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Presentation Climate Change and Ag 20/05/20 [FF]

Attachment 1

Presentation DAFM 20/05/20 [FF]

Attachment 2

DAFM Bord Bia Estimate 2020 26/05/20 [GP]

Attachment 3

DAFM Extract of Expenditure by Strategic Priority and Programme 26/05/20 [GP]

Attachment 4

DAFM Financial Table 26/05/20 [GP]

Attachment 5

DAFM Responses to Green Party Questions 26/05/20 [GP]

Specific questions from the Green Party for DAFM officials

1. STOCKING RATES

- What is the average stocking rate on Irish farms, and can this be grouped into quartiles?

In supplying data on this question, DAFM has replied on a number of sources. This includes data as Livestock units/Ha (1 dairy Cow= 1 livestock units) whilst the Department itself collates data on stocking rates using the typical nitrogen excretion figures per animal type as set down in the Nitrates regulations (85kg N=Dairy Cow; 65kg= Suckler Cow; 15kg =ewe)

Stocking Density	Obs*	Mean	Lower quartile	Median	Upper quartile
All Farms	116,787	1.34	0.60	1.16	1.86
Organic Farms **	806	1.01	0.62	0.93	1.32

* all observations measured as farms with > 0 values and expressed as LU/Ha.

** only have data for organic farms in the organic scheme

Source: DAFM

- What is the average stocking rate by different types of farms (i.e. dairy, suckler, mixed, sheep, etc.) Please provide this disaggregated figure in as detailed a manner as possible.

Farm Type/Stocking density	Obs*	Mean LU/Ha	Lower quartile	Median	Upper quartile
Dairy	16,016	2.32	1.88	2.29	2.74
Cattle Rearing	32,020	1.33	0.79	1.22	1.73
Cattle Other	31,322	1.24	0.61	1.07	1.62
Mixed Livestock	11,520	1.09	0.31	0.77	1.58
Sheep	9,635	1.20	0.62	1.08	1.59
Tillage	2,481	1.65	0.80	1.42	2.10
Other	13,793	0.69	0.26	0.45	0.83

Source: DAFM

**Average
Stocking Rate Kg
N/Ha**

Dairy	172
Sucklers	94
Sheep	23
Mixed	59
Organics	47

- **What is the average stocking rate on farms by region?**

	Total kg/N	Area (ha)	Stocking Rate (Nitrogen/Ha)
Connaught	64,545,446	1,084,306	60
Leinster	129,200,765	1,309,960	99
Munster	173,790,243	1,665,240	104
Ulster	37,510,432	522,153	72
National	405,046,886	4,581,660	88

- **What is the average stocking rate on organic farms in Ireland, disaggregated by farm type?**

Organic Farms	Stocking Rate (Average Kg N/Ha)
Sheep only	23
Dairy only	120
Mixed (Sheep & Bovine)	69
Suckler	65
All Organic Farms	47

While the organic sector is at present a small area of Ireland’s agri-food sector, it is experiencing considerable growth. The area of land under organic production has expanded significantly under the current Rural Development Programme. According to Eurostat the share of utilised agricultural area (UAA) in Ireland allocated to organic farming in 2018 was 117,187 hectares or 2.63% of total UAA up from 1.6% in 2015.

There are currently 2,127 certified organic operators in Ireland, 1,700 of which are farmers, the remainder comprises of processors, retailers, distributors and importers. The 1,700 farmers are predominantly livestock producers with a relatively small number engaged in tillage and horticulture. The numbers above should therefore be considered indicative only as open to potential ‘skewing’.

- **Has the Department ever considered applying a different calculation for stocking rate for cattle based on breed i.e. smaller native breeds v larger continental types/dairy breeds?**

In the current Nitrates Action Programme, SI 605 2017 (Table 6) provides the annual excretion rates for livestock type (e.g, dairy, beef, sheep) in kilograms of Nitrogen and Phosphorus per year. It does not provide for differentiation by breed.

In Member States where there are differentiated excretion figures these tend to be based on weight rather than breed to allow for cross breeding.

FARM OWNERSHIP

- **How many farms in Ireland are in corporate ownership? Has this increased in recent years?**

According to the CSO in 2016 there were 137,500 farms in Ireland with 137,200 of them were family farms or 97.7%. In 2013 there were 139,600 farms and 139,100 were family farms or 99.6%. The other farms were considered commercial farms. Some family farms are incorporating without changing the underlying ownership structure.

1. FORESTRY

- **Has the Department any figures on the carbon sequestration potential of different types of forestry on a per Ha basis (by age of necessary):**
 - **Agroforestry**

- **Conifer plantations**
- **Broadleaf plantations**
- **Typical overgrown scrubland/rewilded areas**
- Approximately 4.3 tonnes of CO₂/hectare/year are sequestered from the total national forest estate of 770,020 ha (Source National Forest Inventory 2019)
- All sequestration figures are indicative and **can vary widely depending on species, location, soil type, and management regime**. Below are the approximate average figures

Forest Type	Volume of CO ₂ sequestered
Conifer	Approx. 10 tonnes of CO ₂ e /ha/year on average over a full rotation
Broadleaf	Approx. 5 tonnes of CO ₂ e /ha/year on average
Agroforestry	Research is ongoing to determine sequestration values that might be typical of agroforestry systems in Ireland. Based on indicative modelling work to date, it can be estimated at approx 1 tonne of CO ₂ e /ha/year

2. LAND USE

- **How is Ireland's Utilisable Agricultural Area currently utilised, i.e. how many hectares are under grassland, used for crops, etc.?**

Area and utilisation of agricultural land in Ireland – 2016						
Agricultural Area Used (incl. Commonage)	Commonage	Agricultural Area Used (excl. Commonage)	Rough Grazing	Grassland (excl. Rough Grazing)	Cereals	Other Crops, Fruit & Horticulture
000 hectares						
4,883.6	427.8	4,455.8	16.3	4,088.0	280.4	71.1

Source: CSO

- **Does the Department have the capacity to estimate the amount of CO₂ sequestered in different types of grassland, and on different individual farms? If not, does the Department have plans to develop this capacity?**

DAFM and EPA have supported a range of projects to better understand the capacity of Irish soils to sequester CO₂ in different types of grassland or on different individual farms. However it remains

very challenging to confidently measure what are typically small changes against a large carbon pool in permanent grassland. As an example, a hectare of mineral soil permanent pasture can contain 200 tons of carbon. The estimated rate of sequestration for mineral grasslands is between 0.5-1 ton C per year depending on soil type, climatic conditions and land use. A change of 0.5 ton requires the ability to identify a 0.25% change in the entire carbon pool, which is very difficult to measure unless you have detailed data on land use, crop type, soil type and soil organic carbon levels at field/part field level which are not currently available.

DAFM is collaborating with EPA, Teagasc and other research institutions to enhance national capacity to measure sequestration by improving its land use and soil databases and by improving GHG measuring capacity through additional eddy covariance towers under the Agricultural Catchments Programme, which will provide detailed information on carbon exchange at an ecosystem level and the drivers of carbon uptake and release. In addition, this collaboration will be exploring other technologies, such as remote sensing and earth observation to assist with improving our understanding of CO₂ removals, to enhance improvements to the national inventory process and also to assess feasibility to measure at farm gate level considering interest in C farming type supports.

