

DÁIL ÉIREANN

AN COMHCHOISTE UM CHOMHSHAOL AGUS GHNÍOMHÚ AR SON NA HAERÁIDE

JOINT COMMITTEE ON ENVIRONMENT AND CLIMATE ACTION

Dé Máirt, 2 Samhain 2021

Tuesday, 2 November 2021

Tháinig an Comhchoiste le chéile ag 3 p.m.

The Joint Committee met at 3 p.m.

Comhaltaí a bhí i láthair/Members present:

Teachtaí Dála/Deputies	Seanadóirí/Senators
Richard Bruton,	Lynn Boylan,
Réada Cronin,	Timmy Dooley,
Cormac Devlin,	Alice-Mary Higgins,
Alan Farrell,	John McGahon,
Darren O'Rourke,	Pauline O'Reilly.
Bríd Smith,	
Jennifer Whitmore.	

I láthair/In attendance: Senators Garret Ahearn and Róisín Garvey.

Teachta/Deputy Brian Leddin sa Chathaoir/in the Chair.

Reduction of Carbon Emissions of 51% by 2030: Discussion (Resumed)

Chairman: I welcome Dr. Brendan Dunford, programme manager with the Burrenbeo Trust, and Dr. James Moran from Galway Mayo Institute of Technology, GMIT, both of whom are with us in the committee room. Joining us online are Mr. Con Traas of the Apple Farm and Mr. Donal Sheehan of Biodiversity Regeneration in a Dairying Environment, known as the BRIDE Project. On behalf of the committee, I welcome the witnesses to the meeting and thank them for appearing before us to share their expertise.

I remind witnesses of the long-standing parliamentary practice that they should not criticise or make charges against any person or entity by name or in such a way as to make him, her or it identifiable or otherwise engage in speech that might be regarded as damaging to the good name of the person or entity. Therefore, if their statements are potentially defamatory in relation to an identifiable person or entity, they will be directed to discontinue their remarks. It is imperative that they comply with any such direction. For witnesses who are attending remotely outside the Leinster House campus, there are some limitations to parliamentary privilege and, as such, they may not benefit from the same level of immunity from legal proceedings as a witness who is physically present does.

Members are reminded of the long-standing parliamentary practice to the effect that they should not comment on, criticise or make charges against a person outside the Houses or an official either by name or in such a way as to make him or her identifiable. I also remind members that they are only allowed to participate in this meeting if they are physically located on the Leinster House complex. In this regard, I ask all members, prior to making their contributions, to confirm that they are on the grounds of the Leinster House campus.

I now invite Dr. Dunford to make his opening statement.

Dr. Brendan Dunford: It is a pleasure to be here and I thank the committee for the opportunity to address it today. I hope my contribution will be of relevance to the committee's urgent and important work. When I was thinking about how best to contribute to that work, I felt that the experience we have in County Clare of working with farmers, scientists and others to address environmental challenges in the Burren for over two decades might provide both learning and inspiration.

I will relate a short story first of all. In the late 1990s, the relationship between farming and environmental interests in the Burren was very broken, much as it appears to be today at a national level. The main source of frustration at the time was the introduction of special areas of conservation, SAC, designations which farmers felt severely restricted their freedom to farm and to earn a living. These designations were intended to curb damaging activities to the greatest jewel in Ireland's crown, the Burren, but how could this be done without the support and engagement of those who owned the land, the livestock and the knowledge needed to look after it? The first, small step to resolving this dilemma, and a very important one, was taken by local farm leaders, in particular Michael Davern, who felt that, with these new environmental challenges, there also had to be opportunities. "Better to light a candle than curse the dark" was the strategy. This brave local leadership, and there is a great example of it here today in Donal Sheehan, quickly unlocked the support of research institutions such as UCD, Teagasc and the National Parks and Wildlife Service, and led to the EU-funded BurrenLIFE project which went on to co-create, with farmers, a blueprint for sustainable farming in the region. This research and strong local support in turn unlocked CAP funding via the Department of Agriculture, Food

and the Marine to enable the roll-out of the Burren programme across 23,000 ha of land in the region, and this programme continues today.

This journey, of which I have been privileged to be part, along with many exceptional colleagues, including those with me here today, is still a work in progress, as it must remain. However, much has been achieved. For example, an external evaluation in 2020 found that the Burren programme had generated €33 million worth of landscape and biodiversity improvements, a €23 million boost to the local economy and an additional €9.4 million in payments to local farmers. Therefore, sustainable management can pay and can deliver for the local community.

The question is what we can learn from this case study in addressing Ireland's current and deeply interwoven climate and biodiversity emergencies. The answer is "quite a lot", and I would like to distil these learnings under three headings: the pocket, the head and the heart. With regard to the pocket, we must understand farming is a business but in most cases the farmer is only paid for one of the ecosystem services generated - food – and often at the expense of others, such as biodiversity, water quality and carbon, for which there is a demand but not a market. In the Burren, we addressed this by developing a simple scorecard to capture these services at field level on a scale of one to ten, and linking these scores to payments, thereby putting a price on biodiversity and water quality. Farmers quickly responded, sometimes very innovatively, to this clear incentive, and they were also able to avail of additional capital funding to address particular challenges on their farms, such as protecting vulnerable springs or removing invasive scrub, which further improved their field scores and payments.

Through this payment for performance system, farmers felt respected, they had more freedom to farm and to innovate and payments were seen as hard earned but fair, unlike the standard compensation and penalty-based approaches. For the taxpayer, the system offers a guarantee that if a farmer delivers less, he or she gets paid less. For the policymaker, the system generates real-time data on programme impact, which in the Burren's case has been an annual improvement in the region's environmental health over the past decade, bucking national trends.

There is no reason such results-based incentives cannot be mainstreamed. The science is there in terms of scorecards for a variety of habitats, species and environmental priorities, including carbon sequestration. Thanks to this work, much of it initiated and led by Dr. James Moran, Ireland is considered to be a European leader in results-based payments. It is vital the new Common Agricultural Policy, CAP, strategic plan builds meaningfully on this reputation and this opportunity.

With regard to the head, to farm for nature and climate, farmers need better research, advice and support, just as they receive if farming beef, dairy or tillage. That this support is provided at a local level is critical because farmers have such a strong sense of the local but also because ecosystem services are very place specific. In the case of the Burren programme, having a local support office in Carran has built a strong sense of pride and ownership among farmers and relieved them of much of the bureaucratic burden that often plagues such schemes.

The third piece of the jigsaw, which is often overlooked, is the heart. If any of us are passionate about what we do, we will do it better, and farmers are no different. We urgently need to reimagine the role of farmers as first responders to our climate and biodiversity emergencies. It is very important we reimagine what farming is about and what it can deliver for society. We need to encourage farmers to embrace this role wholeheartedly, which is quite a challenge. In the Burren, a local charity, the Burrenbeo Trust, has run stewardship courses in local schools from which several thousand Burren children, the future guardians of the landscape, have grad-

uated. Monthly walks and talks, often led by local farmers, and a Winterage festival and school on sustainable farming are among the many initiatives created by Burrenbeo to empower farmers and build bridges of understanding between farmers and the wider public.

In 2018, with Bord Bia support, Burrenbeo established the Farming for Nature Ambassadors initiative, identifying exemplary farmers across Ireland and sharing their stories through videos, farm walks and webinars. These farmers, among them Donal Sheehan, are reframing the negative narrative around farming and the Irish environment, reimagining the role of the farmer and sharing invaluable knowledge and inspiration among their peers. I congratulate Norman and Michael Dunne, who are this year's public vote winners of the Farming for Nature Ambassadors award. They are amazing tillage farmers from County Kildare.

If Irish farmers can take more ownership of the environmental agenda and be supported and rewarded, as Burren farmers have been, then we can have real hope of Ireland becoming the green heart of the European Green Deal and of creating a brighter future for our rural people and places.

Dr. James Moran: I thank the committee for the invitation to present this evidence statement today at a time when the requirement for urgent climate action is abundantly clear. I work as a lecturer in biology and ecology in the department of natural resources and the environment at Galway-Mayo Institute of Technology, where I lead the agro-ecology and rural development, ARD, research group. The group concentrates its work on sustainable agricultural and land use systems, with a particular focus on the Common Agricultural Policy and improving agri-environment policy and practice. In my presentation today, I wish to concentrate on policy advice for a more integrated approach to land use policy and practice, cognisant of a range of national and international commitment and societal needs. I plan to focus in particular on the interactions between agriculture and the environment. It is clear that climate change and biodiversity decline are interconnected challenges which cannot be addressed without building a sustainable food system. We need to have a more integrated land use policy and practice that focuses on optimising land use and making the best use of our land resources to meet our commitments and societal needs.

We are not in a good place as regards the current state or direction of travel with regards to the interactions between land use and the environment. We are not at as bad a starting point as some countries but that does not mean we are in a good place. Based on national monitoring data, we see 85% of our EU protected habitats in unfavourable or inadequate condition, with 46% of these exhibiting a declining trend, while water quality is deteriorating, with pristine water bodies declining from 500 to 20 in just 30 years. Some 30% of the area of semi-natural grassland monitored has been lost in the past ten to 15 years, and total agricultural greenhouse gas emissions per hectare continue to rise. There is some positive news at local level, as exemplified by work in the Burren and other areas, where locally adapted pilot projects focused on results-based payments for biodiversity and other ecosystem services, such as flood storage, carbon sequestration and improved water quality, have proven successful through enhanced peatland, grassland and woodland management.

The threats have been identified, the solutions have been developed at local level and, now, the challenge is to scale up the implementation of these solutions. In transitioning to modern land use strategies to meet societal needs, we must avoid going from production tunnel vision to an emissions tunnel vision approach. The Government declared a biodiversity and climate emergency in May 2019, an important step recognising that climate change and biodiversity loss are interrelated problems threatening food security and the sustainability of our agricultural

systems. We need to deal with these in an integrated manner. We must maximize the co-benefits of biodiversity and climate actions and minimise any trade-offs. The multiple challenges we face to build a resilient food system during climate and biodiversity crises seem unsurmountable to the individual and to administrations, leading to the prevailing situation of inertia and inaction we see today. Individual farmers feel powerless in face of increased globalisation, consolidation of the agri-industry, complexity of the policy framework and poor market returns. We need to create a policy framework that is an enabling environment for positive action.

We live in a country with a diverse mix of landscapes, characterised by differences in geology, topography, soils, climatic variation and land cover, with a wide range in land use capacity. One size certainly does not fit all, and different land types are advantaged to provide a set of particular services, for example, high quantities of food and fibre, carbon storage, flood alleviation, space for nature or amenity and recreational value. We need to create a system where it is possible for different areas to capitalise on their natural advantages.

The development of the Common Agricultural Policy strategic plan offers an immediate opportunity for positive change. Recent work detailed in this evidence submission highlights CAP as an opportunity to deliver high-quality food outcomes and enhance farm livelihoods by mitigating our climate and biodiversity crises. Biodiversity underpins our food supply, but it is undervalued in our agriculture production system and policy framework.

Over the past ten years, there has been significant work in Ireland to test and trial locally adapted, results-orientated solutions. We have designed and implemented integrated agri-environmental results-based payment schemes for a range of biodiversity targets and associated ecosystem services. That is essentially putting a value on the high-quality habitat areas of the farm that are providing pollination services and carbon storage and contributing to water quality and flood alleviation. Over the past two years, we have concentrated on the design of the CAP green architecture and how we can build on the success of various pilot programmes, including the Burren and European innovation partnerships, EIPs, models.

We propose an integrated framework across Pillars 1 and 2 of the CAP with three tiers involving increasing environmental ambition and delivery, moving from baseline conditionality in tier 1 to eco-schemes in tier 2 and agri-environmental climate measures in tier 3. We suggested the tier 3 agri-environment climate measures be divided into two broad streams, one targeted at medium to intensive farmland landscapes and the other concentrated on extensive semi-natural farmland areas dominated by semi-natural vegetation. This is to ensure more effective, targeted action and to build on the lessons from the EIPs. In recent months, the published draft interventions for the CAP strategic plan highlight plans to integrate results-based payments and a locally adapted approach into the design of agri-environmental schemes.

The solutions to many of the land-use challenges we see today lie in better targeting of land use to match the capacity of the land to produce multiple services to meet societal needs. We need to value people, nature and food within an integrated land-use strategy. As details have emerged in recent weeks, there are some worrying trends in terms of the weakening of the environmental ambition of Ireland's CAP strategic plan. We must ensure coherence and consistency across all aspects of the interventions, building on excellent examples of successful programmes to ensure we deliver on climate, biodiversity and water targets. Co-operation and a farmer-centred model, together with an evidence-based approach, have been key elements in the success of various pilot programmes and must be maintained throughout the development and implementation of the CAP strategic plan.

In the recent announcement of the 2023 to 2027 CAP budget, we have seen proposals to cap agri-environmental funding per farm at €10,000, with some farms capped at €7,000. This is problematic as many of the farms delivering the highest environmental performance under the current CAP are receiving much higher agri-environmental supports currently. An important aspect of the payment structures of locally adapted, results-based programmes to date, including the Burren programme and hen harrier and pearl mussel projects, is that there is no maximum payment ceiling and overall budget management is facilitated by degressive payment bands. This is critical to ensuring farmers can continue to improve their environmental outcomes. This is a key feature of results-based agri-environmental programmes to date, which are now proposed as the delivery model for agri-environmental schemes in the CAP strategic plan.

We have also seen a weakening of the environmental ambition in baseline conditionality, moving from 5% to 4% for non-productive areas and landscape features, and the inclusion of nitrogen fixation and catch crops to meet the 4% target. As a minimum, we need to align eco-schemes with targets in the agrifood strategy 2030 as detailed on page 10 of the submission document.

I ask members to ensure we have an environmentally ambitious CAP strategic plan that is coherent across the range of interventions. Given the extent of the challenges we face in the coming decade, if the CAP strategic plan from 2023 to 2027 does not provide the necessary supports to farmers and reward achievement of results, then we have no hope of achieving our 2030 targets.

Chairman: I thank Dr. Moran. I move to Mr. Traas, who joins us online from Tipperary.

