



**INISHOWEN  
UPLANDS**

**European Innovation Partnership**



# OUR MISSION

The Inishowen peninsula sits on the North-West coast of Ireland, running from Malin Head in the north to Newtowncunningham in the south. It has a population of approximately 40,500. There are 2688 farmers in Inishowen.

The land within the peninsula is quite varied and wide range of agricultural enterprises are carried out. Single suckling and sheep farming are the predominant enterprises that are undertaken. The area is dominated by High Nature Value farmland (HNV).

The average size of farm in Inishowen is 27 hectares according to the (Sligo Leitrim Donegal Advisory Region, 2015) and in keeping with the national trend, many farmers have off farm income. It is also the case that in keeping with national and EU trends the age profile of farmer and lack the of a successor is a concern.

It is becoming clear that, in a shift from earlier generations where a son was expected to take over the family farm, farmers are now encouraging their sons to look elsewhere to provide a living for themselves citing long hours, over regulation and non-existent returns.

While tradition and culture mean that farming will continue, for the benefits and positive externalities that follow from it to be fully realised and exploited, whether they be the provision of public goods or the landscape and amenity values that are provided, new thinking is required.

The role and purpose of the part-time farmer must be redefined and appreciated. The reality is that most of the farms in the Inishowen peninsula and indeed through Ireland are not capable of generating a sufficient income. However, if there is some tangible return for the production of public goods the long-term sustainability of these farms could be improved. Much of the uplands and mountains in Inishowen are covered in blanket bog.

While conservation of raised bogs receive greater attention, the fact is, that blanket bogs are the rarer ecosystem in an international context. Ireland has the largest covering of blanket bog within Europe, conservation and proper management of this blanket bog coupled with climate mitigation measures on improved low land would yield a number of important environmental benefits such as good quality water, carbon sequestration, high-quality biodiversity and flood mitigation.

## OBJECTIVES

The ultimate aim is to increase farm profitability to ensure that the farming activity that is carried out is contributing to overall household income, not a drain on it. In addition we intend to demonstrate that this can be achieved in tandem with delivering on climate change, biodiversity and water quality

We will trial best practice in managing upland habitat both commonage and privately owned uplands in Inishowen together with innovative practices, including agroforestry, and climate smart innovation on the improved low land to reduce costs and maximise returns.

It is being increasingly recognized that farming the land in a sustainable manner brings a multitude of benefits for all sectors including, agricultural produce, local commerce, a product for the tourism industry to benefit from, open space for urban dwellers to engage in recreational activities, preserving our history and culture, clean air, clean water and water retention, carbon sequestration, and the green image that Ireland trades under and benefits from internationally.



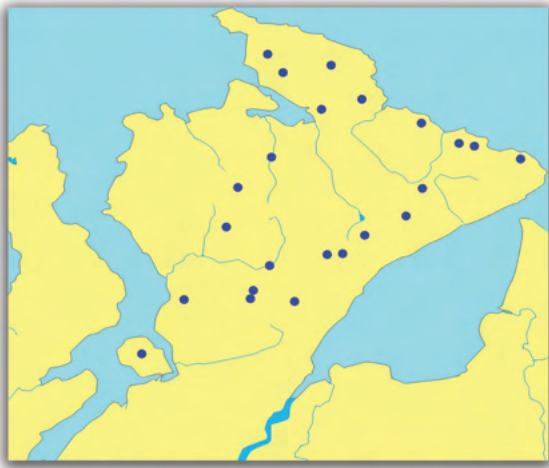
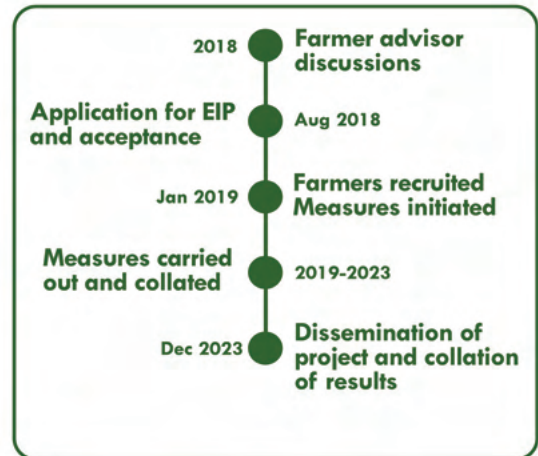