3. CAP

- **What funds will be available to the Department to bridge the gap between CAP 2014-20 and the new CAP?**

The funding available for the transition period will depend on the National annual budgetary process and CAP funding allocations in the period from 2021 onwards.

CAP Pillar I is entirely EU funded and is primarily used to fund the Basic Payment Scheme. Ireland's Basic Payment Envelope for 2020, which forms the bulk of family farm income, is €1.21106 Billion

On the basis of current EU budgetary proposals, Ireland's Pillar 1 ceiling for 2021 is €1.163938 Billion.

CAP Pillar II provides funding for Member State Rural Development Programmes (RDP). Ireland's RDP funds a range of schemes such as GLAS, Beef Data and Genomics, Organics, Knowledge Transfer, Locally Led Schemes and others. These measures are funded from the National Vote in the first instance and are the costs are partially offset by the receipt of EU co-funding.

Gross RDP expenditure in the Department's **Vote for 2020** amounts to approximately **€635 million** (with a corresponding receipt of €270m). This excludes Leader funding, which is provided for in the Vote of the Department of Rural and Community Development.

European Commission proposals on a Multi Annual Financial Framework (MFF) for the period 2021 - 2027, provided for a cut of approximately 5% in CAP funding post-2020. Under this proposal, the total CAP budget (EAGF and EAFRD) for the EU 27 would be €365 billion over the 7-year period, in current prices. This would represent a 3.9% cut in Pillar 1 (EAGF/Direct payments) and a 15% cut in Pillar 2 (EAFRD/rural development) compared to the current (2014-2020) MFF. The total loss for Ireland is estimated at some €94m annually, in current prices. Negotiations on the MFF are continuing.

Multi annual schemes under the RDP, even those that are closed to new entrants, and schemes that give approval for future action, will include financial commitments that run beyond 2020. If the Areas of Natural Constraint (ANC) Scheme is included, expenditure in 2021 is expected to be in the

region of **€486 million in 2021, reducing to €297m in 2022**. This is before major schemes such as GLAS or BDGP are replaced or extended, or any new schemes developed. **These figures exclude Leader, which is funded by the department of Rural and Community Development.**

- **How much flexibility will the Department have in allocating this money (i.e. will it be possible to move funds between Pillars One and Two, will it be possible to move funds between different schemes, etc.)? Will GLAS, the Organic Farming Scheme, and other currently closed schemes remain closed until the new CAP?**

The CAP Transitional Regulations are still under negotiation. The proposals are subject to the ordinary legislative procedure, so agreement between the European Parliament, Council and the Commission is required before the legislation can be adopted.

In summary, and depending on the outcome and the funding available:

- it may be technically possible to move uncommitted funding between Pillar II schemes, subject to the approval by the EU Commission of an amendment to our Rural Development Programme;
- it may be technically possible to extend existing schemes during the transition or to develop limited new schemes;
- it may be technically possible to move up to 15% of funding between pillars I and II, but not before 2022, because of the long advance notice required.

The Council agreed its negotiating position in April. The European Parliament adopted its report on Friday 15 May. Trilateral discussions are underway, with a view to reaching an agreement between the European Parliament, the Council and the Commission by June. The legal text is then expected to be adopted in July. This will provide the legal framework for Member States to implement changes to their Rural Development Programmes. The European Parliament draft report agrees that the transitional arrangements should run for 2 years unless the EU Multiannual Financial Framework (MFF) and the CAP post 2020 packages are both agreed by October. The incoming Presidency, Germany, has also publically raised the issue of a two-year transitional period. It is not clear how these timetables will dovetail to allow Member States sufficient time to put in place transitional arrangements.

The possibility to continue existing measures or implement new measures will be dependent on the final agreed EU EAFRD budget for 2021 and 2022, and the availability of national co-financing

Specifically, the draft regulation provides for an extension of the legal framework for a further one year. This, in effect, allows Member States to continue their current Rural Development Programmes for the length of the transitional period. Some measures under the RDP are already finished, and some multi-annual contracts under agri-environmental and climate measures are scheduled to finish at the end of 2020 and 2021, including GLAS and organics. An amendment of the Rural Development Programme will be required to give effect to any changes or extension under the Programme.

On a practical level, there are also operational and administrative limitations to what can be achieved in this very short timeframe. Any re-orientation would have to take account of the impact on the delivery of the targets in the Programme and the financial impact of any changes on the beneficiaries of payments under existing measures.

- **Has the DAFM conducted any analyses into the likely shortfall into CAP funds (Brexit & Covid related), and any shortfalls in exchequer funding to support the current and future Rural Development Programme?**

DAFM has estimated that the potential loss to Ireland of the May 2018 MFF proposals would amount to some €94m annually. Half of this arises in respect of direct payments, which cannot be topped-up with exchequer funding. Rural Development Programme (Pillar II/EAFRD) funding shortfalls could be addressed through increased rates of national co-financing, if resources for this purpose were available.

4. FARMING IN DESIGNATED AREAS

- **What area of farmed lands are designated as Natural Heritage Areas (NHAs), Special Protection Areas (SPAs), and Special Areas of Conservation (SAC)? How many farmers does this include?**

Designation of lands is a matter for the Department of Housing, Planning and Local Government. There are 439 SAC's, 154 SPA's and 148 NHA's. These make up 13.66% of the terrestrial area of the State. It has been estimated that there are circa 35,000 farmers/landowners with land in Special Areas of Conservation and Special Protection Areas. (this total appears to include those with riparian zones.).

- **What additional supports are available to such farmers, considering the restrictions under which they farm?**

There are a number of additional supports available to farmers with designated lands;

The Areas of Natural Constraints (ANC) Scheme deals with areas of land situated on the mainland which are designated as disadvantaged/constrained. The ANC lands are designated in accordance with the provisions of Article 32 of Regulation (EU) No 1305/2013. The Areas of Specific Constraints (Island Farming) Scheme (ASC) deals with areas of land situated on offshore islands. The lands situated on offshore islands are designated as Areas of Specific Constraints in accordance with the provisions of Article 32 of (EU) Regulation No 1305/2013. Payments are provided depending on order categorisation of ANC, i.e. Category 1, then Category 2 and lastly Category 3 provided the applicant manages and pursues a farming activity on all land applied for every year subject to a maximum payment.

All farmers with private natura sites, commonages and Farmland Birds (Breeding Waders, Chough, Corncrake, Geese/Swans, Grey Partridge, Hen Harrier, Twite) were afforded the first priority access into the Green Low Carbon Agri-environmental Scheme (GLAS) in all 3 tranches of GLAS and receive payments depending in the area of the action being delivered.

There are 23 European Innovation Partnerships (EIPs) funded by DAFM. These programmes enable farmers, researchers, advisors and scientists to come together to identify innovative solutions to particular local challenges. Two of the larger projects, the Hen Harrier and Pearl Mussel Projects would encompass designated lands along with 5 other upland projects.

5. NITRATES

- How many farms availed of the nitrates derogation for each of the last 10 years, and how many hectares in total each year were subject to the derogation on these farms? What land area does this represent, and what is the average stocking rate on these farms?