Mr. Con Traas: My statement will be more specific than some of the general ones that are there so far. I was thinking about addressing reductions in emissions that might be realisable for orchard plantations and general horticultural considerations. I thank members of the committee for extending me the privilege of addressing them in the context of the potential contribution of the apple-growing sector and the contribution orchards can make to biodiversity.

I have been concerned about a changing climate for many years. I gave my first talk on it in 1990, while still a student in UCD, to a class of agricultural science students who were in the same class as I was. It did not feature in the course in those days, and I thought that needed addressing. Thirty years or more have passed since then and rather than words, actions are needed. Unfortunately, some of those might not be so easy to do as they would have been if we had started back then, and maybe not so popular.

I have a number of occupations and positions, which include being an apple grower, owner of a small company which manufactures beverages, chair of the Irish Apple Growers Association, lecturer in biology, horticulture, and plant physiology at the University of Limerick, and chair of the Tipperary Food Producers Network. My position in the University of Limerick allows me to spend time on research, which generally revolves around apple and fruit production and how to do that more sustainably.

I have come here to answer any questions members might have on the ability of apple orchards to sequester carbon and their potential contribution from a biodiversity aspect. I might also have knowledge in respect of the broader challenges facing the State, particularly the agriculture sector, in achieving targets, and the role that the horticulture sector can play in that. The horticulture sector has an annual output of about €500 million, making it the fourth largest sector after beef, dairy and pigs. While there are significant exports of mushrooms, imports of

fresh produce exceed domestic production by a factor of three. There are about 6,000 people employed directly in horticulture and another 10,000 in downstream activities. From an environmental and social sustainability perspective, as well as food security, we ought to be doing better.

The apple-growing sector in the Republic of Ireland is very small, with only about 5% of apples consumed being grown here, and extends to a little more than 500 ha in total. At the moment, there is an apple redevelopment group at work under the stewardship of Dermot Callaghan, head of horticulture at Teagasc, along with Bord Bia, the Department of agriculture, and the Irish Apple Growers Association. Our hope is that this group can set out a roadmap for the expansion of the apple-growing sector over the next decade, and that an outcome of this will be increased apple production, with the benefit of increased carbon sequestration due to the orchard plantations.

Figures calculated by Dr. Ken Byrne, a colleague of mine at the University of Limerick, show that apple orchards in Ireland sequester carbon at a rate of approximately 11 tonnes of CO₂ per hectare per year, which is broadly in line with figures reported in the literature for orchards in other countries and compares reasonably with the gold-standard carbon sequestering land use, which is forestry. The latter sector sequesters at a rate about 50% higher on good quality lands such as would typically be used for orchard production.

One of the attractive elements of apple production from a carbon sequestration perspective is that it requires good land, so where a new orchard is planted, it is probably on land that would otherwise be used for dairy or tillage. As well as the carbon sequestration achieved by orchards, there is a benefit in that land will probably be taken from a net emission sector, such as bovines or tillages. The latter sector is carbon-emitting, at least in the way it is conventionally practised. Therefore, a land-use change from dairy to orchards has a double benefit in reducing emissions and increasing sequestration.

Unfortunately, the potential for land-use change to apples in Ireland is limited. Apple orchards are highly productive. the addition of 1,000 ha would represent a significant change to the existing industry and is as much as could be expected in a free-market scenario, given that some people would always want apples that cannot be grown in Ireland and so on. Such a programme of 1,000 ha would lead to sequestration of 11,000 tonnes of CO₂ per annum. If this represented plantings that would otherwise support dairy, it would provide the double benefit I mentioned but it would still be small in the context of total agricultural emissions, which are about 1,000 times that figure.

Even though our contribution may be small, the apple-growing sector is eager to make that contribution. Growers feel fortunate to be producing the only food crop in Ireland that is simultaneously carbon-sequestering. Any policies implemented that support the sector to increase in size will result in less imports, rural job creation, improved biodiversity, and reduced greenhouse gas emissions.

Some things that will hopefully come up in conversation will be: a ban on below-cost selling; adequate resourcing of Teagasc for horticulture; and succession and encouraging young people into horticulture.

Chairman: I thank Mr. Traas. Down in Cork is Mr. Sheehan, who joins us online.

Mr. Donal Sheehan: I thank the Chair, as previous speakers did, for the privilege of speak-

ing to the committee today. I am here, first and foremost, as a dairy farmer and, second, as one of the people involved in one of the EIPs, namely, the biodiversity regeneration in a dairying environment, BRIDE, project. I am a dairy farmer, milking 72 spring calving dairy cows in Castlelyons, part of the Bride Valley area of north Cork. I will express some concerns I have with the direction our farming and food system is taking, and in particular that the road that we are now on as a result of the Food Harvest 2020 and Food Wise 2025 strategies is unsustainable.

As well as being a farmer I am also one of the people involved in the biodiversity regeneration in a dairying environment, BRIDE, project. This project is one of the many European innovation partnership projects, EIPs, scattered throughout the country, set up to provide templates and knowledge transfer for the wider agricultural community on different aspects of environmental and sustainable food production practices. It is funded by the Department of Agriculture, Food and the Marine and the EU.

The BRIDE project was initiated by two farmers and an ecologist who were frustrated by the way our farming system was damaging the environment while farmers themselves were being blamed by the public. There was a need to showcase a more positive image as well as improving biodiversity and water quality and reducing our carbon footprint. The system we are on rewards farmers for producing larger volumes of food, and more one produces, the more money is made. Consequently, there is no value put on the habitats on any farm that can deliver the environmental ecosystem services that can help to create a more sustainable food production model.

This is fundamentally what needs to change, as farmers are paid to produce food but they also need to be paid for managing the farmland habitats in a way that improves biodiversity, water quality and carbon sequestration. There is a need to give farmers a continuous signal that there is an indefinite financial value in maintaining and managing these vital habitats from generation to generation. The current model of getting a payment from agri-environmental schemes for a five-year term is not working as habitats, created from taxpayers' money through the scheme, can be put back into food production when the scheme is terminated. Habitats have very little legal protection so damaging or removing is a routine occurrence.

I will speak to the expansion model and my experience of it in an intensive farming area. The environment has played second fiddle to production and the volume of food produced over the past 50 years with a resultant deterioration in its quality. Since quotas were abolished in 2015 and even since preparations began for that in 2010, farmers have been pushed to produce more for the same money, with the result being damage to wildlife habitats, biodiversity and water quality. We are also struggling to reduce our carbon footprint and the public backlash that dairy farmers in particular are now getting is a direct result of the unsustainable food production system we use.

This same model has done much damage to rural Ireland, with small farmers coming under increasing pressure to stay afloat, with many of them going out of business. The media narrative often focuses on the "family farm", which sounds good but we need to define this family farm. It is taking an increasingly larger farm to sustain a family and most farms require one of the partners to work off farm. This puts more pressure on the farmer to get more work done and milk higher numbers of stock and so extra labour is needed, which is becoming more and more difficult to source. Once a labour unit is sourced, inevitably more cows are also sourced to pay for the labour and thus begins the treadmill on which dairy farmers now find themselves. This is the dairy expansion model, not the family farm model and certainly not the "viable" small farmer model.

The average herd size in the Glanbia area is now over 80 cows so under this figure would be classed as a small dairy farmer. Farmers in the less intensive farming areas of the country with smaller herd sizes again, supplying smaller co-operatives, are put at an unfair disadvantage when competing against such scale. In dairy farming, the milking platform, or the land area adjacent to the milking parlour, is the limiting factor to expansion, so to expand or increase production to stay viable, as price for milk to the farmer is more or less static over the years, farmers require more land. In my area, land rental costs can be up to and more than €300 per acre per annum. To buy this land would cost a minimum of €10,000 to €15,000 per acre and more if two farmers want it badly enough. So to increase herd size by 50 cows would require 50 extra acres, costing a minimum of €500,000. The smaller the scale, the smaller the chance of being able to get on this unsustainable ladder.

To give an example of what is happening on the ground with my own case, I have two tillage neighbours, one bloodstock neighbour, one suckler neighbour and two dairy farmer neighbours. For any of us to expand would mean buying an adjoining farm and putting them out of business. The only way for me or them to expand is to buy an adjoining farm. This is the model we are on and is leading to smaller farmers getting out, an ultimate decline in overall farmer numbers and ultimately a depleted rural community. This model is pitting farmers against farmers, dairy farmers against each other and against every other farm enterprise and as can be publicly seen, pitting farmers against environmentalists and the consumer.

Everyone is talking about the extra jobs that dairy expansion is giving but nobody is talking about the numbers of small farmers that cannot compete and are going out of business. Small farmers do not have the purchasing power that large-scale farming brings. For example, prices are cheaper when products are bought in large orders. Small farmers cannot compete when it comes to buying and renting land, as there needs to be a minimum land area on which a farmer can make a living; otherwise, we are on the road back to the landlord system. The minimum milk collection policy in my own area has now increased from 250 litres per collection to 400 litres per collection, and this is just another nail in the coffin of small milk producers. As this model is totally production-focused and with no incentive to look after biodiversity or any other ecosystem service, farmers are sent the signal to produce more and more to fuel the relentless drive for a commodity product that can be sourced cheaply. Inevitably more fertiliser is used, more sprays are used on any plant that is competition to the crop, wetlands are drained, hedgerows are removed, woodland and forestry are converted to grassland etc. This is all done legally, as habitats have very little protection, especially in intensive farming areas where most of the food is produced. There has been a continuous push on farmers to produce more for less, with a devastating impact on the environment.

The 10% “space for nature” is a concept that the BRIDE project adopts. A figure of 10% of the farmed area being prioritised for biodiversity is mentioned in the green deal, biodiversity strategy and food strategy 2030, but no timelines or guidelines have been given on how this will be achieved or where the money will come from. In practice this will mean some farmers may need to take land out of food production to attain the 10%. When land is taken out of agricultural production, it should be replaced with an environmental payment equivalent that incentivises the farmer on an ongoing and indefinite basis to deliver the ecosystem services that alternative land uses can provide such as clean water, flood prevention, more biodiversity, carbon sequestration etc. This payment should be results-based, as in the BRIDE project template, so that farmers can be incentivised to manage their land both for environmental benefits and food production.

The current Common Agricultural Policy, CAP, payment structure should be reformed to include an environmental payment to farmers for this 10%. This puts a value on the habitats and biodiversity that are being lost and sends a signal to the farmer that maintaining these habitats is important. It would be a payment from the taxpayer to the farmer for delivering ecosystem services at a time when we have a global climate and biodiversity crisis.

Ireland's agriculture is at a crossroads. We are going down the road of increased expansion and racing to the bottom of the barrel to be the most efficient food producers in the world but with the worst environmental record and a farming population that is tired and stressed in that race. Our future young farmers will have other more profitable and rewarding occupations to choose from with better work conditions if we do not make changes. Our credibility and the Origin Green credibility is under serious threat and we cannot any longer claim to be sustainable food producers while the public is well aware of the environmental problems that intensive farming is causing. Time has caught up on poor and lax environmental care over the years because of bad short-term policy. In recent discussions on the food strategy 2030 document, it has been suggested that "there needs to be give and take" but there has been too much take from the farmers and the environment over the past 20 years; both have been exploited and this needs to change.

Everyone is kicking the dairy cow numbers matter down the road but we cannot have our cake and eat it. At the high stocking rates of over 2.4 cows per hectare being encouraged, there will be high artificial nitrogen usage and very little space for nature. If artificial nitrogen use is curtailed, it would encourage farmers to utilise fertilisers and slurry more efficiently. Reducing nitrogen use would have a positive impact on our emissions and would not have the negative impact on grass production that we are told it would.

The BRIDE project has created a template to help farmers achieve a 10% "space for nature" certification entitled farming with nature, which is also an objective of the aforementioned strategies. This creates a minimum standard that rewards farmers who are looking after the environment. We have recently received further funding from the Department of Agriculture, Food and the Marine and the EU through the EIP funding initiative, where we were given over €100,000 to create an app that will measure the quantity and quality of biodiversity on any farm. This will be the basis of a "farming with nature" standard that any farm in Ireland can have and should be the basis of any food we export abroad. We are currently liaising with one of the meat processors and it will trial a "farming with nature" certified beef range with a payment being returned to the farmer for this certification.

There is a diagram in the documentation illustrating the certification we would give to farmers. It can be seen from it that farmers are paid for the quantity of habitats that they have on their farms. In other words, it can be 2, 3, 4 or 5 ha and up to 40% or 50%. The figure on the certificate giving the additional biodiversity managed area, BMA, is probably the most important one. In this example, and this is a real farm, the farmer took out 0.066 ha from his 2019 baseline BMA. He had 3.948 ha in what we will call space for nature, and then he took out 0.066 ha from that total. That figure reflects the experience of the 42 farmers we have in the BRIDE Project. Few hectares are being taken out and that is because once the BRIDE Project is finished, those farmers know that if the land is gone, then it is gone from food production. The BRIDE Project finishes in 2023 and they will have no payment for it. We can see that farmers right across the board are slow to take land out of food production for obvious reasons. It is the source of their income, and that is why there is a need to give them a continuous income. Farmers are not looking to be millionaires, but an incentive must be provided to look after these

habitats which are delivering these ecosystem services.

The next diagram is an example of farming with nature certification. With the app that I mentioned we are able to go around to any farm in Ireland, map the habitats on the farm and rate them on a scale. We also score the quality of those habitats. The 11B figure on the sample certification shows that the farmer has 11% space for nature on his farm and the quality of the habitats is B. The app can be used on a farm walk and we hope farmers will be able to do that.

To summarise, we must change from a model of production at lowest cost, where the processors and retailers are forcing farmers down a road they do not wish to go, to a model of regenerative farming, where the farmer, the soil and the quality of the food produced will lead to a more sustainable food production system and, ultimately, a healthier consumer. This point should be noted.

We are at a crossroads in dairy farming. We can down the road of continuous expansion with farms getting ever larger but with the number of farmers becoming smaller and smaller, with all the consequences that would have for rural Ireland. We are trying to compete with the big dairy production countries of the world on scale, but we are losing out on the quality of food we produce, the quality of our water and the quality of our life and biodiversity. We must put a value on all these things so we can truly say we are sustainable food producers and proud of it.

