

ECOLOGICAL FARMING SYSTEMS – THE REAL TARGET FOR ORGANIC AGROFORESTRY

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Sustainability in land management systems is important at EU policy level. This has helped to establish organic farming as a viable option and recent studies confirm the ability of this system to benefit biodiversity. However, the scale of the benefit appears relatively small, due to the low frequency of organic farms and to their isolation. A further, less obvious, reason is that the current structure of organic farms is tending towards a plateau based on a standard type of rotation constrained often by a limited range of crops and animals selected and bred for use in conventional agriculture.

Research both in agricultural and natural systems shows that there are many ways in which the use of functional biodiversity in organic farming could be highly beneficial for the environment, the farmer and society. Potential applications need to be considered and introduced at different system levels from within-crop (or animal species) upwards. Such introductions are based on the provision and assessment of appropriate genetic variation and on the development of inter-cropping systems. Some examples will be given to illustrate potentials within and among crops.

Arguably, the highest system level is agroforestry, integrating the management of trees, crops and animals. Comprehensive integration of biodiversity among all of the elements in such a complex system can provide a wide range of outputs in the categories of food, materials and energy, with associated benefits for the physical and biological environment. Agroforestry can thus increase opportunities for labour and for the efficiency of its deployment. It can also facilitate development of local markets for the range of outputs, which can be particularly beneficial for local economies and for the happiness of the local population (an aspect rarely mooted).

Some of the R and D needs for functional biodiversity and agroforestry are clear and are in hand. Others, particularly higher level integration of diverse aspects of production and management, are difficult to define and to tackle. It may be that progress in these areas can be gained only through analysis of practical examples of complex systems.

What is clear, is that there is much to be gained among all aspects of sustainability of land use, far more than from 'standard' organic agriculture. To do so will need the use of both 'carrots' and 'sticks' in Government land use policy. Regrettably, in the current DEFRA/ELS agri-environment scheme, neither the word agroforestry or its use appear in the prescription.