Year	No of Nitrates Derogation Applicants	Approx. Total Land Area (Hectares)
2020	6,465	442,536
2019	6,684	448,900
2018	6,897	446,474
2017	6,995	432,851
2016	6,804	408,201
2015	6,330	369,326
2014	5,793	*
2013	5,408	*
2012	5,273	*
2011	4,685	*

**As prior to 2015 the application system was paper based this statistic is not available*

- How many Kilotonnes CO2 equivalent of methane and nitrous oxide would be mitigated if the Nitrates Derogation was ended? (Please use the same methodology for calculating emissions as is used in the EPA's annual inventory reports.)

It is not possible to calculate with certainty given the possibility of current derogation farmers taking additional land in order to remain compliant with the per hectare limit set out in the Nitrates Regulations of 170/kg/N/ha. If a fixed land area were assumed, however, it is estimated that it would require a reduction of approx ½ million animals on derogation type farms to satisfy the limits of 170 kg N/Ha.

- How many tonnes of artificial N and other artificial fertiliser compounds are imported each year?

	Fertiliser (tonnes) 2018/19	Fertiliser (tonnes) 2017/18	Fertiliser (tonnes) 2016/17
Total Fertilisers	1,547,082	1,714,729	1,552,809
Straight Fertilisers	611,151	699,282	645,214
Compound Fertilisers	935,931	1,015,447	907,595

Total Nitrogen	1,500,701	1,670,799	1,510,972
Straight Nitrogen	589,642	680,167	627,751
Compound Nitrogen (containing N)	911,059	990,632	883,221

- **What is the value in monetary terms of these imports.**

From CSO-

2019- €570.9 million

2018- €582.1 million

2017- €513.0 million

- **Are data available on the amount of synthetic N used on farms by type? Are the sales of such regulated in any way?**

Summary of the use of mineral fertilisers containing Nitrogen over the last 5 Years

The total Nutrient N used in Ireland each year is listed in the table below, table 1. The nutrients are given as tonnes of nutrient sold.

Table 1: Fertiliser sales figures 1999 –2019

Year	Nitrogen (N)	Phosphorus (P)	Potassium (K)
1998/99	442,916	50,513	125,729
1999/00	407,598	49,267	122,695
2000/01	368,667	42,697	106,884
2001/02	363,513	41,869	105,597
2002/03	388,080	43,832	111,135
2003/04	362,525	42,661	110,645
2004/05	352,165	38,645	100,710
2005/06	345,154	37,209	92,880
2006/07	321,588	32,415	84,737
2007/08	308,960	26,350	69,584
2008/09	306,806	20,231	52,403
2009/10	337,574	28,235	72,624
2010/11	295,795	28,107	71,417
2011/12	296,536	27,421	81,179

2012/13	353,044	36,986	92,790
2013/14	331,782	35,584	93,812
2014/15	330,959	36,551	94,242
2015/16	339,104	37,075	95,558
2016/17	369,089	41,893	108,694
2017/18	408,495	46,387	120,267
2018/19	367,364	42,672	114,288

Table 2 Breakdown of Straight and Compound N

Year	2014	2015	2016	2017	2018	2019
Straight N	174,320	170,971	177,152	188,893	205,320	181,909
Compound N	157,480	159,988	161,952	180,196	203,178	185,455
Total	331,782	330,959	339,104	369,089	408,495	367,364

Table 3 Straight Nitrogen fertilisers

Breakdown of the fertiliser products that are included as straight nitrogen and the quantities sold over the last 6 years:

Straight N, tonnes of nutrient sold.	2014	2015	2016	2017	2018	2019
Product						
CAN	101,439	96,189	89,974	99,276	91,221	66,284
CAN + S	35,680	32,477	34,892	36,792	56,120	55,210
ASN	2,543	2,325	1,798	1,794	1,654	900
Sulphate of ammonia	232	186	280	337	227	294
Urea	34,209	38,598	48,799	48,845*	55,232**	57,093**
Other N	198	1,196	1,409	1848	871	2,130

Total	174,302	170,971	177,152	188,893	205,320	181,909
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**Figure also includes Stabilised Urea 46% for 2017*

***Figure also includes Stabilised urea 46% and Stabilised Urea 38N=7S for 2018.2019*

Stabilised Urea sales (Urea+ NBPT) in Tonnes of Products.

Year	Tonnes of Stabilised Urea
2015	5,043
2016	12,000
2017	4,554
2018	7,120
2019***	21,409

***Represents inhibited urea which is urea treated with either NBPT, 2-NPT or NBPT + NPPT

Tonnes of stabilised Urea Product sold (included in the total Urea figure)

Sales of Nitrogen Containing compounds over the last 5 years

Compound containing N	2014	2015	2016	2017	2018	2019
18:6:12	28,625	32,681	34,650	40,983	50,365	44,881
24:2.5:10	30,369	31,253	31,643	35,931	43,174	38,836
27;2.5:5	56,904	53,380	54,370	59,950	64,249	54,745
10:10:20	7,423	6,256	5,933	7,346	6,967	5,986

6. FEED IMPORTS

- **How many tonnes of Palm Oil are imported into Ireland each year?**

In 2019 125,773 tonnes of palm oil were imported into Ireland with 51% of it coming from Malaysia and 46% from Netherlands. In general Palm oil is not used in animal feed in Ireland. A processing by-product, palm fatty acid distillate (PFAD) is used in very limited quantities and estimated at less than 10,000 tons annually, from a total of 3m tonnes of feed used.

- **How many tonnes of maize, soy, and other grains are imported into Ireland each year for animal feeds? Is the GM status of imported feeds recorded?**

In 2019 Ireland imported 3,113,582 tonnes of animal feed. One third was cereals-based feed with about one fifth containing beet-pulp, distillers waste and bagasse and other waste of sugar manufacture.

Imports of Animal Feed in 2019			
Animal feed containing	€000	Tonnes	% of total
Cereals including maize, wheat and rice	174,718	1,040,150	33.4%
Beet-pulp, distillers waste and bagasse and other waste of sugar manufacture	138,957	674,743	21.7%
Soya bean oil	191,895	569,205	18.3%
Glucose, glucose syrup, maltodextrine or maltodextrine syrup	102,250	223,752	7.2%
Low erucic acid rape or colza seeds	45,361	208,445	6.7%
Other such as acorns, horse-chestnuts, Alfalfa, leguminous plants etc	101,685	119,585	3.8%
Sunflower seeds	18,067	99,132	3.2%
Dog or cat food	115,738	97,400	3.1%
Palm nuts or kernels	11,731	81,169	2.6%
Total Animal Feed imported in 2019	900,401	3,113,582	100%

Source: CSO

- **Is the GM status of imported feeds recorded?**

Yes, the GM status is recorded and quantities are indicated in the table below:

Sum of Quantity (Tonnes)		Year
Name	GMO Description	2019
BARLEY	Declared as GM free/Non GM	124246.1
	Not applicable	4000
BARLEY Total		128246.1
MAIZE	Declared as GM free/Non GM	331801.5
	No GM declaration	15265
	Not applicable	31600
	Produced from genetically modified	953977.4
MAIZE Total		1332644
MAIZE GLUTEN FEED	Declared as GM free/Non GM	3300
	Not applicable	
	Produced from genetically modified	214173.2
MAIZE GLUTEN FEED Total		217473.2
OAT FEED	Declared as GM free/Non GM	20416
	No GM declaration	
	Not applicable	320
OAT FEED Total		20736
PALM KERNEL EXPELLER	Declared as GM free/Non GM	82700
	Not applicable	10000
	Produced from genetically modified	26700
PALM KERNEL EXPELLER Total		119400
RAPE SEED MEAL	Declared as GM free/Non GM	98825.25
	Not applicable	0
	Produced from genetically modified	75054.24
RAPE SEED MEAL Total		173879.5
SOYA (BEAN) HULLS	Declared as GM free/Non GM	78416.83
	No GM declaration	
	Not applicable	
	Produced from genetically modified	237619