Chairman: I thank Mr. Sheehan and all our witnesses for their detailed and informative opening statements. I ask the members to indicate now if they wish to ask questions of the witnesses. As this meeting is confined to a maximum of three hours, and just over two hours remain, I propose that each member be given two minutes to address their initial questions to the witnesses to ensure all members have an opportunity to contribute. We will go back for second, third and perhaps even a fourth round of questions if we have time. Is that agreed? Agreed. I call Senator Dooley.

Senator Timmy Dooley: I thank all the speakers for their informative presentations. This is a timely discussion. I hope it will be the beginning of a continuous engagement with the committee.

I will start at the end and work back. I thank Mr. Sheehan for his presentation. He is effectively saying what I have been saying for a long time. The reality though is that farmers have been compliant with public policy. There is little doubt that they followed the different incentives and schemes initiated by successive Governments and which were based around the promotion of and expected demand for produce and the consequent employment created for the State. Mr. Sheehan has rightly identified that as a race to the bottom. The only people who have benefited from this process have been the processors and retailers because they have a steady supply of cheap food.

Mr. Sheehan is also right in what he is advocating. Farmers must be paid for the work they do for the environment and in reducing carbon output. It is hard for farmers, however, to accept that at a remove until they see the extent of that support. They are on a sort of a hamster wheel in that they recognise that they must produce more food year-on-year to get an income that will allow them to raise and educate their families. Until the Government steps in and identifies the extent of the financial reward in this regard, I do not think many farmers will buy into this concept. That is a real requirement and I would like to hear Mr. Sheehan's views on this issue, including the extent of such a payment.

Farmers are also concerned when they see the potential for other countries and their evident failure to meet the various limits put in place. President Bolsonaro did not even attend the COP26 meeting this week. An agreement to end the rate of deforestation has been signed, but it does not apply until 2030. On the other hand, we are part of the Mercosur deal where Brazil has the opportunity to export cheaper beef into this country. Would Mr. Sheehan accept that there is an issue regarding international trade agreements in the context of getting farmers on board with schemes here? Will we also have to step up to the plate and identify the extent to which we are prepared to compensate farmers for the work they are doing on the environment?

I have known Mr. Dunford for a long time and the work he and the lads are doing on the Burren project is a model of excellence. He identified farmers, such as Michael Davern and others, who recognised the opportunities in this area at an early stage. I would welcome any further comments Mr. Dunford might have regarding how we might transpose that model which was initially concerned with relatively small family farms, where most of the people concerned were often not full-time farmers, to more commercially-orientated farms. Does he have any ideas on opportunities for the larger dairy farms to farm more in tandem with nature than what the market has demanded up to now?

Mr. Donal Sheehan: I do not agree with the Senator. Farmers are willing to make the required changes. We have had farm walks here for the last two months and we have been inundated. It is a chicken and egg situation. Farmers are waiting for payments but consumers are also waiting for a signal regarding whether we will make changes.

Regarding Brazil and China, I really do not care what they are doing because that is out of my control as a farmer. I am doing what I can and the bright farmers are all making huge improvements. I focus on what we can do here. That is a lesson we must all take on board. If we keep going on about what China, Brazil and all the other countries are not doing, we will never get anywhere. We are in a great position to be able to show leadership as farmers in Ireland and that is what we should be doing. We should forget about what everyone else is doing.

Senator Timmy Dooley: I was asking if Ireland, insofar as we can influence trade deals, should we be much stronger in our approach to rejecting deals that in some way seem to conflict with what we are doing here at home. In other words, should we be ensuring, from a national perspective, that we do not sign up to a Mercosur deal that allows for any amount of cheaper beef coming in here?

Mr. Donal Sheehan: I agree 100% with the Senator on that point. Equally, we must remember that we are importing large amounts of cereals. I use a large amount of cereals in dairy rations, and much of those cereals are coming from unsustainable sources in countries like Brazil. Yet there is no initiative for me to use grain from my neighbouring tillage farmers. That must happen. We are trying to start such an initiative in the BRIDE Project, where participating tillage farmers will be supplying dairy farmers who are also part of the project with native-grown cereals, instead of importing such feedstuffs from halfway across the world.

On the question of the payment, farmers were given a bad habit when we started paying for the environment. We had to do that because there was no other incentive to look after it. However, it has created a habit of perhaps not doing anything until we get paid. As farmers, we have to start making changes, especially as that applies to low-hanging fruit. For instance, we can cut our hedges differently from the way we used to. We should not use as much pesticide on field margins. The soft approach we should take is to do as much as we can until it affects our income. After that, it becomes an issue and I would not expect any farmer to lose money

by going green. However, there is a lot of low-hanging fruit where we can make changes. We need direction, guidance and advice.

Chairman: The questions about imports and carbon leakages are interesting and if any of our other guests want to address those questions, they should feel free. There was also a question about scaling up the Burrenbeo project.

Dr. Brendan Dunford: I will answer that question. Perhaps Dr. Moran will also have a comment to make. I thank the Deputy for his comment and support; it is much appreciated. He mentioned a hamster wheel and the wheel seems to be spinning faster all the time and becoming harder to get off, unfortunately, for many farmers. I do not like to use the word “compensate” because the whole approach to the Burren has been to reward and incentivise. “Compensate” can reflect what is wrong, in some ways, which is that we tend to look at the challenges and problems as opposed to the opportunities and the potential. The magic that started in the Burren was looking at a challenge and reinterpreting it as an opportunity. We need to do that at a national level. Anyone following the coverage of COP26 can see there are huge challenges but I keep thinking there are considerable opportunities, particularly for Irish farmers, to exploit and to be rewarded. There is an appetite in society to reward farmers for the right type of farming activity and increasingly, through the work I do with farmers in the Burren and nationally, I think there is an appetite among farmers on the ground to embrace this new opportunity and way of farming.

How do we do it? The Burren has received a lot of praise. We work with 300 or 400 farmers. It is a small project and not everybody is 100% on board so it is a work in progress. However, gradually over time people see what we are trying to achieve and the benefits for themselves, the generation to come, the local environment and community. They also see it as a way of respecting past generations of farmers. Slowly but surely, farmers are coming on board. The nice thing about our model is not just the money, because the reward is modest enough, it is the freedom to farm and the respect we afford farmers to get on with their jobs. We try to take the paperwork away from them and to invest resources in them so they can deliver for the Burren and for society. It is about scaling that at a national level. The criticism has been always that it is the Burren and involved Mr. Michael Davoren, Dr. Sharon Parr and a few other people like that. The reality is that the success of the Burren has been proven by projects such as the hen harrier project, the fresh water pearl mussel project and the biodiversity regeneration in a dairying environment, BRIDE, project in Cork. Those have shown that the basic ideas of rewarding outcomes, providing advice and support at a local level and encouraging and supporting farmers to take the step we all want them to take can be successful. Mr. Sheehan is doing a remarkable job in the intensive dairy sector, as was mentioned. The hen harrier project is rewarding farmers for the conservation of a special bird and habitat which previously had been seen as a problem and is now seen as an opportunity that may include a bonus payment flying into a farm. In Kerry, they are dealing with water quality across whole-farm level. It is extraordinary. What we do is in the halfpenny place compared to that project. It can be done.

We are missing policy support. The CAP strategic plan is a phenomenal opportunity. I have worked closely with the Department of Agriculture, Food and the Marine for many years and we are heading in the right direction but we need to head there faster. We also need advice and support at a local level. How can we get that? We must tap into farmers’ knowledge of how to manage the land for nature and ecosystem services. Another big challenge is trying to convince farmers that this is the future. This is not sandal farming or wheelbarrow farming, it is about adapting cutting-edge technology to deliver new outcomes. Society wants us to deliver biodi-

versity and carbon sequestration, as well as good food, and farmers are up to that task if they are properly rewarded and supported.

Dr. James Moran: To address the question, there are considerable opportunities for Ireland to be a leader in sustainable food systems and to take to the lead on climate and biodiversity action. I agree that we cannot run the risk of carbon leakage but it is important that Ireland takes the international lead on these matters, particularly at European level and in support of the Fit for 55 legislative package proposal from the European Commission. One of the instruments within that is to look at carbon borders and ensure that products coming into the European Union have the same environmental standards we expect here. That will be essential and it is on the radar of the Commission. Ireland, as a unit, should be taking the lead on that and supporting the Commission in the development of the Fit for 55 proposals.

We must also consider how to upscale the initiatives and the good work that has happened in the Burren. We were in the same place with CAP negotiations seven years ago. We faced exactly the same issues when we were proposing an expansion of the Burren. The arguments were that the Burren is unique and cannot be repeated anywhere else. Unique individuals such as Dr. Dunford, Mr. Davoren and Dr. Parr were involved. It is a unique landscape. From working for years with those people in the Burren, and from my knowledge of what is going on in other places, I can say there are unique individuals in every local community across Ireland. We have champions in every local community in Ireland. Each local area of Ireland is unique and has a lot to offer. If a policy framework can be put in place to harness the power of the local to deliver change, we will have a lot to work with.

The Department, in fairness, recognised in the current CAP programme that the broad-scale national approach to agri-environmental climate action was not going to deliver and was impeded, to a certain extent. That is why it developed the European innovation partnership model, EIP, to look at how the Burren model can be replicated elsewhere. That is why we have the hen harrier programme, the pearl mussel programme and the BRIDE project, which demonstrates the approach in a dairy environment. Nobody can tell us now this will not work in other places. This works in the BRIDE project, in the pearl mussel areas across the west coast of Ireland and in the hen harrier areas. We have tried and tested the approach to perennial olives, almonds and vineyards with colleagues in Navarre in northern Spain. We have tested it in the Montado agroforestry systems in Portugal. It has been tested through arable systems in the UK. It has worked every place it has been rolled out as long as the principles that support, incentivise and reward the production of these ecosystem services are maintained. Long-term payments for farmers must be also put in place. Local services need to be supported and local partnerships established in order to deliver. We now have the opportunity to scale this approach in the CAP strategic plan.

The one big issue I anticipate is that our administrative systems are set up for a national approach, not a more locally-adapted approach. We have put in place proposals to make this happen and it is now incumbent on us to make this operationally feasible. That will involve not the administrative system dictating how a programme should work but an administrative system built to facilitate the delivery of this local support and action across the 130,000 farmers in the country. We are at a cusp here and this can be done, although I do not want to hear anyone anywhere saying this can be done anymore. We have spent seven years proving it can be done in multiple landscapes across Ireland and Europe. The proof is there in the BRIDE project that this approach can be taken in an intensive dairy environment.

Chairman: I thank Dr. Moran. I will ask about the CAP strategic plan. Will Dr. Moran take

it back a little and explain to us all where we are at and how we might realise the opportunity he is talking about? This is the climate committee, not the Joint Committee on Agriculture, Food and the Marine. Perhaps Dr. Moran could give us an education on the CAP strategic plan, the timeframe around it and what he thinks needs to be done.

Dr. James Moran: The CAP strategic plan has been under development for the past 16 to 18 months, since we saw some clarity on the legislative framework at EU level. There is some hampering of the environmental ambition in the EU framework within which we are working, but it has given a lot more flexibility to member states than it had in the previous programming period. We are now in the final stages of the development of the CAP strategic plan. I would imagine it will go to public consultation in the next week or so and it will be submitted to Brussels for approval in January 2022. I presume there then will be a number of negotiations back and forth between the Commission and the Department to finalise the plan. It will be then rolled out on farms from 1 January 2023. Essentially, we have the next eight weeks to get this right.

In the draft interventions, we have seen much of what we and other partners have been advising. I must admit the Department gets a lot of advice from various different sectors and stakeholders whom it must pull together within the European framework. The bones are there at the moment. I am worried that in these last crucial few weeks, key elements of what has been the success factor of these local initiatives will not be in place, including the flexibility of the programme. The green architecture of the CAP contains three broad tiers. In pillar 1 there is the baseline conditionality, rules that all farmers getting basic payment must adhere to. Much of this is basically adhering to environmental legislative standards and broad general guidelines. They need to be set at a level that meets the legislative proposals.

In addition, 25% of the funding in pillar 1 goes to these new eco scheme models. At the moment I am concerned that some of these are basically repackaging of the baseline conditionality rather than a step in the ambition. I would hope that in pillar 1 there would basically be secure infrastructure across farms that can be paid on the quality of them in pillar 2 in our agri-environmental climate schemes, as has been demonstrated by the good work of Mr. Sheehan and Dr. Dunford in their initiatives.

When pared back, these three tiers must work in conjunction with each other. They need to be cognisant of and at least meet our international commitments. We can make this happen but it will require everybody buying into the vision in the next eight weeks or so and, importantly, when the detail on the implementation of these programmes comes in 2022. We always say the devil will be in the detail. We have 12 months in 2022 to make sure that when the details of the schemes are put in place, they work for the farmer, work for the environment and work for society at large.

Chairman: I thank Dr. Moran for that very helpful contribution.

Deputy Richard Bruton: I am in the precincts of Leinster House. I missed the beginning of the presentation as I was in the Dáil Chamber. I would like to get an idea of the payment metrics for ecosystem services. What is a farmer paid for a hectare at a B rating or for reductions in carbon, biogenic methane or whatever it is? Is there a settled calculus on this and a settled verification that could allow this to be scaled up?

My second question is about processors and retailers who are driving on the basis of never mind the quality feel the width. Surely they are susceptible to the same kind of pressures that are now being exercised through the European Green Deal right across the sector? Should we

not be embracing them as part of this to start paying premiums for quality premium sourced materials?

I would like to understand the difference between the BRIDE scheme and some of the EPA and IFA smart farming initiatives which focus on nitrogen, the mix of grasses sown, the manure spreading, the breeding, the health of the herd and all of these good things which are shown to improve the bottom line and certainly reduce the carbon impact. Are these different things or are they part of the same family of approaches?

I know the issue is now focusing on methane because in the EU inventory it is treated as its value over 100 years, which understates its impact in the shorter 20-year horizon we are actually dealing in. How is this issue of paying for biogenic methane reduction to be embraced? It can be done in many ways, including by better breeding and earlier slaughter. Everyone focuses on herd reduction but that is only one of many areas. I think the Government has turned its face against herd reduction anyhow. How are we to address this issue of pricing methane in Mr. Sheehan's view of putting proper incentives in place that encourage more environmentally sound farming?

