Delivery of landscape-scale environmental benefits through co-operative action

Pontbren Farmers, North Powys, Wales

Introduction

Compared to many other EU countries, UK farmers have limited experience of co-operative working. However, there is great potential to target agri-environmental schemes to support co-operation within the agricultural sector. Landscape-scale environmental benefits which could be realised through co-operative action programmes include the delivery of flood storage capacity within river systems, reductions in diffuse pollution within catchments, the enhanced management of common land, and de-stocking programmes.

The Pontbren farmers have been working co-operatively since 1997; today Pontbren has become an agri-environment scheme, tailored to a particular catchment, combined with co-operative marketing projects and run from the bottom up. Its achievements are manifest and it has won support across the political spectrum.

Background

Originally three families came together to restore hedgerows and shelterbelts, along their common boundaries, with a view to keeping hardier breeds of sheep which could lamb outdoors. The process gathered momentum and a number of streamside plantings and broadleaf shelterbelts were also established. As the landscape began to alter, a farm walk was arranged to explain the plans to immediate neighbours. Without exception they asked to join and the group of three became 10 and was formally constituted as a legal entity.

Objectives

The group is committed to farming at the highest possible standards of environmental management and animal welfare.

Funding

As outlined in Methods, the group's funding fits their programme: long-term funding from the Welsh Assembly Government (WAG) and Forestry Commission Wales, further funding through Enfys, administered by Wales Council for Voluntary Action.

Materials and Methods

Study area

The Pontbren Farmers consist of 10 neighbouring families who farm about 1000 ha in the catchment of Pontbren Stream near Llanfair Caereinion in North Powys.

Methods

Since the Second World War farmers have been politically encouraged to increase production with grants and subsidies and farming has responded to the extent that the industry is now heavily dependent on public sector support. The Pontbren approach is different. Rather than undertaking work which attracts grant aid they have set their own programme and sought funding that fits: long-term funding for the woodland work has been agreed with the WAG and FC Wales, and further funding for hedgerows, ponds and wetlands has been agreed through Enfys – a lottery funded programme administered by Wales Council for Voluntary Action.

Results

Environmental benefits

- Land-use change (reduced stocking density and conversion from pasture to woodland) has improved water storage in the landscape.
- Around 26.5 ha (16.5 miles) of hedgerows have been planted.
- Approximately 120 000 new native trees have been planted. Twelve ponds have been established, covering 2.2 ha (5.4 acres) of ground.
- Areas of wetland have been fenced off to ensure protection.

Biodiversity increased

- Otters have returned after an absence of 30 years.
- Water voles, Britain's most endangered mammal, have been sighted.
- Pontbren is now home to three birds on the UK Red List of species of highest conservation concern (hen harrier, skylark and linnet) and nine birds on the Amber List (barn owl, lapwing, snipe, kingfisher, curlew, red kite, cuckoo, stonechat and woodcock).
- There have been measurable increases in many other species of birds, small mammals and beetles.

Economic/carbon storage benefits

- Cut wood, windblown trees and hedge trimmings are chipped and used as winter bedding for animals, saving road miles over imported straw (previously bought in from as far as Lincolnshire).
- Seeds for the newly planted trees are gathered from the farms, guaranteeing local provenance, and grown in Pontbren's own tree nursery, saving hundreds of road miles over imported tree stock.

- New woodland can absorb 219 tonnes of carbon dioxide per annum: enough to offset 701 000 miles of driving.
- Pontbren contributes to a thriving local community: 33 craft jobs have been protected, and seven local businesses supply materials.
- Peat free compost for use in the tree nursery is produced at Pontbren. So far this has replaced 4700 garden-sized bags of peat, and will continue to save a further 500 bags every year.

Conclusions

The Pontbren Farmers have demonstrated that the development of binding social capital amongst land users at the scales at which ecosystem services are manifest (landscape rather than farm and field) for management and policy implementation can result in significant environmental benefits.

Initially the scheme was small scale with a few farmers working together to achieve simple land management changes. The evident success of their early effort facilitated the expansion of the project to include adjacent farmers and other stakeholder groups and the ambitions of the group.

The improvement of the water storage capacity of the soils in the Pontbren catchment demonstrates how upstream land-use decisions (by farming communities) have downstream consequences (for rural and urban communities)

Policies aimed at protecting and enhancing biodiversity should be spatially explicit at a landscape level and embrace the wider range of ecosystem services, including flood risk reduction and the impact of interventions on the economics of productivity land use.

Future plans

As a consequence of this work a consortium of public bodies (The Flood Risk Management Research Consortium) is now undertaking a major piece of research on this site over the next four years. The main contractors are the Centre for Ecology and Hydrology, Imperial College, the University of Wales, Bangor and Nottingham University.

Reference

Chel, J., Francis, O., Frogbrook, Z., Jackson, B., Marshall, M., Mcintyre, N., Reynolds, B., Solloway, I. and Wheater, H. (2008). *Impacts of upland land management on flood risk: multi-scale modelling methodology and results from the Pontbren experiment*. Flood Risk Management Research Consortium Research Report UR16.