Sum of Quantity (Tonnes)		Year
Name	GMO Description	2019
SOYA (BEAN) HULLS Total		316035.8
SOYA (BEAN) MEAL	Declared as GM free/Non GM	63781
	Produced from genetically modified	397418.2
SOYA (BEAN) MEAL Total		461199.2
SOYA (BEANS)	Produced from genetically modified	33709
SOYA (BEANS) Total		33709
SUNFLOWER SEED MEAL FEED	Declared as GM free/Non GM	77544.34
	Not applicable	15062
	Produced from genetically modified	2850
SUNFLOWER SEED MEAL FEED Total		95456.34
WHEAT	Declared as GM free/Non GM	194427.4
	Not applicable	10700
WHEAT Total		205127.4
WHEAT BRAN	Declared as GM free/Non GM	2749.22
	Not applicable	
WHEAT BRAN Total		2749.22
WHEAT FEED	Declared as GM free/Non GM	107666.8
	Not applicable	10570
WHEAT FEED Total		118236.8
WHEAT GLUTEN FEED	Declared as GM free/Non GM	18829
	Not applicable	2250
	Produced from genetically modified	3300
WHEAT GLUTEN FEED Total		24379

7. ENVIRONMENTAL SCHEMES

- **What region-based programmes are currently in operation, or have been in operation in recent decades (e.g. the Burren Programme, the BRIDE programme, etc.)? What are or were the aims of these programmes? How successful have they been in achieving those aims?**

- **The Burren Programme**

Objectives: To ensure the sustainable agricultural management of high nature value farmland in the Burren; to contribute to the positive management of the Burren landscape and the cultural heritage of the Burren; to contribute to improvements in water quality and water usage efficiency in the Burren; to allow farmers an income which is linked to farming methods that complement the unique geology of this area.

The Burren Programme is one of the most successful high nature value programmes in Europe and is the forerunner in trialling and improving Results Based Farming Hen Harrier Programme

- **Hen Harrier Programme - €25m scheme**

Objectives: Enhance the upland, high nature value areas in which Hen Harriers breed; to stop the decline in the breeding population of the harrier; to reward farmers for the delivery of vital ecosystem services; help sustain cultural landscapes and vibrant rural communities, and so help the Hen Harrier and biodiversity to thrive.

2019 has been the most successful breed year for the Hen Harrier in 14 years. Over 1,500 farmers in the six SPAs are involved in the programme, habitat is being improved every year. Upland cattle have been reintroduced to some mountains.

- **Pearl Mussel Programme - €10m scheme**

Objectives: to develop an innovative pilot agri-environment programme that seeks to improve the quality of watercourse through a results-based approach; to improve peatland, grassland and woodland habitats; to adapt the results based approach to target aquatic species; to give farmers the opportunity to derive an additional income from their land and help secure the economic viability of agricultural enterprises and the wider rural community.

Nearly 500 farmers in eight pearl mussel catchments are now involved in this programme. The project team are working closely with LAWSAT, ASSAP, EPA and other experts, including DAFM, to improve the interface between farming and high-quality water.

- **Other EIP projects**

There are 21 other smaller EIP projects dealing with a wide range of topics, including targeting unutilised agricultural biomass, sheep genetics, organic production, flood management, pollinators, water quality, biodiversity, soils, peat uplands, invasive species, farming in an archaeological landscape and bio-energy.

These projects are still in the early stages of their 5 year timescale and already many of them are showing positive results of their actions. For example, The Bride Project, working in an intensive dairy region in East Cork seeks to design and implement a results-based approach to conserve, enhance and restore habitats in lowland intensive farming. Danu is testing soils using biological farming practices. Blackstairs Farming Futures and Suas, based in the Dublin and Wicklow Mountains are trialling new ways of working with commonage shareholders and protecting the uplands. All 21

projects are doing such relevant work and involving farmers in the design and implementation of the works.

- **Traditional Farm Building Scheme**

Objectives: This scheme funds the restoration and preservation of traditional farm buildings and structures of significant heritage value and which are conserved for agricultural use. The scheme is administered by the Heritage Council on behalf of the Department.

- **Does the Department have plans to modify any element of these programmes, to promote greater effectiveness?**

The EIP programmes are flexible by the nature. DAFM works with each project and helps them to adjust their plans, if necessary, to do what is best for each farm and each landscape. Engagement with participant is a key part of the process.

- **Can a list be provided of every Irish scheme funded under the Rural Development Programme 2014-20 be supplied? Please clearly indicate how much EU and national funding was made available to each scheme, what dates each scheme was opened or re-opened to new applicants, how many farms availed of each scheme, what the average payment to each farm was.**

The information requested is included in a separate table.

- **What research has the Department conducted, tendered for, or funded to assess the effectiveness of its agri-environmental schemes?**

The 2014-2020 Rural Development Programme (RDP) is subject to rigorous monitoring and evaluation requirements including the submission of an Annual Implementation Report (AIR) on RDP implementation to the European Commission. The RDP has also been subject to a number of evaluations, to assess the effectiveness and impact of the Programme. The evaluations include:

- Mid-term evaluation by Indecon International Economic Consultants (more information below);
- Longitudinal study of the Green Low-Carbon Agri-Environment Scheme (GLAS) by ADAS RSK Ltd. (more information below);
- Spending Reviews by the Department of Public Expenditure and Reform of the Beef Data and Genomics Programme (BDGP), GLAS and the Targeted Agricultural Modernisation Scheme (TAMS II);

- An ex-post evaluation of the RDP, to assess full programme effects and impacts, will be required in 2024.

8. ORGANIC PRODUCE

- **What tonnage of organic produce, disaggregated by type (e.g. beef, liquid milk, eggs, wheat, etc.) does Ireland produce, consume, import, and export each year? And what is the value of these products in euros.**

As outlined above in 2018 there was 2.6% of the utilised agricultural area used for organic production. Table outlines details of organic production as provided by Eurostat in tonnes.

Organic production of animal products in Ireland in tonnes			
	2016	2017	2018
Meat of livestock	1,555	1,550	2,361
Bovine meat	:	1,135	:
Pigmeat	:	20	:
Sheepmeat	:	172	:
Poultry meat	:	223	:
Raw milk, total available on farms	7,335	9,035	17,791
Drinking milk	536	394	9,316
Cream	17	15	70
Butter	0	0	0
Cheese	249	217	391
Eggs for consumption	20,917,591	23,607,295	30,136,036
		:	not available

Source: EUROSTAT

A *Strategy for the development of the Irish Organic Sector 2019-2025* was developed in 2019 in a collaborative effort between DAFM and the organic sector, farmers, processors and retailers. It highlighted significant deficits in reliable data for the sector in Ireland and set as one of its key actions the development of reliable data on which indicators for the development for the sector can be based. To this end, Teagasc are currently leading on a detailed value chain analysis for publication next year.