That is probably enough for the moment. I would comment, as Dr. Moran did, that border equalisation is very much part of the approach of the EU. Mercosur, as I understand, is stalled because of the lack of equivalent environmental standards in some of those countries. This is very much on the radar of the European Union and I think that will also filter into the views of processors and retailers.

Chairman: I think those questions are primarily for Mr. Sheehan and Dr. Moran, but if other witnesses wish to come in, they are very welcome to. Witnesses who are participating online might use the raise hand function if they want to answer any of these questions.

Dr. James Moran: The Deputy asked about the science behind the payment metrics. Measuring the environmental quality of a piece of land is quite complex. Its environmental quality can be measured from the biodiversity or nature point of view. The soil quality and hydrological quality can be measured, as of course can the greenhouse gas balance. We have tried to capture the complexity of the science and distil it down into a few simple variables or metrics that can be measured on an individual field.

For example, we capture the nature value by looking at the composition and structure of the plants within a field and the overall sward, whether it is improved grassland, semi-natural grassland or other habitats, for example. Particularly in upland areas, we look at the extent of bare peat. We know that a greater level of bare peat leads to greater greenhouse gas emissions. Immediately a higher score will be achieved if the area is totally vegetated with little or no bare peat. On the other hand, if the area is extensively managed, there is a build-up of this litter level within the soil. We also measure the litter level that is visible to the farmer. Those are our soil quality variables.

We also look at water quality. We look at the risk of nutrient export and sediment loss from the farm. The pearl mussel project has looked at things like bare ground and the extent of riparian zones for example. This can be converted into a scoring system on a ten-point scale. In the same way that farmers, by looking at the tail bone and over the ribs of a beef animal in a mart can give a rough score of what the factory will pay for that animal, they need to be in the same position under a ten-point scoring system to know what the environmental performance of that field is. We then give a graduated payment level on a scoring scale of 1 to 10. It is exactly the

same as with the Burren project.

The handbook on carbon farming from the European Commission that was published in June contains the variables we have been using for the past five or six years in the pearl mussel project and the hen harrier project. While this is going on, research projects in various universities ensure the scoring system we have correlates with improved greenhouse gas balances, soil quality, water quality and nature value.

The science has a role in understanding the complexity of this situation, by distilling that complexity down into simple variables that can be measured at farm level, understood by the farmer and, more importantly, are controlled and not subject to the vagaries of weather. We then link the payment rates to that. It is quite a simple system when it is broken down.

Dr. Brendan Dunford: In the Burren we have a ten-point scoring system. Farmers with a field scoring less than 5 get nothing. They get a payment for a score of 5 upwards, and fields that score a 9 or a 10 which have exceptional biodiversity and water quality get a bonus payment. Therefore, there is a carrot-and-stick approach.

In calculating those payment levels, we looked at the additional work involved in managing the livestock to deliver those biodiversity and water quality outcomes and looked at some of the transaction costs and some of the opportunity costs. That gave us a figure of about €315 per hectare, which is what we pay for something scoring 10 out of 10. We work backwards from that in calculating payment levels. As Dr. Moran said, the science behind it is very complex and very strong, but in the interface with the farmer it is very simple, with them getting a score from zero to 10.

Deputy Richard Bruton: Does biogenic methane enter into it at any point or is that just by way of correlation off-site through other academic studies?

Dr. Brendan Dunford: Perhaps Mr. Sheehan or Dr. Moran might come in on that. It depends on the local environmental priority. In the Burren, our priorities are biodiversity, water quality and landscape features. Our scoring card is built around that. Biogenic methane can be incorporated into scoring cards in other areas.

Dr. James Moran: Rather than focusing on biogenic methane, the important thing is overall net emissions for the farm's unit area. With our systems, if farmers are invested and rewarded, with part of their payment being linked to the protection of nature, water quality and biodiversity, they will match their stocking rates to the production of these services. If they maximise their environmental payments under this system, then they will be farming closer to the capacity of the land. As a result, they will come closer to a neutral greenhouse gas balance overall. They will be more invested in space for nature and management of land to ensure that there is no risk to water. With regard to improving the number of habitats that we have woodlands for, for which we have scoring cards too, if farmers want to invest in more woodlands, trees or better hedgerows on their farms, that will improve the overall greenhouse gas balance. They will not be pushed as much to increase the numbers which correlate with the biogenic methane. Rather than having a tunnel-vision focus on methane, we need to concentrate the overall greenhouse gas balance coming from a unit area of the farm. If the farm concentrates not just on food production, but also the production of nature, high-quality water and carbon sequestration, by definition, we will have to move towards carbon neutral agricultural systems. We are not actually putting a cap on them. Farmers are incentivised and make logical, rational business decisions to move towards this system.

Mr. Donal Sheehan: The BRIDE Project operates by paying for the space for nature. We map every farm. We are able to map the land that is in habitats, whether there might be 11% as in the example, or 50% space for nature and 50% for food production. We score those habitats based on quality. The quantity payment is €200 per hectare if it is under 5%, going up to €300 per hectare between 5% and 9%. Once the area hits 10%, it goes to €400 per hectare, and at 20% or above, it is €500 per hectare. We have to deal with tax because it is only a pilot project. Once a threshold is reached, we have to include a cap. If we are looking for a farmer to put in an acre of oak woodland, that farmer will say to us that he or she is milking 100 or 200 cows and is making €1,000 of profit per hectare, so if we can give that farmer €1,000 per hectare, it will be turned into oak woodland. That is what will happen. Maybe if we did not give €1,000 per hectare but, to address the Deputy's other question, we could give a payment from the retail opportunity, then the signal from the market will be much stronger than the signal from the BRIDE Project, which would mean that the BRIDE Project will be here today and gone tomorrow. The signal from the consumer will be there all the time. It might be small but every time a farmer gets a meat, cereal, beef or lamb cheque, with a Farming for Nature signal from consumers at the end to indicate that they are happy with how the farmer is producing food, that would make a significant difference to the way we farm. That signal is not there at the moment. We pay €200, €300, €400 or €500 per hectare, with a cap.

The Deputy's other issue relates to general best practice. It was initiated by the IFA. There are no payments as far as I am aware. It is just general best practice that the IFA promotes among the farming community. With regard to biogenic----

Deputy Richard Bruton: Does the BRIDE Project not look at the breeding? Is it strictly about habitats?

Mr. Donal Sheehan: It is. We wanted to simplify it. Many other people deal with breeding and efficiencies in breeding and operating a dairy farm or other farm. We concentrate on the environment and biodiversity in particular.

With the way that we look at methane, carbon sequestration or whatever else, we focus on the 10% space for nature. I always say that methane and carbon dioxide are for the scientists. If a farm was measured for methane, carbon dioxide or carbon storage, the money would go to the people who are measuring it and the administration to measure it. The farmer who needs the money to improve the habitats will get nothing. We should focus on getting everyone in Ireland up to 10% and on the stocking rate instead of on the numbers. The high stocking rate causes significant damage. We should focus on bringing the stocking rate down to a sustainable level, where there is the 10% for nature, not as much fertiliser is used, and the methane and carbon dioxide will look after themselves.

Senator John McGahon: I thank the witnesses. This has been enjoyable. I get what they are saying. The language that we use is important. It is about reward, incentivising change and taking a logical approach to make it as easy as possible and to have a financial incentive for people to make these changes, which at the same time will benefit our environment. It is great to hear Mr. Sheehan's point because I believe in it. Just because we are a small country, there is no need for Ireland not to show leadership, regardless of what other countries are doing. With regard to what other countries are doing, it is important to know, when we talk about financial rewards that we can offer, if anything like that is happening in other European countries which we can look to to take advice from, where that type of payment rewards people for engaging in biodiversity and localised ecosystems are being used. Is that being looked at anywhere else in the world?

The witnesses have discussed financial incentives and how much that would achieve. That question has been dealt with. The other question is how we can encourage farmers to take greater ownership of the environmental agenda. How can we encourage individual people to get more involved with shaping that agenda themselves? It is often done through representative bodies or through organisations such as the witnesses' organisations. How do we encourage individual farmers in this country to say that they want to get on board with and move towards this?

If this app was to be rolled out nationwide, would that be a financial burden? What would the cost be to make that wide scale so that it could be used nationwide? A witness said that it is up to farmers themselves to map that land through the app. More information on how the app would work and how it would be rolled out nationwide would be useful.

Dr. Brendan Dunford: I thank the Senator for excellent questions. I will address the first question and will ask Mr. Sheehan and Dr. Moran to address the other two. Regarding other examples in Europe, Ireland is the European leader in paying for ecosystem services. BRIDE has moved away from European innovation partnerships for the Burren and hen harrier. It has moved away from compensating and towards incentivising. The first result-based payment for ecosystem services in Ireland was developed in the Burren. It has spread to about 2,000 farmers. Hopefully in the next Common Agricultural Policy, CAP, up to 20,000 farmers will be able to avail of this, at a minimum. We are leading the way but we need to continue to lead the way and to do it well, because this is where Ireland, as a small nation, can be a leading international light. This is the way forward not just because of the structure of the payments but because it gives farmers the freedom to farm. Farmers hate being told what to do. They love using their creativity, innovation and independence to decide how they will deliver these ecosystem services. We are leading the way. I thank the Department of Agriculture, Food and the Marine for supporting that over the last CAP period.

The notion of farmers taking ownership is important. I will gladly admit that I am not a scientist. Everything I have learned has been learned from working closely with farmers and listening carefully. After a while, you begin to appreciate it is not just about the money. Money is very important but so too is the fairness and transparency of the payment, which is an incentive. The support in terms of technical advice is also important, but most important of all is the belief this is the right thing and this is the future. I am sure Dr. Moran would agree that whenever you talk to farmers, they always talk about legacy and leaving the land in better condition. If we can convince farmers in better condition means land that can deliver a whole suite of ecosystem services and is multifunctional in the truest sense of the word, then we are winning.

How do we do that? When we started off in the Burren, for example, farmers thought environment was a dirty word. They thought there were a bunch of academics and scientists telling them how wonderful this place was and they were just the stupid people left behind. Listening to the national discourse of late, you hear the same thing. Farmers feel they are being victimised and they are being portrayed as the ones causing the damage, as the problem and not the solution. We need to flip that on its head. We need to say we have a massive problem with our environment, climate and biodiversity but the only solution is the farmers of Ireland becoming the first responders to that problem. We must get to that point, which will be most effective. The best source of advice and inspiration for farmers is their peers, other farmers, especially at a local level. We can see the effect Mr. Sheehan and Mr. Michael Davern have had in the Burren in bringing a whole community along, and that is the way forward.

Farming for Nature is an initiative we set up a few years ago. We have identified farm lead-

ers throughout Ireland who are doing great things for nature, producing really good food and are an inspiration to those around them. It is about opening up those farms and those farmers to other farmers so they can take ideas and inspiration from them and growing it at ground level. Farmers trust other farmers because they have lived it. We need to highlight those farmers, and Mr. Sheehan is a great example, who are producing great food but doing so in a very socially and environmentally sustainable way. We need to flip the narrative around. That is of great importance.

Regarding apps, the hen harrier project has begun the development of a field-based app for advisers to capture ecosystem services in the field. The user punches in the information, it feeds into a system and that determines the score and the payment. It is a phenomenal system. If we want to scale these approaches, we need to do so efficiently so that there is minimal cost to farmers. The apps which have been developed have made things much more efficient. Currently, they are mainly used by advisers but in future we would like to see farmers themselves capturing their ecosystem services out in the field because we want them to be able to see what they are delivering and to be able to measure it and get paid as a result.

Dr. James Moran: In terms of what is going on in other European countries, as part of my job I am a board member of the Results Based Payment Network, an EU network that looks at these programmes across the EU. If you look at the *rbpnetwork.eu* website, you will see Irish case studies all over it but colleagues across other member states are also working on this. Outside of the European Union, some countries have taken even further leaps as they do not have the framework of CAP to deal with. Countries like Switzerland, for example, have been doing this for years and have taken a step further by linking the labelling of food to these systems as well. I hope in future we will use our ten-point scoring systems to differentiate food based on that as well. It would fit into our Origin Green programme and processors could take that straight away rather than having to build new systems. They could use the same scoring system and say, for example, that under the national agri-environment scheme or a local agri-environment scheme, 50% of their farms in an area have scores of X and above. It is a higher environmental product and they can market it thus. That is a possibility.

In the UK, the development of a post-Brexit agriculture policy is all about public payments for public goods. We are doing a lot of work at the moment with colleagues in England, Scotland and Wales. In particular, we are working closely with the Environmental Land Management, ELM, tests and trials in Dartmoor which are taking the scorecard work that has been done in Ireland and adapting it at local level and putting that system in place for the post-Brexit policy. We are in the lead on this at the moment but we are leading it locally as opposed to nationally. Other countries are going to pass us out in the next 12 to 24 months if we do not push on with this.

In terms of the apps and the maps, the Environmental Protection Agency, EPA, in conjunction with Ordnance Survey Ireland, OSI, is producing a national land cover map of the country. It was supposed to be delivered in quarter 1 last year but is now expected to be delivered in quarter 1 of 2022. That will be an initial map with an accuracy assessment of all of these habitats throughout the whole country. That can be easily linked into an app which farmers can pull up and the map can be automatically digitised if it is linked in with the Department's computer systems. The basis of the land parcel identification system for the CAP payments is the OSI PRIME2 data set, the same basic maps used by the EPA. Now we are in a position, with mobile app technology, to merge the maps and data from the EPA, the OSI and the Department of Agriculture, Food and the Marine and to overlay them. This can give a lot of data on farms which

will enable farmers to make informed decisions.

In terms of farmers taking ownership of the environmental agenda, as Dr. Dunford said, farmers have been told since they were knee high they must hand the farm on in better condition. What is better condition? We need to give a clear signal and agree together, as a society, what is better in terms of food production, environmental protection and meeting the needs of society as a whole. Farmers can very much take the lead in this debate and contribute to what is better in their particular context on their particular farmed landscape.

