diversification of rural skills, improving food and fuel security, improving the cultural and natural environment and the landscape diversity.

Agroforestry will also support the production of a wide range of products including food, fuel, fodder and forage, fiber, timber gums and resins, thatching and hedging materials, gardening materials, medicinal products, recreation and ecological services. However, the role of agroforestry in protecting the environment and providing a number of ecosystem services must be fully understood before integrating trees into farming systems.

The potential of agroforestry as a sustainable land use system that combines production with conservation of natural resources has not yet been fully realized in the UK. But I hope that as more growers and advisors understand the potential and diversity (in type, from parkland to alley cropping) of agroforestry systems more research work will be done and eventually the number of trees in the farmed environment will increase.

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