



case study

environmental sustainability



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The Objective One Partnership
for Cornwall & the Isles of Scilly

GRASSLAND CHALLENGE

Duchy College
Stoke Climsland
Callington PL17 8PB
Telephone: 01579 372315
www.farm-management-sw.co.uk

the project

Grassland Challenge is a partnership project led by Duchy College (part of Cornwall College, a partner in the Combined Universities in Cornwall) on behalf of the Cornish Grassland Societies in association with the Institute of Grassland & Environmental Research (IGER).

The Programme has invested £604,680 from the European Agricultural Guidance and Guarantee Fund (EAGGF) in the project which has a total cost of £1,637,538.

Grassland Challenge aims to improve the competitiveness of grassland and forage producers in Cornwall through technology transfer and dissemination of best practice via demonstration farms, focus groups and technical bulletins. The project recently spoke at the 2005 International Farm Management conference in Brazil.

measures of environmental sustainability adopted

To promote the prudent use of natural resources

The project does a great deal to reduce farm waste e.g. by showing practical ways of keeping rainwater out of slurry and manure storage so not only is the volume of this potential waste material reduced but there is also the opportunity to turn it from waste into a resource (to substitute for inorganic fertiliser).

Soil, crops and manures are analysed by private sector companies (some subsidised by the project) to ascertain the exact requirements of nutrient inputs to outputs and farmers are also encouraged to use PLANET software to calculate this, to avoid excessive fertiliser use.

Work is also being carried out on the over sowing of maize with grass/clover mixtures, and the cultivation of maize stubble immediately after harvest, to support Environmental Stewardship actions to stop soil erosion. Grassland Challenge has an organic focus group and liaises with the Organic Study Centre and Organic South West to develop benchmarking systems across



Grassland Challenge demonstration day

farms. Information is provided on the best practice for the timing of slurry and farm yard manure application to enhance the absorption of nutrients by crops which reduces the need to apply chemical fertilisers.

In terms of energy efficiencies, the project has researched and instigated the use of woodchip corrals which allow over wintering of stock in open yards, negating the need to lay concrete and construct permanent buildings.

The project also promotes the use of grasses with high sugar content; these grasses have a higher energy content which not only improves livestock milk production and growth, but also "mops up" excess nitrogen and prevents it leaching into the environment. Red and white clover sowing is promoted where feasible because the plants fix nitrogen efficiently, reducing the need for this element in fertilisers. Maize crops are pushed for their efficiency in converting sunlight into energy which in turn can easily be taken up by livestock, especially cattle.

Water minimisation is supported through such farm management measures as keeping clean water out of slurry storage and instead diverting rainwater for washing and livestock drinking water.

With regards to local sourcing the project helps farmers use more home-grown forage rather than importing it and it works with local organisations such as Cornwall Quality Livestock Producers, Cornwall Farmers and



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Meat SW to promote locally branded meat and forage based livestock as a healthy option for local buyers and consumers.

Project officers recycle office paper, glass and plastic bottles, use paper on both sides and purchase stationery in bulk. The project itself uses ICT for communication and provides information via the website to those members with access to ICT. Equally, farmers are encouraged to substitute paper systems for electronic via subsidies for electronic accounting systems.

To protect and improve the environment

The value of biodiversity on project member farms is highlighted by carrying out bird, vegetation and small mammal surveys on focus farms, providing joint activities and information dissemination with Linking Environment and Farming (LEAF). The project also collaborates with the RSPB to improve bird-friendly practices e.g. promoting whole crop silage being used as the former provides a better habitat for over wintering birds. Grassland Challenge has been investigating and demonstrating how the atrazine herbicide might be replaced by eco-sensitive alternatives for maize now that the REACH directive has led to the withdrawal of this herbicide.