One mechanism for this to happen is the European Innovation Partnership scheme, under which partnerships between farmers, their local communities, advisers and researchers are set up. The partners are on an equal footing and all bring their knowledge to bear to find solutions to problems. That is our starting point. We respect each other's knowledge and we build trust on that basis. We work towards a common vision, recognising that, in any one piece of land, the farmer and farming family who have farmed it for generations know it better than anybody who can be parachuted in for a day or a couple of hours. We respect that, harness that knowledge and work together to build up from each individual farm, to local communities and on to national targets. That can be done if we put the framework in place to realise that vision.

Mr. Donal Sheehan: There is an SIS accreditation in Switzerland, which is where we got some of our inspiration, but it is not as detailed as the Farming for Nature programme. Members might be familiar with Jordans cereals in England. It has a certification system for its farmers who must work to a certain standard. When we talk about standards and what other European countries are doing, a major problem in recent years has been the greenwashing of our food industry. If we are going to develop any standard, it must be robust. We can no longer say a product is green or is this or that unless we are able to robustly stand over that. Consumers are too savvy now. They know what they are looking for and the younger generation in particular, who went through national school with seven green flags, are looking for recycling, water quality, biodiversity and so on. Whatever standard we come up with must be robust. We need to give consumers confidence what they are paying for and the reward that will go back to the farmer is exactly what it says on the tin.

On the point about farmers taking ownership, my own experience with farmers in the BRIDE project is they are driving on with these improvements. I was out with my own dairy discussion group, not with BRIDE, on a farm during the summer. The assessor who was out on that farm for the BRIDE project the previous summer said it was one of the worst he had been on, but when I went out, I could see massive improvements. There was no pesticide use and the farmer did not even realise how impeccable his farm was. There was no room for anything. The hedges were a bit untidy, which is exactly what you want. The field margins had got a bit wider. He never made an issue of it. We were discussing breeding, milk production targets and so on. If it had been the year before, he would have apologised if he had a thistle or a bunch of nettles in the field, but it did not bother him at that point. It was very clear to me that he had got the message. When we were finishing up the farm walk, a buzzard flew overhead. I had not spotted it, but I normally would have. He spotted it and asked "Donal, is that buzzard?" It was a great signal to me that we were getting in touch with the farmers and getting them in touch with nature.

The app includes a full list of the species that can be found in the BRIDE project, including a visual picture and the sound they make. Part of the problem relates to the species that are gone and the species that are in trouble. The skylark was one of them. Only two farmers in the whole BRIDE project had these species, but they did not know that they had them. Again, I

was on another farm walk and we saw a skylark when we were looking at the cows. I asked the farmer if he knew what that was and he said “No”. I told him it was a skylark. We have a target payment for these species. If a farmer has any of the target species on his or her farm we give a target payment. Neither of the two farmers knew what they were. Part of the problem is that farmers are being blamed for losing biodiversity, but nobody told them about what biodiversity was, they were not told which species were in trouble, and they still do not know. We have 42 farmers, which is a very small proportion of what is out there. Some farmers are very tuned in with regard to the species that are there, but many are not. As well as scoring for quantity and quality of habitats, the app also shows the species to look out for so that farmers can become more in touch with nature on their own farms. The best part of it is that it will probably engage them. They will have this on their mobile phones and it will engage them every day so they know what exactly is on their farms. They will see the improvements that are being made.

Deputy Darren O’Rourke: I thank the witnesses. It has been very informative for me. It is very interesting to hear the witnesses’ perspectives and experiences. What they are saying really chimes with our climate obligations. It is interesting to hear that farmers have a willingness in this regard. I can see it in my area, and how we can point towards the new opportunities and new ways of farming. I wonder then why we are not making so much progress. I wonder why the debate is so toxic. Perhaps we could get a sense from the witnesses of this. There is such a commonality in the presentations and a shared analysis around where we are and where we need to get to. There is a lot of detail that I have not yet got my head fully around regarding the frameworks that could make that happen, including results-based payments and so on.

I have a few questions and I hope to afford the witnesses the opportunity to share some of their frustrations on where they believe the barriers are. I have a question on scale. I am conscious that a lot of this is pilot projects. We have lots of pilot projects and for some reason a lot of it does not scale up. What are the barriers to scaling up these initiatives? What needs to happen in the next short number of months for these types of initiatives to be scaled up?

On the CAP strategic plan, what are the witnesses assessment of CAP? There is an idea that farmers will respond to incentives. There is an argument that maybe the incentives have been the wrong ones. Does this reflect the wrong set of values at a European Union level or a national level, and does this continue on in the current CAP? Is the current CAP large enough or is it a smaller pie than previously? Is it the case that CAP has been repurposed?

The witnesses have spoke about engagement. This issue has come up time and again. During planning for carbon budgets, were the witnesses’ organisations consulted, formally or informally, on the development of the upcoming climate action plan?

Dr. James Moran: Where do we start: airing our frustrations, or not? We need to understand that a lot of this is driven by policy. When we talk about land use in Ireland, with almost 75% of the land either in forestry or agriculture, this controls a lot of the direction. That is really our common agricultural policy. For many decades, this has been driven by quality food production at low prices. It must be remembered that we were coming out of near famine situations after the Second World War when the policy was first devised. From the 1980s, it was recognised that we were getting into overproduction. There were wine lakes, butter mountains, grain stores full to the brim and so on. It was recognised that there were environmental consequences and societal consequences of restructuring of rural areas as result of that policy. It had been a very successful policy in feeding Europe at low food prices for approximately 40 years.

Then we started to know about the science of the environment, and we are now at COP26.

After the Rio Earth Summit in 1992, we had the MacSharry reforms to try to bring in the environmental component into CAP. Sometimes we feel like we are on the deck of the *Titanic*. We found out a couple of nautical miles back in 1992 that the iceberg is there. The captains of the ship and of industry are ploughing on and saying that the ship will survive any hit from an iceberg. That is how it feels at the moment. We are at COP26 and we feel as though the iceberg is there in front of us. We are possibly at a situation where we can no longer turn the ship and we are going to career straight into it. Then it is all about how do we adapt and evacuate to lifeboats at that stage.

The frustration is that the CAP has tried for 30 years to bring in environmental considerations. There has been very slow progress on that. One of the issues is that in the preamble to CAP it is trying to work towards a sustainable food system. When one looks at the preambles it says it is working towards sustainable development goals, it is working towards feeding the European population with cheap food, and it is working towards environmental goals. In reality, however, they are impossible goals and objectives to achieve all together. One then gets very much stuck in a situation where, if one has impossible goals or objectives set within a quite rigid structure, one ends up at each policy cycle with a little tweak and sticking to business as usual or at least to inaction.

This is one of the issues we have and we have seen it with our own examples of food harvest. We will still drive on with production but we will keep an eye on it to make sure we do not harm the environment too much. Food Wise was about keeping a bit more of an eye on the environment and being a bit more wise about it, but still reaching all of our production targets. But we did not reach any of our environment targets. Now in our food strategy we are thinking that now we must start hitting our environmental targets, but we see already - 12 months after the agrifood strategy has been published - that it is out of line with the targets Ireland needs to meet on the environment, and the climate change targets in particular. I am not answering the Deputy's question very well, but we must understand----

Deputy Darren O'Rourke: It may have to do with incrementalism.

Dr. James Moran: Yes. I often think of the classic example of where we are at the moment. We have heard a very good example about cutting flock numbers or herd numbers in Ireland. In 1999 there was an issue of the western hills in the context of a large amount of soil erosion. Sheep numbers were very high and this was leading to issues. It was signalled from the 1980s, a decade previous, that something needed to be done to sustainably manage the sheep numbers on the hill. In 1999 there was a European Court of Justice finding against Ireland stating it would not get any more agriculture payments in the following year unless something was done about this. What did we do at that stage? Rather than managing the incremental management of this, we went over a cliff edge and stock numbers had to be cut by 30% overnight. I remember being in Tourmakeady at the time as a very young adviser talking to farmers at a rural environmental protection scheme, REPS, training course. They said when they heard first about this European Court of Justice finding against Ireland, they were not sure what it was all about, but they thought stock numbers would be managed at last. They said they had one or two shareholders in the area who had 800 or 900 sheep while others had 50 or 60, and this at last would bring that 800 back down. What happened, they said, was they were all cut by 30%, so the lads who were not doing any damage were cut to 20 or 30 ewes. They were then off the hill; that was it. The lads who had 800 were cut to 500. I am not blaming them as they drove on and followed the incentives.

I believe we will have exactly the same issue now. We have had repeat incremental change

leading to no real results. Now we are at the same cliff edge again. With a wrong move and a stroke of a pen, we can destroy our agricultural sector and make a very bad move. This is why, at this stage, we need to make a bold move with our CAP strategic plan. We need to be environmentally ambitious on it.

Deputy Darren O'Rourke: Is that within the gift of the Irish Government to do or is Dr. Moan depending on the European Union for that to happen?

Dr. James Moran: We work within the framework but we can do so in the Irish Government. Even in the past week, I saw something which is very worrying. We had a 5% target for these biodiversity managed areas, BMAs, Mr. Sheehan is talking about in the eco schemes. I do not know what has happened in the past eight weeks but it has gone from 5% to 4% at the stroke of a pen where the target in the agrifood strategy is 10%. That signals we are on the same scenario with out CAP strategic plan.

I may be talking in manner that is a little too frustrated now. However, in dealing with these issues, knowing what we know, knowing it can work and knowing farmers such as Mr. Sheehan are crying out for some positive moves to make this happen, and given the lack of leadership at departmental level, at Government level, around this table as well and among the farm organisations - I will probably be crucified for having said this - we have to take positive action now. This is the problem, and it does not have to be at that extent.

One thing about sustainability is that it is all about economics, society and the environment working in harmony, but we must see it from the basic principles. The economy is a construct of society - it serves society - and we all have to work within the limits of the environment. This is where we need to get to.

I have gone off on an awful tangent. I do not think I have answered any of the Deputy's questions. It is just this level of frustration. As scientists, as people working on the ground and as farmers, we see and live the issues. Now we just need the political leadership to make this happen.

We cannot blame Europe. We are very good in this country at saying Europe makes us do this and that. We are European citizens. We are involved in shaping that framework. The framework this time has been handed to us - back to the member states. It is as though they said, "Right lads, you sort it out this time at national level", for the CAP to a certain extent. And what is it? It is a race to the bottom across all member states worried that if one of us takes an ambition, we will erode our competitive advantage whereas we should be thinking we will take the lead and use that to our competitive advantage to sell our products as high-environment high-welfare products.

This has to involve the industry as well, as Mr. Sheehan said, if some people within it lead on this as well and start differentiating the products. I do not see why Bord Bia and Origin Green do not differentiate Irish products based on their environmental standards. We say it is all great, knowing damn well it is not.

Chairman: I will push Dr. Moran along. It is important we hear his frustration.

Dr. James Moran: I am sorry I have gone off on a rant. I promised when we came in here that I would not do this. After an hour and a half, eventually, I failed.

Chairman: If Deputy O'Rourke wants to, there were a few other questions. I am conscious

Senator Pauline O'Reilly needs to leave and she wants to ask a question. Perhaps Deputy O'Rourke wants to ask his last few questions.

Deputy Darren O'Rourke: I thank Dr. Moran for that. I said "incrementalism". Maybe that would have been a better approach in terms of the phase. It was more like policy drift where there is drift.

Chairman: Mr. Traas is interested in contributing.

Mr. Con Traas: I was listening to Dr. Moran. I would say there is fear among farmers. There is a herd mentality. If you are another dairy farmer or another beef farmer in one of the big groups and there is a fodder crisis, something will be done. If you are a forester, as has happened with the ash dieback, they will tell you to cut down the ash and bury it or whatever. It is your problem. Different sectors have more political clout. It is safer to be in the big group than in the small group. That is the reality of it.

As well as that fear, there is a certain amount of disinformation, and it is still being moved around among the farmers through the farm organisations. I am a member of the IFA and I am a committee member of the IFA. It bothers me sometimes that stuff they know is not exactly accurate is being put out through the *Irish Farmers' Journal* to stoke up the fear to get the result they want.

Chairman: I thank Mr. Traas for that.

Dr. Brendan Dunford: No doubt it is challenging. Dr. Moran did well in expressing and limiting the expression of his frustrations. In fairness, it is complex. The Department of Agriculture, Food and the Marine is in an invidious position sometimes trying to please everybody, but we definitely need to take that step.

I always try and look at it from the farmer's point of view because ultimately the farmer will make the difference on the ground for the environment or maybe against it in some cases. How do we convince that farmer? In the past, payments, as Mr. Sheehan mentioned, have been short term. For example, it is a five-year payment, and then what happens? There is no confidence to invest in the future. As a farmer, you always have to think long term. It has been short-term payments.

The environmental payments have lacked credibility. You would have had an adviser a few years ago telling a guy to clear a field and the same adviser coming back telling him to protect it. Many payments have been to prevent farmers from damaging the environment as opposed to rewarding them for looking after the environment. There are issues around that.

I would like to highlight the fact it is not only the money. The policy is the big one. There is a huge opportunity now. The CAP strategic plan offers a significant opportunity but it does need tweaking. Putting a limit on what farmers can be paid to deliver these ecosystem services we desperately want is not a good idea. If we get more, we should be prepared to pay more.

I point out the fact that probably within farming there are cultural obstacles. Farming is a very public profession and, right now, within the psyche of farmers, you are judged by your neighbours and your community about how green are your fields and how pedigree is your Irish stock to some degree. We need to shift that around and get farmers to think that, as Mr. Sheehan said about the weeds, sometimes having a little more biodiversity and capturing a little more carbon - having a little agri-forestry on the farm - are signs of a very good, smart, multi-

functional farmer who will leave a real legacy, not only for his family but for society. That is a major change.

One of the frustrations for me is that the language we are using is all wrong. It is dominated too much by policy and science and we are not listening enough to the farmers on the ground. It is quite hard to hear their voice because you really need to get in there and listen. I am privileged to meet farmers every day and the story I hear is very different and much more positive and open to change than is portrayed generally in the media. That would be my real frustration.

Chairman: I thank Dr. Dunford and Deputy O'Rourke. Senator Pauline O'Reilly has another engagement, if she wants to come in.

