ORC Research Digest no. 25 - Oct 2021

AGROFORESTRY

Agroforests as habitat

The importance of agroforestry for biodiversity

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YEAR
2019-2023

FUNDING - PROJECT
EU Horizon 2020
- AGROMIX
CPRE
- Hedge Fund

Among the benefits of trees on farms is in creating habitat for biodiversity. The trees and associated vegetation offer food sources and areas for shelter, dispersal and reproduction for many types of organisms. Much of this biodiversity is functionally important for farm productivity: so-called agrobiodiversity. In doctoral research co-supervised by ORC, Tom Staton reviewed evidence showing the positive effect of silvoarable systems on pollinators and natural enemies of crop pests (1). His experimental work revealed how the flowering understories of the trees contribute to this effect (2).

Hedgerows, as one of the most traditional ways of integrating trees and shrubs into the farm system, similarly have this important habitat value. A review by ORC on the ecosystem services of UK hedgerows and what benefits a 40% expansion might bring to nature, the society and economy, showed that part of this effect is to do with enhanced habitat connectivity for highly mobile creatures such as hoverflies and bats (3). Shelter belts also have this function as ecological corridors, and in a new initiative promoting optimum shelter belts across six farms in the Cotsworlds, ORC will be monitoring the biodiversity gains from these plantings, alongside the outcomes for crops and livestock.

Wakelyns Agroforestry, Suffolk: trees on the farm create a range of habitats for biodiversity

Losing species from ecosystems undermines ecosystem stability. The relationship between biodiversity and resilience is one aspect of important new research being undertaken by ORC and its partners under the Agromix project. At Wakelyns Agroforestry, Suffolk, and five other experimental sites in Europe, different types of biodiversity were sampled in and between the tree rows of agroforestry fields, as well as control areas of open field and woodland. The results will be used to seek to answer the question: how resilient are mixed farming systems, and what role does biodiversity play in that resilience?

FURTHER READING

1. Staton *et al.* (2019) doi.org/10.1016/j.agsy.2019.102676
2. Staton *et al.* (2021) doi.org/10.3390/agronomy11040651
3. CPRE and ORC (2021) tinyurl.com/nre9wb58

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