# INISHOWEN UPLANDS

## A EUROPEAN INNOVATION PROGRAMME

### WHO WE ARE:

- Inishowen Uplands EIP setup in 2018
- Local farmers and advisors had got together to try to improve farm profitability whilst farming sustainably
- Inishowen Uplands aims to implement measures in a targeted fashion to deliver the greatest environmental and economic results
- 25 participant farms



### WHERE WE ARE:

- Inishowen is located in the northern most part of Ireland
- Area of 884 square kilometers
- 2688 farmers within Inishowen
- Average size of farm is 27ha (67 acres)
- Dominated by HNV (High Nature Value) farmland

### HOW IT WORKS:

The project is carried out under 5 measures

- 1) Upland Cattle
- 2) Agroforestry
- 3) Diverse Swards
- 4) Red Clover
- 5) Farm Ponds



### WHAT IS EIP-AGRI?

- The European Innovation Partnership for Agriculture (EIP-AGRI) launched in 2012
- The EIP-AGRI brings together innovation actors (farmers, advisors, researchers, businesses, NGOs and others)
- The Operational Group approach makes the best use of different types of knowledge in an interactive way
- EIP-AGRI Network has become part of the EU CAP Network
- 57 operational groups have been funded throughout Ireland



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# FARM PONDS

**Farm Ponds have many benefits at farm level**

**These include habitat creation, water supply, flood mitigation and sediment traps**

**Pollinators, amphibians and ground nesting birds often rely on farm ponds**

**There is a lot more to building a pond than digging a hole and letting it fill**

**Farm ponds can act as an indicator on water quality on farm level**

**This indication can show how farming practices can best improve water quality.**

## SEDIMENT/SILT TRAPS

- These ponds aim to stop sediment and nutrients from reaching larger rivers and streams
- Pond size should be linked to inflow rate
- These ponds aim to stop sediment and nutrients from reaching larger rivers and streams
- Can act as a flood mitigation measure as it will hold more water in the uplands and slow the flow of water.



## WATER SOURCE

- Reduces the need of pumped water to scattered areas of farms
- High water quality is needed to ensure safe drinking water is available
- These ponds can be located in wet areas where springs are present or fill from land (3ha catchment will provide 1m of water)
- These ponds are often havens for biodiversity and help in flood mitigation measures



## BIODIVERSITY

- Ponds can provide a home for more than 100 different species of plant, insect, bird and amphibians
- Mallard ducks are frequent visitors to our ponds
- Dragon and damselflies are predators of biting insects reducing burden on livestock
- Natural vegetation occurs after animals are excluded leaving a biodiverse habitat



## HOW TO BUILD YOUR FARM POND

- There is a lot more to building a pond than digging a hole and letting it fill
- Select function of farm pond based on the area. (Slope, soil type, threats, pressures)
- Ensure size is adequate for area/flow rate
- Pond design should incorporate different levels for a wider range of species
- Suitable drains/weirs have to be installed to allow excess flow out without allowing the edge of the pond to be washed away.
- A mix of direct sun and shade allows for a more diverse pond



**Before**

**After**



# DIVERSE SWARDS

For the diverse sward measure a mix of White Clover, Chicory, Plantain and Perennial grass is sown  
60ha of diverse sward sown throughout farms in Inishowen

Large uptake as farmers can see significant benefits from adding the mix to swards

## BENEFITS OF DIVERSE SWARDS

- Reduced dependency on chemical fertilisers as clover can produce up to 150kg N/ha
- Enhanced nutrient management and capture from deep tapping roots
- Deep rooting nature of different species in the sward also improves soil structure, increasing infiltration capacity. (Chicory roots recorded at a depth of 25cm)
- Increased growth rates on livestock as high protein levels in clover and a more palatable sward due to added herbs. Weaned lambs gained extra .04kg/day (2.8kg/week)
- Anthelmintic properties of certain species, especially chicory