Senator Pauline O'Reilly: My apologies if I have to leave before the witnesses have completed their responses. I thank them. It has been very interesting.

First, I would say most of us share their frustration. However, I would say leadership needs to be shown everywhere. It is not only Government. The Opposition needs to show leadership, quite frankly, and it is not doing that either. We are being caught between a rock and a hard place. There is a toxic narrative that needs to stop.

Mr. Traas mentioned the media and the part they have to play. Certainly, if you look through farmers' media in general rather than mention one in particular, there needs to be more of these stories. Definitely, we are hearing the farming for nature stories but we are not hearing enough of them. It is not enough to say the proportion of people who are in results-based schemes is quite low and therefore we are reflecting what is there. We know we need to boost that. Any farmer I speak to wants to get into results-based schemes and, therefore, that narrative needs to come out. I am leaving them space to talk more about their frustrations, but also, maybe, to broaden it, because we want to do the right thing. Anything that can be pointed to specifically that needs to be done, the committee will take on board. It will be on the record of this committee. What Mr. Traas has done today has been very valuable.

Mr. Traas mentioned agroforestry and the role orchards might play on farmland. When he talks about the app, that relates to very small projects. I want to make sure that we are getting something that means we can have that kind of diversity around the country, where it is not a ten-point kind of system, although I know that is not what he meant. That means we have to leave places for orchards and for different things, not just based on land but on the kind of diversity that we need in our food system and soil system, for instance.

Dr. Brendan Dunford: I agree with much of that. It is a good point that there is an appetite. We had a little project in Clare recently called The Hare's Corner. We made an offer to farmers in County Clare to see who would like to put in a small orchard or pond or woodland on the farm. We were overwhelmed with the response. It was not lucrative, and we were just covering costs. There is a real appetite to engage if we can create opportunities to do so. What worries me is that we have made things so bureaucratic. The language has been so wrong and negative and so penalty oriented, and the voices promoting it have been the wrong voices. We have done just about everything we can to put people off the kind of engagement that we want to persuade people to have. We need to work harder on that and the media have a part to play on that. It seems like the negative voices get heard the most.

Dr. James Moran: I mention a concrete example of how we can make this happen. One of the things we have been trying to build on with all these projects, the EIPs and the successive

pilots is that they have all happened at quite a local scale. We know the landscape of Ireland is very diverse. We often forget about how diverse it is. Different parts of the country have different capacities to produce different things. The farming example we have here are very different farms producing very different crops, maximising the potential of the particular valuable land that they have. They are in that direction because one farm is best suited to growing grass and producing dairy products from that and another farm is best suited, say the wonderful microclimate that Mr. Traas probably has, to producing the horticultural products and apples. We have advocated that the next CAP will include these co-operation projects involving local areas around the country. We divide the extensive farming areas of the country, where most of the EIPs are based, into these broad eight different landscape types, spread from the very south east up to Donegal. Starting in January 2022, once the CAP strategic plan is submitted to Brussels, we will begin these co-operation projects - that is the language in the article of CAP - which are essentially local partnership projects. First, we do a diagnosis of the area and come together with the farmers and local stakeholders and put an action plan in place so that they can design their own bespoke agri-environmental schemes, taking what is available there and what is already developed by the EIPs, their forerunners. It is sort of what is in the capital strategic plan, but the detail is not in it and the detail is critical to facilitate this to happen for 20,000 farmers. If that is successful for 20,000 in this stream of the agri-environmental programme when it is rolled out in 2023, within 24 months, by 2025, all the rest of the farmers in the country will be clamouring to have their locally adapted, results-based agri-environmental programme based on these local co-operation project areas as well. It is a challenge for our administrative system to facilitate this but I think there is will in sections of the Department to make this happen. If we can support this over the next number of months, it can facilitate this happening across the country. It is about harnessing the diversity and the power of local knowledge to design systems that will work for their particular locality. I would like to see the results-based payment systems for dairy environments. We have them for upland environments, the foothills and the low land flood planes of the Shannon Callows. We have them in areas where we have to do large-scale landscape scale rehabilitation of our midland peatland landscapes. The solutions are built at local level through, and facilitated by, policy.

Mr. Con Traas: Agroforestry might be a possibility in certain areas. The original idea is to have your planation of forest or trees in a gap and then another line of forest or trees in the space between the trees where you run your conventional agriculture and the rest of the crop agriculture. I have had inquiries from people asking if they can plant their apple trees as the hedge or forestry in between the crops or livestock. That raises some practical problems because policy and quality assurance schemes, etc., do not want livestock in the same place as a food crop. That would be a concern. It was a possibility 50 or 100 years ago but not now. What is required is a re-examination of some of the schemes and how to ensure there is food safety and so on. Similarly, where there is a tillage crop and another food crop beside it, if you spray the tillage crop with fungicide or insecticide or whatever, that may have a drift effect onto your alternative crop. There are practical issues to be ironed out both around the actual farming of it and the regulation of it.

Deputy Jennifer Whitmore: I thank everyone for their presentations. It has been really inspirational to listen to them, what they have done and the leadership they have shown within their own farming communities. In this debate, climate change and climate action and agriculture can sometimes seem insurmountable and that there is no solution that will not devastate our local and rural economies but the witnesses have shown that there is a way to do it. It is great that they can explain it to us and we can point to these as successful projects that hopefully will be rolled out.

Dr. Moran spoke of the cliff face he thinks we face. I agree but I think the cliff face is probably 2025-2026 when we do not meet the initial targets that are set under the current climate action plan, or its first phase. If the Government does not have a higher ambition for agriculture meeting emissions targets in that first phase, what will be the consequences?

Dr. Moran raised something I was going to raise but he pre-empted me, namely, labelling. When I listen to Mr. Sheehan or Mr. Traas speak about their farms, if there was produce in my local shop and I could see exactly what biodiversity or environmental benefit these local farmers were providing I know that I would pay a premium price for it. What steps would need to be taken in order to get such a labelling system rolled out? It would assist a lot of people and give them the information that they need to make the consumer choices that we would want them to make.

Mr. Traas's situation is one that illustrates how badly wrong we have got our agrisystem in Ireland that the majority of us will buy produce that has been packaged and flown in from, say, New Zealand or South Africa when we are perfectly capable of producing our own high-quality product in Ireland and should be doing so. Why does Mr. Traas think that happened? There was obviously a decision or a trigger or something to discourage or disincentivise farmers such as Mr. Traas from getting into that area. How can that be reversed?

Chairman: The first question is for Dr. Moran.

Dr. James Moran: Regarding our ambition, we are heading towards a cliff edge, as Deputy Whitmore said, in 2025 or 2026, and the more we delay action, the less of an incremental approach we take, and if we do not make positive changes sooner rather than later, the more we will have to fall at one point or another. Reading some of the EU targets, we are talking about carbon neutrality by 2050. That is the overall target we are looking towards, but in respect of the Green Deal, in the agriculture, forestry and other land use sector, the European target is to be carbon-neutral by 2035. If we are not working seriously now with higher level ambition to 2025 and 2030, working towards carbon neutrality in the agriculture, forestry and other land use sector, we will not have a chance of meeting the European target for 2035, which is not coming through in the narrative at all at the moment. The science says it, the Government knows it and the main Opposition party knows it as well. We have to meet these targets, and the more we delay action the more difficult it will be.

We should take more positive action now, have an ambitious CAP, for example, set our targets at a higher level of ambition and not roll back as we have seen in the base line conditionality. We need to drive on eco schemes that deliver positive action. With many of the current eco schemes, we know that when they are designed they will not do anything beyond business as usual. There is €300 million per annum invested in that. That a government would do such a thing is crucifiable. In addition, we have to stop having what we call indirect climate actions or agri-environment actions. If we are calling something an agri-environment or a climate action and we are thinking of it as having only an indirect benefit to the climate, it is not climate action. We have no more time for that sort of stuff.

We need to take an incremental approach towards the targets for 2035 and 2050, but the approach we have taken from the start has been very much delayed, considering we have been such a laggard for so long. The delaying will only make it more painful further down the line. If we do it right, based on what we have seen in the projects and the examples given here, it does not need to be painful. We can build a farm economic system, stepping in in the mid-term with public funds to pay for the targets we want to achieve. There is no way around this. If

we want to change our agricultural system - and much of it at the moment is based on production subsidies or still tied to past production levels - we need to tie that now to environmental performance.

We are under-ambitious as well in the budget that has been assigned to the agri-environmental schemes to make some of this change happen. We estimated in some of our initial calculations that we needed a budget of approximately €400 million for agri-environmental schemes. We have in the budget that was recently published €300 million per annum, so it is about 25% short to realise the vision we have. That answers Deputy Whitmore's question a small bit.

The labelling systems are quite a difficult matter. There are many more people who are an awful lot more expert in this within Bord Bia and the Department of Agriculture, Food and the Marine. There is European labelling legislation that has to be taken into account as well. I know from talking to some colleagues recently that there have been webinars on this, and there is Mr. Sheehan's work with his new European innovative partnership project to see if he can develop labelling in this regard, but it is not easy. It is more in the realm of business, marketers and scientists. If, however, the Government gives clear signals that we want to differentiate products, and if the industry takes a lead on this and states it wants a label that means something in respect of environment delivery, the expertise is elsewhere in terms of the industry and the Bord Bia and marketers of this world to make that happen but, again, the will is needed to make it happen.

Chairman: Was there a question for Mr. Traas?

Mr. Con Traas: I will respond briefly to the question about labelling. I do not have a good answer to it but I can see why labelling is very difficult. Taking the example of wild Irish salmon and Irish wild salmon, they are two totally different things, but most people will not know that, so the committee can see where this is fraught with difficulty and that to legislate for it is really difficult.

I wish to bounce back on something Dr. Moran said. The last good environmental scheme we had was REPS. We have not had one since and the rest were not well designed.

As to why horticulture is struggling, apples is reflective of this. They peaked in the early 1970s in terms of crop production area and so on. That was partly because we joined what turned out to be the European Union and it was just so much cheaper and so much simpler to get stuff from abroad. People stopped growing things at home because it was cheaper to buy them from abroad than it was to grow them at home. We, therefore, lost many people who were growing themselves. All the small-scale market gardeners went. It was not that they went all of a sudden; rather, some got older and retired. There was no succession so the farm probably went into one of the mainstream types of farming and so on. That happened over the subsequent 30 or 40 years.

Horticulture is still in quite a good position. There is 18,000 ha of land dedicated to horticulture. It is still the fourth largest sector of agriculture in the country. However, these are problems that growers are discussing. Members can see we still import a lot of potatoes, but the types of potatoes we are importing are frozen chips. We do not have a frozen chip processing plant here, and that is just to do with the industrial scale of producing frozen chips. Those are the kinds of issues there are.

Deputy Whitmore mentioned apples from New Zealand. Bringing apples from New Zea-

land, which is fairly carbon-intensive, is not much more carbon-intensive than bringing them by road from Italy to Ireland, for example. When one starts digging into the particulars of various types of fruits, vegetables or whatever it is one is moving, it becomes very difficult for people to ever understand what is good and what is bad. We have a kind of hunch that things from farther away are worse and things from closer are better, but it is a lot more complicated than that. Obviously, one should never fly any fruit or vegetables anywhere, but a lot of it is not flown. Much of it is transported in large quantities by ship, where it is chilled. It would have to be chilled even if it were sitting here in Ireland. It is, therefore, very difficult for an ordinary consumer to get to grips with what is sustainable and what is not. I would not know where to start with it, but of course we should have more domestic production. That should not be difficult, but what comes with that is a certain level of understanding of seasonality. We do not grow strawberries here for the middle of winter or tomatoes, for that matter. It is just not possible. I like tomatoes and I will have them later in the year as well, unfortunately. It is difficult but at a certain point, unless something like a carbon tax begins to impinge on the price of those products, I do not see that all the labelling in the world will achieve what a simple system of making sure that the carbon price, the carbon attached to a product, will achieve, unfortunately.

Chairman: Was that it, Deputy Whitmore?

Deputy Jennifer Whitmore: Yes, unless anyone else wants to come in, but that has covered it. I thank the witnesses.

Chairman: Mr. Sheehan or Dr. Dunford, if you wish to come in, feel free to do so. I call Deputy Cronin who joins us online.

Deputy Réada Cronin: I am on the premises of Leinster House. It has been a really encouraging session. They are not always as encouraging. Sometimes we feel as though we are standing in front of the sea, telling it to stop. It has been encouraging to hear our guests' wisdom, the meitheal and the humility in regard to the planet, regarding the earth as a provider and producer that has to keep going. If the transition were in their hands, we would be very lucky. It is a pity this is not a meeting of the Joint Committee on Agriculture, Food and the Marine because their input would be valuable there.

My first question is for Dr. Dunford. Everybody is talking about the Amazon at the moment. If it is the lungs of the world, the Burren, ecologically, is the soul of Ireland. We understate at our peril our respect for the planet and the land. It is great that farmers were centrally involved with the Burren project, collaborating and driving the issues, as opposed to being manipulated and scared by some of the lobbies. The incentivising Dr. Dunford spoke about is critical and we will need more of that throughout the island in the time ahead. It is a no-brainer and could be mainstreamed as quickly as possible. Is there imagination on the part of the powers that be and the lobbies to look again and co-create something such as in the Burren project, as opposed to always protecting the *status quo* but really protecting nothing at all?

Turning to Mr. Sheehan, I have family in Cork who talk to me about the magic of Bride Valley. If a pocket of ancient Ireland remains, Bride Valley is it. He is a guardian, therefore, of something invaluable. As he said, responsible farmers are caught in a system that looks and sounds great but that, in reality, is not. They get the blame for that poor system. Ireland has so often got on the back of farming to promote our green credentials, and for that, we are in debt to Mr. Sheehan and his colleagues. The system at the moment is all about financial worth, with no thought for the value of life on the land, whether humans, flora, fauna or biodiversity. Some land will have to be allowed just to be, and farmers will have to be allowed just to be on that

land. Is there a realisation from the Government, the financial institutions and the farming lobbies to get away from the big buck of industrialised food production that is destroying Ireland's green reputation for the sake of the bigger buck? What do we need to make that leap of faith together?