In 2017, The Irish Organic Retail Market was worth €162 million with a further €44 million generated by direct sales. Based on research done when formulating the *Strategy for the development of the Irish Organic Sector 2019-2025*, the following 2017 production statistics are available:

	Cattle	Sheep	Horticulture	Cereals	Poultry / Eggs	Dairy	Aquaculture
Enterprise Type * (No. of farmers)	1400	600	300	161	150	45	44
Production	* 50,000 Bovine animals excl. dairy cows 15,000 for slaughter	* 63,650 incl. 43,806 ewes, ewe lambs 1.9% of total sheep flock	Veg - 248 hectares Potatoes - 33 hectares Fruit - 41 hectares	Production excl. arable silage c. 7,500 tonnes 0.8% of total cereal production	96,000 layers 22,000 broilers	2,912 dairy cows 0.11% of total milk production	20,000 tonnes salmon 4,000 tonnes mussels

While a monetary value on organic produce produced, imported or exported each year is not available, sector specific statistics indicate that:

- 70% of organic fruit and vegetable are imported,
- A substantial percentage of total sales of organic beef takes place through retail outlets in Western Europe,
- In 2017, 20,000 tonnes of salmon were produced to organic standards. This represents a 100% of the national production with a value of €147 million. Ireland is by far the leading producer of organic aquaculture species with an EU production share of 42%.
- the current supply of organic oats produced domestically account for only 40% of existing demand for the breakfast cereal market alone.

- A large percentage of the current Irish market for organic feed is being imported.
- there is an oversupply of lamb with 70% of organic lambs sold as conventional in 2016

9. ANIMAL WELFARE

- **What are the rates of antibiotic use on CAFO farms in Ireland? Has this increased or decreased over the past number of years?**

DAFM does not currently have sufficient information to answer the specific questions above.

There is no current system that records the use of antibiotics at farm level.

Recording of antimicrobial usage at an individual level will however be a requirement under the new Veterinary Medicines Regulation Reg 6 of 2019. This regulation comes into effect in January 2022 and the requirement to record antimicrobial usage at farm level comes into force in 2027.

In the context of the overall sales of antibiotics in the veterinary sector in Ireland, the Health Products Regulatory Authority (HPRA), reports each year. The data for the 6 years up to 2018 (2019 report not yet compiled) is presented below. The average sales in Ireland is around 100 tonnes of active ingredient/annum. This is a very crude measures, but provides an overall sense of the usage of antibiotics in animals in Ireland.

Table 1. Sales (tonnes sold) of veterinary antibiotics for the years 2013 - 2018

	2013	2014	2015	2016	2017	2018
Tonnes sold	99.1	89.4	96.9	103.4	99.7	99.4

DAFM has developed a system to record antimicrobial usage in the DAFM pig sector. This has been launched in November 2019 and is incrementally being rolled out to commercial pig farms.

The European Medicines Agency (EMA) collates data from across the EU in relation to antibiotic sales/usage in animals. Their latest European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) report (Available at this location:

https://www.ema.europa.eu/en/documents/report/sales-veterinary-antimicrobial-agents-31-european-countries-2017_en.pdf) provides a comparable figure for each EU member stated. The average antimicrobial usage figure in Europe is 107Mg/PCU, usage in Ireland is 46.6Mg/PCU.

Note 1 Definition and calculation of PCU

PCU or population corrected unit is a method of calculating animal biomass and comparing antimicrobial treatment across different species. This method allows calculation of a national average and for farms with the same species to be benchmarked against each other.

The PCU for each animal category is calculated by multiplying numbers of livestock animals (dairy cows, sheep, sows and horses) and slaughtered animals (cattle, goats, pigs, sheep, poultry, rabbits and turkeys) by the theoretical weight at the most likely time for treatment.

The PCU is calculated for each species, weight class and/or production type, as follows:

PCU domestic

- Number of animals slaughtered × estimated weight at treatment
- Number of livestock × estimated weight at treatment

PCU export

- Number of animals transported to another country for fattening or slaughter × estimated weight at treatment

PCU import

- Number of animals imported from another country for fattening or slaughter × estimated weight at treatment

Total PCU is calculated as follows: $PCU = total\ PCU_{Domestic} + total\ PCU_{Export} - total\ PCU_{Import}$

The total PCU by country is calculated according to the above data.

1 PCU = 1 kg of animal biomass.

In Ireland the large population of cattle, which have a high biomass, increases the national PCU and skews the national figure, thus if a national figure was available for pigs it would be higher than 46.6Mg/PCU, (based on work carried out by Teagasc, DAFM have set a national benchmark of 150Mg/PCU for pigs)

- **What is the average number of lactations for Irish dairy cows?**

Irish Cattle Breeding Federation (ICBF) data indicates that the average lactation figure for Irish Dairy Cows is 4.5 lactations/cow.

- **How many convictions under the Animal Health and Welfare Act were secured through DAFM in each year for the past five years.**

2016	11
2017	25
2018	24
2019	19
2020	3

Notes: Three of those convicted in the District Court have appealed to the Circuit Court.

A further 24 cases have been referred to the Chief State Solicitor for prosecution while 2 files are being examined within the Department.

These figures are subject to change as appeals are heard or cases heard.

10. LIVE EXPORTS

- **Which lobby groups have been met in relation to supporting the continuation of live export? Which lobby groups have been met in relation to opposing live exports?**

DAFM engages regularly with stakeholders involved in this export trade primarily to ensure clarity in relation agreed protocols and certification requirements. There are meetings with farming organisations and exporters who support live exports.

DAFM also engages with animal welfare organisations who are opposed to this export trade through the Farm Animal Welfare Advisory Council and the EU Animal Welfare Platform. DAFM also engages with international NGOs who occasionally correspond with the Department.

The Department is also a member of the Steering Group of the World Organisation for Animal Health (OIE) European Region Platform for Animal Welfare where competent authorities and NGOs are represented and where the welfare aspects of such transport are discussed.

- **What would the financial implications be for the sector if live exports to non-EU countries were ceased?**

There has been no formal financial evaluation of live exports to Non-EU countries.

Numbers exported to Non-EU (3rd Countries) over the last five years.

Year	Numbers Exported (Bovines)	Assumed financial value (Industry estimate of €800/animal)
2020 YTD	9,762	€7,809,600
2019	27,033	€21,626,400

2018	19,953	€15,962,400
2017	33,607	€26,885,600
2016	21,858	€17,486,400

The live export trade provides an alternative market for animals that might be out of 'spec' for meat processors, due to factors like age, conformation, weight and this category of animal would attract a reduced price from the meat processing sector.

Farmers, in particular, see the live export sector providing the only alternative competition to meat processors, further economic evaluation would be required to put an value on the competition created by the live export sector.

11. BORD BIA

- **What is the budgetary breakdown for the spending of public funds in Bord Bia? i.e. by product type, spend on domestic marketing campaigns, European (incl UK), and global campaigns?**

See breakdown of Income / Expenditure headings attached – per Rev2020. (Estimate 2020 above).

Exchequer (public) funds consist of :

An annual Department of Agriculture, Food and the Marine Exchequer Grant (in Aid) to Bord Bia.