## DIVERSE SWARD CHALLENGES

- Establishing a stale seed bed is essential when sowing diverse swards as use of herbicides will kill the clover and broadleaf species
- Thistles and docks can be an issue on diverse swards
- To create the stale seed bed, allow the land rest after ploughing for a period of 3 weeks to allow weeds to germinate.
- This is then cultivated (If known weed issue this step can be repeated to ensure a greater kill out of the weeds present)
- Different management practices are required to ensure persistence of the chicory and plantain as set stocking livestock especially sheep will seek out the more palatable chicory and plantain for grazing
- Rotational grazing is best practice where animals are moved every 3-7 days allowing regrowth and root structure to develop
- Persistence of the herbs is the main issue with the diverse swards but with low-cost stitching in options the benefit may far outweigh the costs

## DIFFERENT ESTABLISHMENT METHODS

Fields are first assessed to ensure suitability.  
Soil samples carried out and land treated accordingly, as clover requires a high ph



1. Full reseed, one pass



2. Grass tine harrow stitching



# UPLAND CATTLE

The aim of this measure is to establish an ideal grazing mix and density for management and production of biodiverse upland vegetation that will have a financial gain for the farmer and ensure the sustainability for the farm in the future

As the aging profile of Irish farmers and larger portion of farmers now seeking of farm income to supplement farming is leading to less animals on the commonages and upland areas

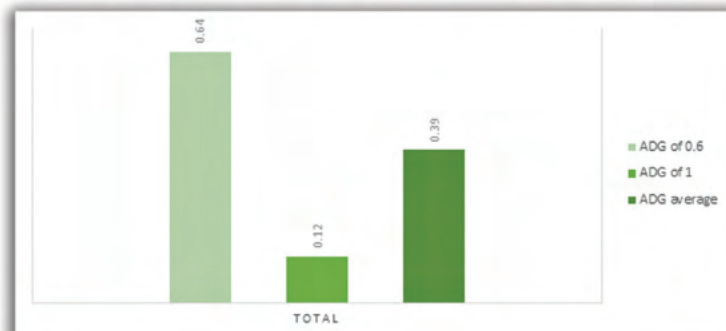
Due to less grazing pressure on these areas the habitats have suffered

Cattle are weighed before and after grazing season to ensure animals are thriving

Uplands will be assessed to ensure the quality of the habit is improved and that no damage is done



Galloway heifers on a diverse sward



## ADVANTAGES

- Increases the farmers grazing platform during the summer months
- Both cattle and sheep benefit from this measure as the cattle are less selective in their grazing
- Help to maintain biodiversity by maintaining habitat mosaics
- Cattle thrive well on Molinia grasses in May-July
- This is a low-cost method of beef production.
- Extends the grazing season
- Reduces fire burdens



A native Irish Dexter cow, with NoFence collar

## RESULTS SO FAR

- Native Irish or Scottish bred cattle are very well suited to the environment
- Performance measurements show young stock can gain up to 1.4kg ADG
- Ecology assessments have shown habitat improvement
- Sheep have been noted in areas that had been abandoned previously
- NoFence collars have been utilised on farms over the past year improving management
- 154 cattle in the uplands throughout 9 Inishowen farms



# UPLAND ASSESSMENTS & VIRTUAL FENCING

## DEMONSTRATION FARM

James' upland was initially assessed in June 2019 and this will be re-assessed over the coming year. The area was divided into 4 zones based on habitat condition and plants species present. Recommendations for grazing were then put in place to further improve these areas.

### ZONE 1



- Wet heath
- Heather older due to lack of grazing
- Heathers, Molinia, Bilberry, milkwort, sphagnum moss and sundews all present

#### Recommendations

- Generally good condition
- Benefit from slight increase in grazing pressure

### ZONE 2



- Heather 0.5-1m in height
- Molinia grass tussocks present throughout

#### Recommendations

- Second priority for mixed grazing to improve structure and reduce cover of Molinia grass
- Outwintering of stock may be considered

### ZONE 3



- Heather very tall and leggy
- Large cover of bilberry forming clumps
- Lower part flattens and small shrubs and trees are established