My final question is for Dr. Moran. All our guests have given us a great sense of the small farmer and the producer of food and custodian of the land. It would light a fire in the imaginations of people who might feel a little hopeless. It is not just about selling milk to China or worrying about the way Chinese babies should be fed. It is also about the politics of food. Does the poor quality of food going to poorer people, with the production getting a small number of people very rich, cost the earth? Is it time for decent, old-fashioned socialism in our approach to how we farm, eat and live?

Dr. Brendan Dunford: I am glad to hear the Deputy is a fellow fan of the Burren. Our dream was that the Burren, which is a beautiful little project, would have a big ripple effect throughout Ireland and be taken up and enhanced in other areas such as the hen harrier project, the freshwater pearl mussel project and the BRIDE project. There is no reason Ireland cannot emulate that at a European level and, as we said earlier, become the green heart of the European Green Deal. We have unique potential in Ireland to become that. Nationally, we need what we had locally in the Burren, namely, great local leadership, the enabling of policies, partnerships between scientists, farmers and policymakers, and engagement and belief among farming communities that they will look after their heritage because it is too important to leave it to others. We need to take that role nationally and that is our hope.

I acknowledge this is a meeting of the climate action committee but I am delighted somebody has raised biodiversity. Climate change is described as a wicked problem and we need a wicked solution. Nature can provide that. It has the complexity to do so if it is managed in the correct way. Talking about farming and biodiversity is entirely opportune for this discussion. I encourage the committee to bear in mind they should not focus too much on the single issue of climate but examine the broader issue of both biodiversity and the crisis in food nutrition. We can resolve all these issues by managing the land in the correct way. We have the farmers to do that and we need the policies and the support to make it happen.

Mr. Donal Sheehan: I see buy-in from farmers but I am more sceptical about the industry and, possibly, the Government. I do not think they see issues that have a non-financial value. I keep saying we have to put a value on nature and quality of life. Farmers are beginning to do that, but for everyone else, the question seems to be what the profit margin is. Biodiversity, at the moment, has very little potential for a profit margin. Farmers have to put something on it themselves. When I go out in the morning, I walk among trees and listen to the birds. I put great value on that. We get so many queries from farmers and non-farmers alike. I have a field of wildflowers that I call a biodiversity plot. It is on the top side of the farm and I will go there after this meeting concludes. It is kind of my therapy there.

Farmers are beginning to appreciate that there is and there has to be another way of life. I spoke to a farmer not that long ago who was only 27 years of age. He was a manager who was getting out of farming. I asked him whether it was because of the money but he said the money was quite good. He said his girlfriend was a teacher, and he was getting up at 6 a.m. and not seeing her until 7 p.m. or 8 p.m. that evening. That is the price of the road we have gone down. When the Government sees the value of all those things, we will become a better society.

Dr. Dunford spoke to the quality of our food. We are known as a food nation but we are not

able to stand over it. We can deliver on food quality, quality of life, water quality and biodiversity, but we have to be given the correct signals. If the Government keeps its focus on this €12 billion of food exports, we will not get anywhere. I spoke earlier about the space for nature and the figure of 10%. There is a debate currently about whether the figure should be 4% or 5%, which Dr. Moran mentioned. The lowest figure on BRIDE farms is 6% or 7% and those farmers have increased to 8%. The average in the BRIDE project is 13%. A target or ambition of 4% space for nature, therefore, is not even on the scale. If the average of 13% for nature among farmers in the BRIDE project is assumed to be the average throughout the country - I do not know what the real figure and I do not think anyone does - that is the level we are at with all this biodiversity loss. We actually need to go well beyond 13%, therefore, and a minimum of 10% is what we are saying. That would be a great start.

Ireland is in a great position, despite all the reports of habitats being taken out. We still have many of them. We are in a position to restore them and we would be well ahead of any other country in the world. I worked in New Zealand and two friends from there came over here about six months ago. They were walking the farm and could not figure out why I had hedgerows because they were taking up space for the cows. That is what we are dealing with across the world. That is the road we have all gone down. Despite everything, we are fortunate that farmers still have an appreciation. We are in a great position to start restoring these habitats but incentives must be provided. The Government saying it wants to improve biodiversity and sort out the climate problem is the greenwashing I am talking about. We need action on the ground. Above all, we need direction. It would be fantastic if someone in a position of power and authority were to make a bold statement that we need to change and we are going to change. Farmers are getting mixed messages. The reason there is so much confusion and anger out there is that there is no direction.

Chairman: I thank Mr. Sheehan. Was there a question for Mr. Traas? I know there was one for Dr. Moran.

Deputy Réada Cronin: I would like to say I love Irish apples. I did not have a question for Mr. Traas. My last question was for Dr. Moran.

Dr. James Moran: It was a very difficult one as it addressed the issue of food politics to a scientist. As scientists, we are loath to talk about politics but we need to engage in it more. However, everyone must realise when a scientist engages in politics it is only another opinion. I do not have the same strength of evidence behind me when I comment on international food politics. There are an awful lot of people in the country who may be better placed to comment, for example, economists who would understand this issue much better. However, from my impressions of what I see, we cannot leave something as important as our food systems to the vagaries of globalisation and international food markets. I do not think we have any pretence about this in Europe; we do not do that. Food production in Europe is not a free market economy. Much of it is governed by the incentives from the Common Agricultural Policy.

While food production in Europe is not a free market economy, the way the system is set up mirrors some of the worst aspects of the free market economy, for example, driving inequality and unfairness in the supply chain. Some of this has been put eloquently and much better by Mr. Sheehan regarding the pressures farmers on the ground are under within that sort of a system. One side argues that this is about European consumers and the health of European citizens but then we drive on and everything is export and profit-led. We must pull back a bit from the brink. Mr. Sheehan spoke about putting a value on things. Where do we put our values? Everyone talks about the unfairness in the supply chain but we need to take serious action on that

by having more money go back to the farmers. When we are in rooms talking to farmers they always say, and rightly so, that you cannot be green when you are in the red. The only response to that is that we must create a system whereby the only way out of the red is paved green. This has to go across our international food politics as well but, to be honest, that is way beyond me. I will give an opinion on it but it is only an opinion.

Chairman: I thank Dr. Sheehan for his opinion. It is valued.

Deputy Cormac Devlin: I add my appreciation for the witnesses' statements, comments and answers this afternoon. I begin with Dr. Dunford and Dr. Moran, and the Burren Project specifically. The Burren is some distance from my constituency of Dún Laoghaire but, nonetheless, it is a place I have loved visiting in the past. I am reading from the evaluation of the Burren programme. One of the comments that stood out in Dr. Dunford's opening statement was on bureaucracy, the need for the flexible administration of a similar system which needs to be responsive to farmers' needs as opposed to farmers having to respond to the criteria or systems that are put in place. I hear Dr. Dunford on that. Giving that flexibility would probably be difficult for us as legislators but I can certainly understand the need for it.

The statement notes that as "a flagship agri-environment scheme, the Burren Programme also maintains strong links with environmental organisations and non-governmental organisations (NGO) in Ireland and Europe." The REPS was introduced a number of years ago. In that context, how do the witnesses envisage a programme similar to the Burren programme being rolled out on a more national scale? Will they elaborate on the need for flexibility?

I do not have any questions for Mr. Traas but I thank him very much for his responses.

I hear Mr. Sheehan, especially in relation to dairy farmers, the pressure they are under and the perception that has been created. I heard news coverage on COP26 this morning which referred to the pressure on farmers. In a way, it is pigeonholing agriculture as a whole sector. That puts off people who I believe genuinely want to work with the land. It is in their interests to work with the land and ensure it is viable for future generations. There is an eagerness to improve processes. Mr. Sheehan's opening statement was honest and frank and one I felt needed to be heard. I hope we see similar projects to his own BRIDE Project evolve right across the country.

My questions were focused on the Burren programme and I ask the witnesses to respond on that. Maybe Mr. Sheehan will have a comment or two of his own. I thank all the witnesses for their time this afternoon.

Dr. Brendan Dunford: I thank Deputy Devlin for the question. It is much appreciated. He raised two good points around flexibility and bureaucracy. In many of our protected landscapes, there are many barriers to a farmer farming. Permission must be secured for this, that and the other and it is beyond many people to farm. One of the greatest services we offer to our farmers in the Burren is not just the payment but taking care of that bureaucratic workload. This is what I mean by designing our programmes around the needs of the farmer. None of us likes doing paperwork but for farmers it is a death sentence and a real deterrent. We have taken that whole bureaucratic workload away from them so they can get on and do what they are best at, which is farming and delivering the ecosystem services we want. That is really important, including at local level.

The second point is around flexibility. When we think about a scheme farmers love and

enjoy, the money will be important but the freedom to farm is absolutely critical. Farmers hate being told what to do. We had the discussion before about how different parts of the country are different. Every farmer is different and even the fields within a farm are different. We need to create a programme which allows different forms of management to take place on different fields within different farms to deliver different outcomes. The only way to do that is through this results-based approach whereby the farmer is told what we want and what we will pay for from a field and he or she can go ahead and innovate to deliver that. That is one of the key principles of the Burren programme.

The Deputy spoke about scaling the programme, it effectively has been scaled from 200 to 2,000 farmers across Ireland who are now involved in result-based payments. It is the principles that we are scaling. These are the principle of partnership between the farmer and the scientist, the principle of keeping it local and addressing local issues and challenges and the principle of paying the farmer for what he or she delivers. There is no problem in the Deputy, as a legislator, enabling that to happen. The mechanism is already there to enable that flexibility. It is about deciding what outcomes we want, putting a price on them, putting a local structure in place to support the delivery of that outcome and letting farmers at it. They are more than capable of delivering. My message to the Deputy is one of reassurance that this can be done and is being done and we just need to get on and do more of it now.

Chairman: Does Dr. Moran or Mr. Sheehan wish to come in?

Dr. James Moran: Dr. Dunford has said it all. It is critical that we have an administrative system that enables farmers and gives them the freedom to farm. The key thing that makes the system work is that we have to be very clear on the outcome and results we want to achieve. This is based on a scoring system. All anyone - from the administrator to the taxpayer paying for this to the farmers delivering it - will need to worry about then is delivering the results and whether a particular field has delivered the result and the products. If the farmers have delivered, they get the payments and rewards for it. We do not have to worry about going out and checking what month of the year it was done, how many cows were there or whether the land was grazed with elephants or horses or whatever. We do not have this level of administrative checks. We have to be able to check that we have delivered on the agreed outcome. This is the basis of the results-based programmes.

Levels of trust are key in this. The administration letting go of all of these checks and box-ticking exercises to focus on a result is quite difficult, as is trusting farmers to deliver. The first thing they wonder is what will happen if they do not deliver the results. Will they be liable to penalties, audits and inspections? If the result is not delivered, it is not paid for so there are no problems there. It is easy enough to state this in principle. The difficulty for the scientists is to capture all of this complexity about environmental quality in a simple outcome-based system that can be administered and delivered on a farm. We have shown over the past ten years that this can work.

We must have an adaptive and flexible system. We have some of the answers now. We cannot wait until we have all of the answers. We start with knowing what we need to deliver now. We have a scoring and payment system on this. We have an administrator to deliver it. We continuously monitor and adapt. We will have more challenges in future. We do not stay in a rigid system. If we find something is not working, we have to be able to change it within the system and move on.

Mr. Donal Sheehan: I thank Deputy Devlin for his kind comments. He mentioned how he

is far removed in Dún Laoghaire from the Burren and the BRIDE project. The common thread we all have is that I am depending on him to buy his cereals, meat or milk from me. We are essential workers. Despite all of the criticism we get, people should not forget that we are very fortunate to be living in a country where food is plentiful. We want to produce food as best we can and as healthily as we can. At the end of the day, we all need to appreciate one another. There is a way out of this. A bit of collaboration and people appreciating what each person is doing for the other would go a long way.

Deputy Cormac Devlin: Those are very positive remarks as we approach the end of the meeting.

Senator Róisín Garvey: It is a huge honour to have these four heroes of mine at the meeting today. I was not going to miss the opportunity to engage with them. They bring hope to me, as somebody who lives in the middle of nowhere on a small family farm. One of the reasons I got into politics was my deep concern about farming and the idea of two sizes fitting all, that we have dairy or beef and that is it. As the song says, there are 40 shades of green and that was based on the variety of our land in Ireland. It seems we have failed to acknowledge this in some way over many years. Perhaps we could blame the EU in 1973 but we are where we are.

I work with communities in west and north Clare where I come across farmers who are desperate and do not know what they have to do. They want to do the right thing. We have had too many suicides because of farmers being forced to expand and borrow and who are then up to their necks in debt. It is something deeply disturbing that I have come across in many rural areas. It is a disservice. I feel very strongly about this. It was one of the reasons I decided to get into politics.

The current model is wrong and it is damaging farmers mentally, physically and financially. It fits a certain cohort of farmers in certain areas but it is not fit for purpose for most farmers in Ireland. It is devastating. I am from north Clare and all of the farmers I know come from small subsistence farms. Farmers will say they cannot live off the current model. They have to have second jobs. A neighbour of mine told me his father reared six children on the land. He has double the amount of land with half the number of children and has to work as a carpenter as well. It is not as though the model we are trying to change is fantastic and working for people. It absolutely is not. It might be working for a very small percentage and we can see it when we look at all the money and the huge percentage of CAP that goes to a very small percentage of farmers.

It is amazing the four witnesses are here and leading the way in the radical change we need to see happening as soon as possible. There is a big demand and want for it. I went to 1,000 farmers while canvassing in north Clare. Only two gave me grief about being in the Green Party. The other 998 told me they do not hear the birds, they do not know what they are doing and they are being paid very little money but that the quality of their product is so much better than that of someone with 1,000 head of cattle shoved in a shed for 24 hours a day 365 days a year. They are not getting value for it. The reason I came today was to ask the witnesses directly, based on the fact they are leading the way and giving me hope, what they would do if they were head of Teagasc or the Department of Agriculture, Food and the Marine. We need to be guided by them more than anybody else because they are on the ground representing grassroots farmers whose voices are not being heard in the divisive, unnuanced debate we see played out in the media and by certain people with their own agendas who are not serving the small farmers.

