

Delivering Farm Profitability and Better Environmental Performance using multi-functional technologies: Ingredients for a Sustainable Agriculture Strategy for Northern Ireland

Getting more from available resources



Farms in Northern Ireland face a series of challenges due to the crisis in farm profitability which saw farm incomes drop by 16% in 2014/15 and a devastating 46% in 2015/16. Low prices threaten many farms since low profitability makes it less appealing for the next generation to take over.

In order to increase farm profitability and provide a viable future for the farming sector, John Gilliland and other leading figures from the Northern Ireland agri-food, environmental sector and government have prepared a Sustainable Agriculture Land Management Strategy which is aimed at taking advantage of available local resources so as to reduce costs and get a bigger

margin from sales. This would not only increase farm profitability but also tackle environmental problems such as nutrient leaching, biodiversity loss and climate change. More environmental friendly farms in turn, would offer an opportunity to differentiate the food produced in them and get a higher price for it.

Hedges save money and improve environmental performance

Wet soils are abundant in Northern Ireland due to the wet climate and undulating landscape. Grazing season can be reduced in low lands due to extreme weather events and particularly heavy rainfall events in Spring or Autumn. Planting buffer strips of willow near watercourses helps to control water runoff and drainage. Establishing agro forestry within grazing fields will produce drier swards so as to take more advantage of pastures growing there. In addition, hedges reduce nutrient losses and act as a barrier for the transmission of diseases between farms. The biomass that the willows produce can be burnt in boilers to produce hot water both for milk parlors and farm houses saving a lot of energy (25% of the energy used in a dairy farm is spent heating water for the milk parlor). Hedges not only reduce water pollution but also provide shelter for biodiversity and help to fix carbon dioxide, tackling climate change.



Reduce concentrate and fertilizer needs by increasing pasture diversity



The productivity of swards can be also increased by including legumes in their composition. Legumes fix air nitrogen in the soil reducing nutrient needs and increasing protein content of the pastures. Suitable land in farms can also be used to produce fodder crops such as spring barley; both barley and more diverse pastures reduce concentrate needs and thus production costs.

Information technology shows you the way

GPS assisted soil analyses can be used to optimise pH and improve nutrient management so that excess chemical fertilizer is not applied unnecessarily. Other information

technology tools such as LIDAR (a laser which is used to make terrain and vegetation maps) can map the overland flow pathways by which nutrient is lost to the watercourse and allow better targeting of interventions such as willow blocks. In addition LIDAR will survey the biomass that hedges and farm woodland produce and thus measure how much carbon dioxide they fix. The adoption of other types of information technologies such as PLF (Precision Livestock Farming), contribute to improve farm management and further reduce costs.

The combination of agro-forestry and agro-ecological measures with information technologies foreseen in Northern Ireland Sustainable Agriculture Strategy, open new solutions for farmers to increase their farms' resilience to global market fluctuations and climate change.

For more information:

<https://www.daera-ni.gov.uk/articles/sustainable-agricultural-land-management-strategy>

or contact patrick.savage@daera-ni.gov.uk

Photos: www.daera-ni.gov.uk