The sum for 2019 was: €44,844M.

The sum for 2020 is: €48,229M - broken down under Headings of:

*Pay; €13,229 M

*Superannuation; €2M

*Non-Pay (Operational). €33M

Other Exchequer funds consisting of dedicated budget lines for particular operational activities that Bord Bia is engaged in such as:

- a. Food Dudes / EU School Scheme / EU Fruit and Vegetable Scheme – c €3M in 2020.
- b. Sustainable Beef / Lamb (Quality) Assurance Scheme (SBLAS) – funding of on farm/audit inspection costs and ancillary scheme costs – c€6.6M in 2020.
- c. Organic Funding of €0.3M.

Expenditure in Bord Bia is categorised and attributed under its 4 Pillars of Strategic Priority in its Statement of Strategy 2019-2021, through its Annual Plans & Programmes. See attached extract from Bord Bia 2020 estimate for reference..

Concerning Marketing, Promotion, Advertisement Expenditure – this is limited in its scope as under the EU State Aid Rules applicable (Bord Bia is viewed as a State Body and so any expenditure it carries out is attributable to the State). Campaigns on the Home and EU markets are limited in scope and confined to Promotion under the Quality Mark (Quality Assurance Schemes) and all are co-financed by the Industry via BB Statutory levy & other Industry contributions.. Where EU Promotional Programmes are utilised – 70 – 80% funding is available from the EU, with matching 20-30% industry contributions. Separate funding lines are available for Organics Sector and EU Marine funds. (See Rev 2020 with Other Industry Income and EU (Promo, School Scheme & other Receipts).

In 2019, a budget of € 300,000 was allocated to Bord Bia in respect of their Organic Marketing Plan. It is important to note that these monies are additional to the Grant in Aid given by the Department of Agriculture, Food and Marine to Bord Bia.

- **How many people are employed by Bord Bia? Are BB QA inspections conducted by employees of Bord Bia or DAFM staff?**

There are currently 146 persons employed by Bord Bia. Pls see attached extract from Rev 2020 (attached). Last line. (Estimate 2020 doc).

Bord Bia on site/ on farm audits under the Quality Assurance Scheme(s) are carried out by authorised, independent, contracted auditors who are aligned / contracted with the Inspection Bodies who successfully competed for and were awarded (via Public Procurement) the tender for such services, under the overall direction of INAB and the Certification Committee to ensure that the Quality and Integrity of the Standard is maintained. The Quality & Sustainability Division together with the QA Board of Bord Bia & its Independent Scheme advisory bodies oversee the QAS schemes.

12. DECISION MAKING

- **What Memorandums to Government were brought to Cabinet by the Minister for Agriculture, Food and the Marine in the term of the last Government (i.e. from 2016 onwards)? Can a list of these Memorandums, with full titles, be supplied to negotiating parties?**

The Department is not in a position to provide such data.

- **What senior officials in DAFM have responsibility for progressing climate action in the Department? How many officials, in total, work in areas relating to the promotion of climate action, within the Department? Are any officials seconded to the Department from the Department of Communications, Climate Action and the Environment?**

The Environmental Directorate is led by the Chief Inspector of the Department, Mr Bill Callanan, and is supported by Head of Climate Change and Bioenergy Policy Division, Ms. Edwina Love, and Head of Nitrates, Biodiversity and Engineering by Mr. Jack Nolan.

The total staff complement within the Climate Change and Bioenergy Policy Division is 12, all focussed in the promotion of climate action – but as climate action is a cross-cutting issue a wide range of staff across the department are involved with promotion of climate action, ranging from research, communications to veterinary expertise. The CCBPD works very closely with the Nitrates, Biodiversity and Engineering Division in progressing the climate action agenda.

- **What senior officials in DAFM have responsibility for progressing action on biodiversity in the Department? How many officials, in total, work in areas relating to the promotion of biodiversity, within the Department? Are any officials seconded to the Department from other related departments (e.g. Climate, Heritage, etc)**

Nitrates, Biodiversity & Engineering Division comprises of a total staff complement of 22 officials. The function of NBE Division is strategic input to the development of sustainable agriculture and rural development through the implementation of legislation relating to Nitrates, Environmental Impact Assessment and the provision of specialist and technical expertise to effect the adoption of appropriate policy, legislation and programmes relating to soil, water, biodiversity and air and a safer farming environment.

There are no officials seconded to the Department of Communications, Climate Action and the Environment, however there are a number of officials currently seconded to the EU Commission including 2 to DG Environment.

(The above does not include those operationally involved in both climate and biodiversity and which are spread across areas such as scheme implementation, forestry, controls etc)

- **Presumably, high-level briefs summarising the work of each unit/section/division in DAFM are supplied to the Secretary General or Minister on a semi-regular basis. Can the most recent of these high-level briefs be supplied, to facilitate the work of negotiating parties?**

The Department publishes on its website, comprehensive briefing material across all divisional work areas as provided to an incoming Minister and will do so again. Previous briefing is available on DAFM website.

DAFM & DCHG Response to Deputy Duffy query re Carbon Sequestration in Bogs 01/05/20 [GP]

Response to query from Francis Noel Duffy

This response deals with two broad categories of land.

Drained Carbon Rich Soils Used for Agriculture

Firstly, it is estimated that there are approximately 300,000 ha of drained carbon rich soils used for agriculture. This land is predominantly located on cutover area on the periphery of raised bogs in the midlands, with the majority used for grazing. Reduced management intensity (rewetting) of such land would keep the organic matter in the soil consistently moist, to limit oxidation and lower CO₂ emissions. The prevention of emissions is the primary objective in the first instance followed by sequestration.

Further research is required to monitor and validate GHG emission fluxes on these drained organic soils. However, the Teagasc Marginal Abatement Cost Curve estimates that rewetting 40,000 ha of organic grassland soils would reduce emissions by 440,000 tons of CO₂. This is equivalent to 11 tons CO₂ per ha. Reduced management intensity of this 40,000 ha is among the actions provided for in the Climate Action Plan 2019. This action will be needed if Ireland is to avail of the credit of 26.8 Mt afforded to it by the EU for land use, land use change and forestry, when calculating Ireland's share of EU GHG emissions reductions in the period to 2030.

Teagasc's calculations use Tier 1 values from the Intergovernmental Panel on Climate Change. They include direct CO₂ emissions, offsite CO₂ emissions from Dissolved Organic Carbon (DOC) in drainage water, CH₄ emissions from both soils and open drainage ditches, as well as direct N₂O emissions from soils. They subtracted the CH₄ emissions associated with re-wetting.

Active Raised Bog

NPWS suggest that in a best-case scenario, 1,000 Ha of restored active raised bog would sequester c. 1,850 tonnes of CO₂ per year (-1.85t CO₂/Ha/yr). If this active bog was restored from a very degraded condition, then the reductions of CO₂ emissions would be in the order of 6,000 tonnes per year (6t CO₂/Ha/yr).

Thus, in a best-case scenario this is a cumulative saving of c. 7,850 tonnes of CO₂ per year over each 1000 ha. However, due to variability in site conditions (such as topography, hydrology etc), significant management works would be required to reach the maximum GHG reduction and carbon sequestration potential across the full spectrum of designated sites (c.27,000 ha).