#### Recommendations

- Priority for increase in mixed grazing
- Tree and scrub spread to be monitored

### ZONE 4



- Acid grassland
- Rushes and grass species prevalent

#### Recommendations

- Top rushes if possible
- Avoid grazing if possible, during flowering season May/June

## NO FENCE COLLARS

- Collars are fitted to any cattle over 6 months of age
- Pastures will be laid out according to the zones
- Cattle are trained using a pasture with access to one fence line
- Training takes 7-10 days
- After training, cattle are grazed according to zone recommendations

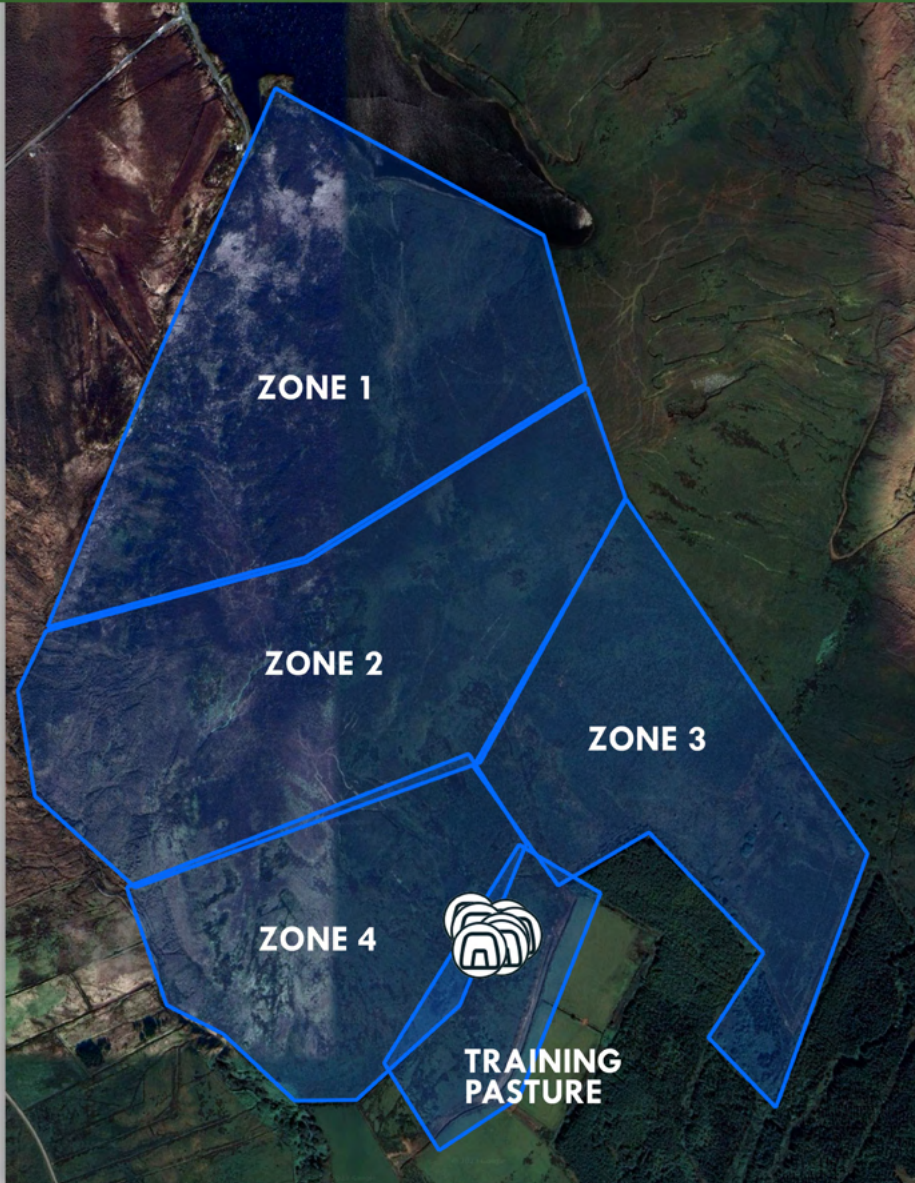


## RESULTS SO FAR

- This area has been grazed for the last 4 years in 2 blocks with the use of electric fencing.
- Improvement in the vegetation structure
- Sheep now have access to areas previously abandoned due to areas being inaccessible from overgrowth
- With the use of virtual fencing, we aim to further improve these areas



# NoFence MAPPING







# AGROFORESTRY

## RIGHT TREE, RIGHT PLACE!

Agroforestry is a key measure in the Inishowen Uplands EIP as it has many benefits on farm level.

