Ecosystem Services Case Study: Red Earth Farm

The fictional case study below has been designed to enable us to discuss three key questions in the context of ecosystem services:

1. What ecosystem services do and could this farm offer? If you are uncertain about what counts as an ecosystem service, the diagram overleaf may help to guide your analysis.
2. How can they be measured, valued and managed?
3. What practical issues does the study illustrate as far as the future development and valuation of ecosystem services in a farming context is concerned?

Case Study

Red Earth Farm is a mixed tenure farm of total 500 hectares. Of this 400 ha is rented under the Agricultural Holdings Act 1986, and the remainder is owned (but subject to a mortgage with the Agricultural Mortgage Corporation). The main farmhouse and two workers' cottages are located on the rented land along with the farm buildings. The owned land consists exclusively of bare land with no dwellings or buildings. The land abuts the west bank of the River Severn to the north of Tewkesbury (both the tenanted and owned land).

The landlord has invested nothing in the farm since the present tenant, Ivor Gripe took on the tenancy in 1978. Ivor himself however in his early years invested heavily in field drainage, water supplies, a new dairy unit for 150 cows and a 1,000 tonne grain store. Sadly all this is now showing its age. Ivor has had several warnings about the adequacy of the grain store for the Assured Combinable Crops Scheme, the dairy inspector has issued a list of required works which must be undertaken over the next year and the Environment Agency is concerned that silage effluent, slurry and dairy washings may be getting into the river system (albeit on a relatively small scale).

This will require major investment; the new landlord (a will trust created for a distant nephew of the settlor) has shown some interest in the potential for investment which will show a return, but at the age of 67 years Ivor is pondering the economic sense of further investment on which he will recoup little or no return himself. His sons and daughter could, in principle, be eligible for succession to the tenancy but given the economic straits experienced by farmers in recent years it looks increasingly likely that the two eldest will seek their fortunes elsewhere (Alison is a veterinary surgeon and Andrew a chartered accountant). Ivor has always reinvested every penny in the farm, which of course is also the family home. Younger son Edward, 19, is more interested and is helping at home in a gap year after A levels (good grades) while he ponders his own future.

All of the land is registered under the IACS scheme (Integrated Administration and Control Scheme) for SFP/BPS (Single Farm Payment/Basic Payment Scheme) purposes, and Ivor has also entered an Entry Level Stewardship Scheme (ELS). This mainly covers hedgerow management, ponds, protection of a small archaeological site, grassland management for farmland birds.

Ecosystem Services	Current Status	Potential Status	Value approach	Key opportunities	Key barriers	Way forward
Provisioning Services						
Food						
Fibre and fuel						
Genetic resources						
Biochemicals, natural medicines, pharmaceuticals						
Ornamental resources						
Fresh Water						
Regulating Services						
Air quality regulation						
Climate regulation						
Water regulation						
Natural hazard regulation						
Pest regulation						
Disease regulation						
Water purification and waste treatment						
Pollination						
Cultural services						
Cultural heritage						
Recreation and tourism						
Aesthetic value						
Habitat or Supporting Services						
Soil formation						
Primary production						
Nutrient cycling						
Water cycling						
Photosynthesis						

Extracted from: Defra (2007) *An introductory guide to valuing ecosystem services*, London, Defra