Nevertheless, it is likely that restoration efforts to achieve optimum savings in GHG emissions will be possible across significant areas of the circa 40,000 ha of commercially exploited Bord na Móna peat fields.

It is important to note that the Teagasc and NPWS figures are not directly comparable, as we understand that NPWS do not include DOC in their calculations. This is a GHG emission from organic soils through the loss of organic carbon dissolved in water. It is thought that the magnitude of this loss is as high as the gaseous losses of CO₂ referred to above, particularly from peat extraction sites. Whilst research is ongoing on this issue, management would significantly reduce this form of GHG loss.

In addition, the estimated sequestration figure of -1.85t CO₂/Ha/yr from NPWS assessments may take up to 20 years to fully establish after restoration has been carried out.

These removal figures are estimations with ongoing research and measurement required to validate and verify carbon removal.

Cost

The costs of measures such as those detailed here is difficult to calculate with precision. In the interests of providing some indicative comparators, however, the following might be useful:

- NPWS suggest a potential once off cost of €2,000 per ha, based on its current Irish Raised Bog LIFE project, to restore protected raised bog. This would cover restoration works, resources, once-off compensation costs and voluntary land purchases.
- No detailed costings have been undertaken by DAFM on the rewetting of land currently used for agriculture. Incentives would be required however, potentially with support levels similar to those under current GLAS actions such as Low Input Permanent Pasture or Traditional Hay Meadows. While such costs could potentially be covered within a reconfigured GLAS or equivalent scheme in the future, payments may need be very long term or indefinite, as it is unlikely that a farmer would keep potentially more productive land wet if not compensated to do so.

There would also be an additional monitoring, reporting and verification cost annually to monitor and verify the land use changes and further improve the reliability of figures.

Responses to Questions from GP SF Talks 05/03/20 [GP SF]

D/AFM

Q: What other income streams might be utilised for sustainable farming supports, if shortfall in CAP funding?

CAP is the key source of funding for supports for farming communities.

Under the new proposed CAP, Member States will draw up CAP Strategic Plans that will set out all interventions planned for the farming sector. These plans must be approved by the Commission. Under the rules of the CAP, Pillar I funding (EAGF) – direct payments – may not be topped up by national governments.

However, Pillar II funding (EAFRD eg measures such as Glas/Tams) is co-financed with national funding. Currently the overall rate of co-financing is 53% to be provided by EU funds. Under the new CAP proposal, the EU rate of co-financing is proposed to be reduced to 43% so additional national funds would be required for drawdown.

There are different co-financing rates for different types of measures, with higher rates for certain measures eg Leader. While a lot depends on the make-up of the Pillar II elements,

Member States will have potential to add further national funding to the Rural Development Measures, although there are overall limits on the amount of national funding that can be added.

There are detailed State Aid regulations governing the provision of national support for agriculture. It is expected that any measures approved under the new CAP Regulations will be in line with State Aid Guidelines. If a Member State wishes to have a national scheme operating outside the CAP Strategic Plan state aid approval must be obtained from the Commission. National aid which distorts competition is prohibited.

Outside of the CAP there is no equivalent source of EU funding that can be sourced for the provision of broadly based on-farm support. There may be some potential under the EU Life programme which supports environments and nature conservation projects. However, this is based on applications for funding to support particular projects. It is a challenging application process and funding is not guaranteed. Information on the Just Transition Fund would indicate that it is intended for support for fossil fuel industries in transition and will not be available for agriculture.

The Department's forestry programme provides a potentially significant complementary source of income for farmers, and there may be opportunities for enterprise diversification in areas such as agri tourism or alternative crops in coasts areas.

On average, CAP comprises 74% of family farm income in Ireland, rising to significantly more than 100% in some sectors. Cuts in CAP payments on such farms could not readily be replaced with other sources of income.

Q: If target use of nitrogen (20%-30%-50% less) increased, what would be the impact on agriculture?

Reduction in Total Fertiliser Usage through increased Nitrogen Use Efficiency (NUE):

2018/19 DAFM sales data shows that 367,364 tonnes of elemental N was purchased by Irish farmers.

National Farm Survey data indicates that circa 45-50% of total chemical N is used on Dairy farms.

- If non-dairy farmers increased NUE from 25% to 40 % then this would suggest a decline in N fertiliser usage of 33k tonnes
- If dairy farmers increased NUE from 25% to 40 % then this would suggest a decline in N fertiliser usage of 25k tonnes
- This would give a combined decrease of 58k tonnes of N fertiliser (approx. -15% on 2019 levels)

Current EPA projections estimate that a 10% reduction in fertiliser (ie ~30,000t) provide a ~ 191,000t (~0.2mt) CO₂eq reduction. This equates to <1% of total agricultural GHG emissions.

For comparison the 16.67m cubic meters of bovine slurry currently produced, at 40% availability contains the equivalent of 30,000t chemical N.

Therefore, improving nitrogen use efficiency from average of 25% to target of 40% could reduce absolute fertiliser use by 15% and GHG emissions by <2%.

Loss of productivity

250kg N/ ha grows approx. 16t DM/ha allowing stocking rate of approx. 2.9LU/ha

Reducing to 150kg N/ha (-40%) is likely to constrain grass yield to 14t DM (-12.5%) and associate stocking to approx. 2.4LU (-17%) so minus 15% on average reduction to productivity from a 40% reduction in fertiliser.

Summary

It would appear that increased nitrogen use efficiency might allow a reduction in fertiliser usage, potentially up to 15%, with limited impact on productivity. However increasing towards a 40% reduction could constrain productivity by 15%. This would have significant consequences for farm profitability either through increased land demand and or reductions to herd size.

There is also a risk that reduced domestic feed sources could be replaced by imported feeding stuff.

Q: What is known about land available for afforestation?

The COFORD council appointed by the Minister of State with responsibilities for forestry has carried out a number of studies on quantifying lands available for afforestation. Teagasc have also carried out a number of behavioural studies on what makes farmers decide to carry out forestry.

A detailed desk top study carried out in 2016 by COFORD identified land which is technically available for afforestation i.e. excluding water bodies, urban areas and existing forests. These areas are detailed in the table below. Although a total of 5.5 million hectares in Ireland is technically “plantable”, significant areas are used for a wide range of agricultural activities and will never be planted. The report also identifies areas with limited agricultural use and areas not farmed and these areas have potential for afforestation. The Government has set a target of increasing the existing national level of forest cover from 11% to 18% this century. In order to achieve this target upwards of 500,000 ha needs to be planted.

The COFORD studies and work carried out by Teagasc also identifies a number of barriers which influence a farmer’s decision to plant which include;

- The range of agri-environment schemes available
- Strong affinity with land and farming
- Negative feedback from diseases such as ash die-back, storm events and level of support funding
- Duration of premium i.e. 15 years
- CAP post-2020 and the publicised need to continue to ‘farm actively’
- Current negative narrative in relation to certain types of afforestation, appeals and objections
- Permanent land use change when agricultural land is converted to forestry

Questions arising from discussions between the GP FF 05/03/20 **[GP FF]**

D/AFM

Q: What would rich forestry and associated enhanced biodiversity bring in terms of Ireland's competitive advantage?

Environmental sustainability is an important factor in the purchasing decisions of domestic and international purchasers of raw materials and finished products from the Irish Agri Food Sector.