To increase awareness of residents, businesses and visitors of the value and importance of the environment

The entire project focuses on disseminating best practice for farm management to benefit the farmer and the environment. An environmental policy has been developed dealing with project delivery; this is circulated to project officers as part of induction. Focus group meetings, on-farm demonstration, technical bulletins, conferences and shows all raise awareness with project members on the environmental measures mentioned above. Subsidised slurry and farm yard manure analysis encourages an understanding and calculation of the amounts members need to apply to the land. Training is given on the use of PLANET software. Work is ongoing with IGER's 'Green Futures for Grassland' research project which helps grassland managers and environmentalists collaborate to influence the evolution of Environmental Stewardship and find real world solutions to resolve environmental issues associated with improved grassland management.

benefits of environmental sustainability

High sugar grasses have an elevated energy content which improves livestock milk production and growth



John Laws, IGER Senior Research Scientist, demonstrates organic manure application rates at a Bude Dairy Focus Group Meeting

and makes better use of grassland nitrogen thus preventing leaching of the nutrient.

The introduction of subsidised slurry and farmyard manure analysis demonstrates business efficiency gains by decreasing fertiliser costs which has increased the standing of the project with grassland managers. Meanwhile the reduction in chemical fertiliser use helps avoid pollution. And by keeping rainwater out of slurry storage there is less volume to deal with which in turn decreases cost and labour and simultaneously reduces pollution from dirty water. Reuse of water as wash water or for drinking means less water has to be sprinkled back on land at high cost to farmer. Both actions also help farmers to comply with environmental legislation.

The woodchip corrals have many benefits, for instance they do not require straw for bedding, or the chores of spreading the bedding or scraping out of manure, saving both cost and time on farm. The corrals offer a cheaper way to keep beef cattle through winter, helping to reduce the negative impact of the change from beef subsidies to single payments while also providing the forestry sector with an outlet for thinnings now that the market for pulping of thinnings has diminished due to an increase in the recycling of paper. The project's ability to respond to needs expressed by project members (as with finding solutions to over wintering of livestock via corrals) through links with innovative research has demonstrated the benefits of involvement in local political structures governing investment in the sector, such as the Cornwall Agricultural Council. The project's collaboration with the environmental initiative 'LEAF' gives it credibility as LEAF is recognised and accepted by Defra and farmers alike as a body pulling together research and helping farmers to



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Speak up about how they are improving environmental sustainability. Work with organisations supporting local sourcing and the marketing of local produce may help dissuade people from going for cheaper imported goods and so helps develop the local markets.

The project demonstrations have shown how red and white clover reduces energy use in the production and transport of fertilisers, leading to reduced costs. And demonstrations of the use of maize has shown it to be a cost effective feed and that less machinery is needed to harvest it as maize only needs to be cut once annually whereas grass needs three cuts per year.

Wildlife surveys will help demonstrate whether Cornwall's intensively managed farms are helping to improve biodiversity or not rather than using aggregated figures for the south west region; anecdotal information from Cornish grassland societies suggests the presence of farm birds is increasing whereas figures for the region show a decline.

Use of the electronic software such as PLANET to assist management has had the spin off of increasing members' familiarity with IT and the use of electronic accounting systems has meant that farmers can make better business decisions now that their accounting is more accessible.

The project has reduced its delivery costs by buying in bulk, reusing paper, using ICT for communication, allowing staff to work from home and encouraging them to car share for work trips.

In summary the economic benefits created through the adoption of environmental sustainability measures for farmers are a reduction in the amount of fertiliser and herbicides bought, decreased waste disposal costs, a cut in water bills, improved livestock growth and milk production, opportunities for environmental payments through Environmental Stewardship, reduced costs associated with over wintering livestock and increased local markets for products.

lessons learnt

Paul Ward, Project Manager of Grassland Challenge said:

"Farmers are aware that they need to think more in terms of environmental sustainability not only because of the new environmental payments, but also because of other possible benefits such as savings in purchased fertilisers and feed associated with increased efficiencies in manure and slurry management and

use of legumes. There is also the potential marketing advantages associated with, for example, forage-fed meat and milk and organic production.

"We are making people involved in agriculture aware that profitability isn't necessarily contrary to environmental sustainability. It's a long term process as we have to start with the process of raising awareness, then demonstrating solutions and finally rolling the measures out."

Keith Barriball, County Head of Agriculture at Duchy College, one of the main players in obtaining investment for the project has described the project as a *"wonderful example of partnership activity, with a hugely positive opportunity to improve the well being, sustainability and competitiveness of our livestock producers."*

For more information about how you can incorporate environmental sustainability into your project please contact the Objective One Partnership Office on 01872 241379 or email objectiveone@cornwall.gov.uk.