These include shelter provision, improving animal welfare, improving water infiltration, nutrient capture, biodiversity, carbon capture and extra income from the sale of timber.

Every farm has areas that are suitable for trees

## 3 MAIN PLANTING MEASURES



1. Trees planted within an enclosed area with no post or tree guard



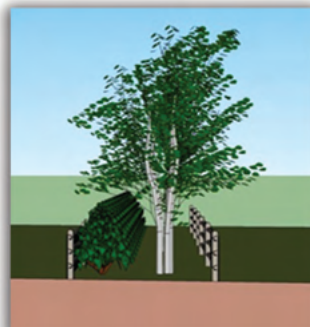
2. Trees planted within an enclosed area with a post, similar to option 1 but with a post to support the tree.



3. Trees planted in an unenclosed area with post and tree guard

## WHAT WE HAVE ACHIEVED

- 8500 trees planted through these measures
- 1150m hedging planted
- "Pontbren" style planting
- 150 Native Irish Pine trees Planted across Inishowen



## AREAS TO CONSIDER PLANTING

- Anywhere on the farm
- Rocky outcrops
- Wet low laying areas of fields (unproductive)
- Awkward areas e.g., too steep for machinery, sharp cornered areas in accessible for machines
- Along water courses to protect water quality and stabilise banks
- To create "Living/green barns" areas to be used in extreme weather conditions and extend grazing season



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# RED CLOVER

*Four participants with red clover grown throughout the Inishowen Uplands EIP*

## BENEFITS OF RED CLOVER

- Red clover reduces costs due to reduction in the need of fertilizer
- Red clover can produce 150-200kg N/ha
- Reduces costs of concentrates required as red clover silage has a higher protein content than conventional silage (16%-20% v 12%-16%)
- Fr bull calves gained 41% (0.33kg ADG) more on meal + red clover compared to a similar group fed grass silage and meal.
- Deep rooting structure of the plant helps improve soil structure.
- Red clover helps improve soil fertility and can be used as a green manure for sowing crops reducing fertilizer costs
- Averages 11 bales/acre/crop with just slurry application
- Possible to cut 3 crops/year



## RED CLOVER CHALLENGES

- Short term crop with a lifespan of 2-4 years.
- Not suitable to heavy grazing
- Weed issues heavy docking infestations
- Land has to be dry to allow for cutting as crop is susceptible to compaction
- Can cause fertility issues in sheep
- Bloat issues when grazing pasture
- Pests and diseases i.e., stem eelworm and clover rot although incidents are rare



Red clover ready for harvest

## MANAGEMENT PRACTICES

- Establish a stale seed bed before sowing
- Ensure ph. and minerals are at optimum levels
- Cut at a higher residual to prevent damage to the crown 7-8cm, graze to 6cm
- A good wilt is needed to help preserve the silage reduce silage effluent



Red clover with dock infestation



Red clover crown



# GALLOWAY BEEF BURGER



Galloway Cattle are suited to the Inishowen Uplands areas  
Their coat is double layered and provides protection from extreme conditions  
and has the added benefit of marbling the meat, as the fat is  
marbled through the meat instead of layering on the meat, leading to better flavour and  
quality of the meat.

## ABOUT THIS BEEF

This sustainable Organic Galloway was born and raised on this farm

Reared on the Uplands of Inishowen grazing on Molinia grasses, herbs and heather whilst a suck calf

Fed on pastures of Diverse swards of herbs and legumes as a year old

Wintered on Red clover silage

No anthelmintics were used or required

Sustainable practices also helped improve habitats and biodiversity

## LOW COST OF PRODUCTION FOR A HIGH QUALITY MEAT!

Average Daily Gain (ADG)

**ADG of .71kg**  
during first grazing season on uplands

**ADG of 1.1kg**  
during second grazing season on  
Diverse sward and Upland pastures



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