Bord Bia's Origin Green Programme is designed to build a market profile for Irish food based on measurable environmental credentials and activity, both at farm and industry level. Quality Assurance audits currently include questions on biodiversity, including forestry planting and hedgerow planting /removal. The criteria for this programme are reviewed from time to time, in by technical advisory committees that include representatives of relevant state agencies, industry and farm bodies.

In addition, the Department supports investment in biodiversity through a range of initiatives such as GLAS, the Environmental Innovation Programme, and a variety of forestry initiatives. DAFM provide a variety of schemes that incentivise the planting of a wide range of species. It would be possible to examine the potential for linking these or any other programmes with Origin Green.

In relation to forestry, the experience has been that a significant financial incentive is required to encourage engagement by farmers. The market incentive alone may not be sufficient to encourage planting. Afforestation has the potential to improve farm viability in some sectors.

The table below illustrates some of the afforestation options available to farmers at present. A decision to plant broadleaves will depend on the quality of the land being proposed. The more fertile the land the more species that can be considered. Usually marginal lands for agricultural may not have capacity to grow a wide range of tree species due poorer fertility and/or exposure.

Example 1:

A farmer who plants 10 ha of oak will receive a grant of €62,200 to cover 100% of the costs associated with planting the site e.g. costs of fencing, purchasing trees, planting the trees and weed control for up to 4 years. In addition a farmer will receive for a 10 ha plantation an annual premium of €6,600 for 15 years tax free. If the woodland is a native woodland the land owner through the Woodland Environment Fund may also qualify for a one off payment of €1,000 per hectare i.e. €10,000 for 10 ha.

Woodland Type	Area (ha)	Grant (€)	Premium (€) per Year	Woodland Environment Fund (€)
Oak	10	62,200	6,600	10,000

Example 2:

A farmer may also decide to have a mix of broadleaves and coniferous species to improve the economic returns from their investment. Any mix is possible depending on the site conditions and the rates are outlined in the table “*New Grants and Premium Rates 2018*”. For example if a landowner plants the minimum 15% broadleaf requirement and 85% conifers they would be eligible for the following amounts outlined in the table below

Woodland Type	Area (ha)	Grant (€)	Premium (€) per Year
Oak	1.5	9,330.00	990
Sitka spruce/broadleaves (GPC3)	8.5	32,427.50	4,420
Total	10	41,757.50	5,410

NEW GRANT & PREMIUM RATES AS OF FEBRUARY 2018

New grant and premium rates

GPC	1 st Grant Ha	2 nd Grant Ha	Additional fencing Allocation (IS436) 140m/Ha	Total Grant Available Ha
GPC 1 – Unenclosed	€1,605	€535	€600	€2,740
GPC 2 – Sitka spruce / Lodgepole pine	€2,330	€775	€600	€3,705
GPC 3 – 10% Diverse Conifer e.g. Sitka spruce and 10% broadleaves	€2,410	€805	€600	€3,815
GPC 4 – Diverse Conifer e.g., Scots pine, Douglas Fir	€2,785	€925	€600	€4,310
GPC 5 – Broadleaf e.g. sycamore	€3,960	€1,320	€600	€5,880
GPC 6 – Oak	€4,215	€1,405	€600	€6,220
GPC 7 – Beech	€4,215	€1,405	€600	€6,220
GPC 8 – Alder and Birch	€2,695	€900	€600	€4,195
GPC 9 – Native Woodland Establishment (oak-birch-holly-hazel)	€4,215	€1,405	€600	€6,220
GPC 10 – Native Woodland Establishment (alder-oak woodland)	€3,960	€1,320	€600	€5,880
GPC 11 – Agro-forestry	€4,215	€1,405	€600	€6,220
GPC 12 – Forestry-for-Fibre	€2,410	€805	€600	€3,815

GPC	Annual Premium Rate <10ha	Annual Premium Rate >10ha	Premium Duration (years)
GPC 1 – Unenclosed	€185	€190	15
GPC 2 – Sitka spruce / Lodgepole pine	€440	€450	15
GPC 3 – 10% Diverse Conifer e.g. Sitka spruce and 10% broadleaves	€510	€520	15
GPC 4 – Diverse Conifer e.g., Scots pine, Douglas Fir	€590	€600	15
GPC 5 – Broadleaf e.g. sycamore	€605	€620	15
GPC 6 – Oak	€645	€660	15
GPC 7 – Beech	€645	€660	15
GPC 8 – Alder and Birch	€605	€620	15
GPC 9 – Native Woodland Establishment (oak-birch-holly-hazel)	€665	€680	15
GPC 10 – Native Woodland Establishment (alder-oak woodland)	€665	€680	15
GPC 11 – Agro-forestry	€645	€660	5
GPC 12 – Forestry-for-Fibre	€510	€520	15

DAFM recognises that it is important to plant a wide range of species and insist that all sites have at least 15% broadleaves. This ensures that a number of species are planted and the mix of species provides more resilient forests while encouraging and maintaining biodiversity.

DAFM have also provided an additional scheme called the Woodland Environment Fund (WEF) which partners businesses with landowners who plant native woodland. Currently businesses provide €1000 per hectare as a one off payment and can be used by businesses to demonstrate their corporate social responsibility. The scheme has been very successful since it was launched and has helped in increasing the uptake by farmers in planting native woodlands

Q: What would 20-30-40% less nitrogen mean for Irish farming? What would be economic, emissions/environmental and related benefits and impacts?

Reduction in Total Fertiliser Usage through increased Nitrogen Use Efficiency (NUE):

2018/19 DAFM sales data shows that 367,364 tonnes of elemental N was purchased by Irish farmers.

National Farm Survey data indicates that circa 45-50% of total chemical N is used on Dairy farms.

- If non-dairy farmers increased NUE from 25% to 40 % then this would suggest a decline in N fertilise usage of 33k tonnes
- If dairy farmers increased NUE from 25% to 40 % then this would suggest a decline in N fertilise usage of 25k tonnes
- This would give a combined decrease of 58k tonnes of N fertiliser (approx. -15% on 2019 levels)

Current EPA projections estimate that a 10% reduction in fertiliser (ie ~30,000t) provide a ~ 191,000t (~0.2mt) CO₂eq reduction. This equates to <1% of total agricultural GHG emissions.

For comparison the 16.67m cubic meters of bovine slurry currently produced, at 40% availability contains the equivalent of 30,000t chemical N.

Therefore, improving nitrogen use efficiency from average of 25% to target of 40% could reduce absolute fertiliser use by 15% and GHG emissions by <2%.

Loss of productivity

250kg N/ ha grows approx. 16t DM/ha allowing stocking rate of approx. 2.9LU/ha
Reducing to 150kg N/ha (-40%) is likely to constrain grass yield to 14t DM (-12.5%) and associate stocking to approx. 2.4LU (-17%) so minus 15% on average reduction to productivity from a 40% reduction in fertiliser.

Summary

It would appear that increased nitrogen use efficiency might allow a reduction in fertiliser usage, potentially up to 15%, with limited impact on productivity. However increasing towards a 40% reduction could constrain productivity by 15%. This would have significant consequences for farm profitability either through increased land demand and or reductions to herd size.

There is also a risk that reduced domestic feed sources could be replaced by imported feedingstuff .