I thank the witnesses because I saw on our family farm at home there was no work and now

we have 12 jobs. It is a 60-acre farm. It is half a job an acre. How many dairy and beef farmers can say they are getting half a job an acre from the price they are getting for milk and beef? I cannot buy a pint of Clare milk. I do not know why people are so afraid to change the system. It is really bad. It does not serve the vast majority of people. It is very hard to access good quality milk or beef because of the monopolies we see in farming and the industrial models we have been using. Now we are speaking about exporting pigs to China. It is madness. There is a climate emergency. It is inextricably linked to the biodiversity emergency. I look to the four witnesses and their expertise to help to guide us out of this. I believe they have the solutions we need.

Dr. Brendan Dunford: I thank Senator Garvey. I met her two weeks ago on the side of a mountain with about 400 people herding cattle up a hill. It was a great celebration of farming in the broadest sense. To answer the question as directly as I can, what I would do if I were head of government, God forbid, would be to invest in Ireland's farmers as the solution to the climate crisis, the biodiversity emergency and the crisis in food nutrition. They have the potential to deliver. When I say "invest" I mean pay those farmers who are willing to deliver. For those who do not want to, that is fine. That is a different agenda. Farmers in their droves are willing to engage with this agenda if they are properly rewarded, supported and encouraged. This is what I would do. Forget about the term "compensation". We are speaking about paying farmers for essential services they can deliver for society.

Dr. James Moran: I echo that. We have to invest in farming and local communities as a solution to these issues. As a society we have to agree on our goals and visions for the land base. We are very advantaged in an Irish context in terms of food production. We will always be an export island unless our population grows massively, which is not going to happen. We can be in a situation whereby we export quality food, perhaps more locally based towards the European consumer who is able to pay more for the quality we are able to supply.

Our land has to deliver much more than food. It has to deliver air quality, clean water, space for nature, recreation and amenity resources. It is the basis of our tourism industry. In rural areas, food and tourism are the main economic drivers on which we are dependent. They are interlinked. God help us, people would probably think it was lethal if I were in a position to be able to make decisions. It would be a case where we utilise the land base for more than just food production and reward farmers and the managers of the land for the range of services and the wonderful potential it has. When we listen to what is being said about COP26 and the international challenges we are facing, even the national challenges seem insurmountable.

Every October, we meet in the Burren. It gives us a renewed sense of hope that when we come together as local communities, we can see what can be achieved in these areas. We undervalue farmers as offering the solutions to and being the drivers of this. To support them, we need clear goals, guidance and rewards into the future and not the type of see-sawing we are seeing now in terms of the setting of goals in any one year and then changing them in five years' time. God knows where they will be with a change of Government cycles. We cannot have our food systems working like that. We need clear visions for what we want to achieve. We need an integrated land-use strategy that gives solutions to climate and biodiversity crises and builds a resilient agriculture system at the same time.

Chairman: Would Mr. Traas like to comment?

Mr. Con Traas: Rather than go over the same ground, I will speak to the issue of the power of consumer sentiment from the perspective of apple growers. Anything that Government can

do to change consumer sentiment is very helpful. Up to five years ago, it appeared there would be no end to the price pressure and continuous squeeze that was on growers. That has changed in the past couple of years because demand has greatly increased. Every supermarket chain in the country, including Lidl, Aldi, Tesco, SuperValu and Dunnes Stores, is crying out for Irish apples. That has led, indirectly, to a significant price increase over the past two seasons, with price being up approximately 50%. That is unheard of. The supermarkets do not like giving growers an increase of more than a couple of per cent per year. That came about because of demand and because the supermarkets can see that people are paying for it. People are prepared to pay mid-range to premium prices for the apples that we are growing in Ireland.

I do not know if anybody here watched “Ear to the Ground” in the past few days, on which there was an interview with an apple grower in Milltown who has been growing apples for, more or less, as long as I have. He said that it is the first time in the past couple of decades that he has hope. I also have hope. There is a tailwind coming in terms of people’s concept of localisation and better understanding of food production and the cost of cheap food. There are costs to cheap food other than just the cost paid by the consumer on the day. The more information consumers have, the better.

Mr. Donal Sheehan: I thank Senator Garvey for the questions. On what needs to change, from where I am coming, it is about education. Farmers need to be better educated with regard to the importance of the environment and what it can deliver. That has never been explained to farmers. When people do not understand something they struggle to try to come to terms with it and to make changes. When REPs was first introduced, it was a great scheme. Many alternative farmers saw it as an income supplement for farmers who, as described by them, were not serious farmers. That is still a problem. There is a cohort of farmers that believe the environment is not that important and that the job of producing food intensively is more important. We need to get the message out there that the environment is equally as important and that it is not possible to produce good food without a good environment. As I said, it is about education.

On the advisory service, it has struggled. Farmers were brought up and trained how to produce as efficiently as possible. That was the advice given to farmers. There is inevitably an environmental cost to that. That needs to change. The advisory service needs to send out the strong message that the environment is not just for non-intensive farmer and that it is more important than ever than intensive farmers have a story to tell. If we do not start looking after the environment consumers will, I fear, go elsewhere. I am totally dependent on consumers and I am always aware of that regardless of policy. If people do not want to drink milk, my business is in real trouble.

Chairman: I thank the witnesses and Senator Garvey. The next speaker is Senator Ahearn.

Senator Garret Ahearn: I thank everybody for their contributions. I want to recognise my neighbour, Mr. Traas. The engagement today has been very positive, particularly from Dr. Dunford and Dr. Moran in terms of their narrative that this is not about farmers against anybody else but about bringing farmers along with us. It was stated that the best way to do that is to support farmers financially and because that is the right thing to do. I genuinely believe that farmers understand this. I agree that we need to bring them on that road in terms of education, supports and what needs to be done but there needs to be a financial element to it as well. In any scheme brought forward by the Department of Agriculture, Food and the Marine there has to be a financial advantage for a farmer to buy into it. They are willing to do it.

Reference was made to biodiversity and managing land. There is no one better at doing that

than farmers. They recognise that and they recognise that their produce is better when it comes from land that is well cared for and well looked after. In Tipperary, we know that well. Mr. Traas would know exactly where I come from. We are tillage farmers at home. On a personal level, I want to acknowledge the work Mr. Traas does locally in Tipperary. He is known further afield than Tipperary, Munster or Ireland. He is known across Europe. He does a lot of promotional work in relation to tourism for the Tipperary area and a lot of work in terms of Cahir farmers' market, which has a great reputation. The quality of food is what he is best known for.

Some of my questions are to Mr. Traas in some ways, but also to all of the witnesses. Many people are getting involved in agriculture or food. They have the best will in the world to be climate friendly and do all the right things but they are not aware of what they can do or how they can do it. How can we best educate or support them in doing what Mr. Traas has been doing for 20-plus years? He has been way ahead of the curve. A number of years ago, we changed how we worked on our farm. We were tillage farmers. We still are tillage farmers but some of our crop is used for whiskey and gin. We are trying to turn part of our farm into producing from farm to bottle without the product ever leaving the family farm. That is something new. My question is how we can do that in the best environmental way. How can we as a Government support people in how to do that properly, but not financially? There is a role as well for the local enterprise offices. They are there to support businesses. Farmers are businesses. The local employment offices play a key role in terms of getting businesses up and running over a number of years. Tipperary is a good area for new start-up businesses. We need to educate farmers from an environmental point of view in terms of what is sustainable long-term and the role they can play in that regard.

As has been already stated, farmers want to do what is right. They absolutely hate paperwork. That is not so true of the younger generation, but they still dislike it. We need to bring forth more schemes like GLAS that are environmentally friendly in order to make it manageable for farmers to buy into this. This has been a really positive engagement today. I thank the witnesses for that.

Chairman: Would Mr. Traas like to come in on some of those points?

Mr. Con Traas: Farmers are pretty much regulated and administrated by the Department of Agriculture, Food and the Marine. Once you start doing something with the product on the farm, such as Senator Ahearn's family has done on the family farm in terms of the whiskey or I have done on my farm, you interact with other Departments. The LEADER groups and the local enterprise offices are very helpful. I was doing something with the local enterprise office only a short time ago regarding a European presentation we were making and much of the talk in that meeting was about programmes that are now coming out of Europe and how the environmental focus is going to be so important to projects that we choose to deliver as food producers. Farmers are known as food producers. If we want to access funds, we have to think very quickly and creatively about how we can run an environmentally sustainable business and so forth. On that side of things, it looks quite hopeful. In our network in the county, we are going to be fairly quick about seeing what is available to us and that will feed back to the members. For farmers, they are in a one-stop-shop in the Department of Agriculture, Food and the Marine and that, perhaps, makes it a little more difficult.

Dr. Brendan Dunford: The Senator raised some good points and I will be brief in responding. Where do farmers get advice on how to do that? They start by talking to other farmers. This year, the farm information ambassador winners were a wonderful family, Norman and Michael Dunne, who have done extraordinary things on their tillage farm. It is a substantial 300

ha tillage farm but they have very much reduced their levels of fertilisers, fungicides and other inputs, while sustaining production levels. Sharing the tried and tested knowledge of other farmers across the sector is something else. I could name plenty of others around the country, such as Andrew Bergin and Pat Lalor, who have been doing this for years and who have extraordinary results both financially and agriculturally to prove that it works.

The second point I am reminded of is this notion about new entrants. Another wish I have is that we could make it more accessible to young people who are not currently farming to get into farming. Access to land is so difficult and every industry needs innovation, fresh ideas and fresh input. That is a little lacking at present. It is very difficult for young farmers to access land. I have met a few of them and what they do when they access land is absolutely phenomenal.

The third point is about the paperwork. There is a lovely thing in what Dr. Moran, Mr. Donal Sheehan and I are proposing today in our systems. The European Court of Auditors visited us and they gave us the green light, saying that this type of results-based approach which one can capture using a simple app is a dream for them as auditors because everything is there to access. One does not need reams and reams of paper and this, that and the other. This is a very simple system administratively, and it is very important, in terms of our design principles, that it satisfies the needs of the farmer with regard to minimising bureaucracy, as well as the needs of the funder with regard to ensuring that taxpayers' money is well spent and is only spent on the delivery of outcomes.

Dr. James Moran: Regarding raising awareness of what is possible, it is all about demonstrating the art of the possible. Farmers respect and learn more from other farmers. There are always going to be farmer champions who take the lead. Many people will wait and see how they get on first and then follow on from that. Farmers always need to see that it is possible on their farms as well. One of the things we have done with the Farming for Nature ambassadors is we have tried to ensure throughout the process over the last three years since 2018 that there are representatives from every sector and land type in the country, ranging from small-scale market gardening to the large tillage farm, from small-scale micro dairy to the large-scale conventional dairy and from all the beef farmers, sheep farmers and organic to everything in between. There is an example of every type of farm and every type of landscape where solutions can be found.

In terms of building the framework then, when these farmer champions or ambassadors put their heads above the parapet and take a lead on this, the rest of society and the policy have to support them and ensure their reward is financially viable as a result of taking that leap of faith. I teach the agricultural environment management programme at GMIT and many of the young people coming into the sector need to see what is possible. Generally, they see what is possible when they see the Teagasc side and from what they see in the farming press. It is always about more efficiencies and more volume, which is right within our current system. It is the only way one can go, but they are forced along that route.

Teagasc has a big responsibility in this as our national advisory agency and research and training agency. It has to demonstrate the art of the possible more across other systems rather than just the conventional beef, dairy and tillage. It is doing that but it is struggling to change and adapt to it as well. It has the Signpost programme in which it is setting up 100 lighthouse farms around the country that are leading the way on this. However, in even a cursory look at that, only six or seven of the 100 farms are in pristine water catchments. We have gone from 500 pristine water bodies down to 20. What do those farmers look to within the Signpost programme? We need to be more ambitious in those programmes about representing the diversity

of what is possible. It is not actually doing down conventional or other systems and the volume, because we will need the volume as well as the quality. However, we have to demonstrate the variety of what is possible so for young people coming into the sector they can see various different pathways in various landscapes. When we start to see that in the mainstream farming media, on demonstration farms in Teagasc and in these Signpost programmes, then we will know that change has happened.

It is not that we are going to replace one system. We will just have more systems and people adapting to their individual contexts and individual farms. As Dr. Dunford said, all fields and farms are unique, but farmers need to see the options that they can apply in the context that they know best.

Chairman: Does Mr. Sheehan wish to speak?

Mr. Donal Sheehan: No. It has all been said.

Chairman: Thank you. I do not come from an agricultural background, but I have been a member of Oireachtas agriculture committee for the last year and it truly has been an education. However, this session has been even more of an education. I am fascinated by both the Burren project and the BRIDE Project. They are very different in that one is dairy whereas the Burren project is small farms and is more suckler farming, I believe. I am fascinated by the idea of the BRIDE project and that we can have this intensive dairy farming. I am hearing that there is a possibility we can do that and that if we do it right, there will not be the wholesale destruction of watercourses that we have seen. Representatives of the Environmental Protection Agency, EPA, appeared before the agriculture committee a few weeks ago and they told us that we are absolutely not going to achieve our objectives under the EU water framework directive of all our water bodies having good status by 2027. There is a great deal of scepticism - I am not saying it was from them, but I have heard it in the public domain - about the new nitrates action plan and whether that is going to deliver the improvements and stop the leaching of phosphates and nitrates into watercourses. I am hearing from Mr. Sheehan with respect to the BRIDE project that perhaps there is a way forward. That is very positive. Dairy is the big challenge in Ireland from an emissions point of view.

I hear Dr. Moran's call regarding the CAP strategic plan and the consultation which he told us will start in the next week or two. Will it run for eight weeks?

Dr. James Moran: Three weeks. It is going to be very short because it has to go to Brussels by 1 January. That is the trouble we have now. It is going to be such a short consultation window that unless all the stars are aligned and many stakeholders come together behind this vision, there will not be the possibility to change much in three weeks.

Chairman: Okay. It is a public consultation so everybody who has an interest should feed into that and try to shape it.

I thank you, Mr. Traas, for your contributions. You mentioned the 11 tonnes per hectare of sequestration. Mr. Traas identifies that number as quite low. In the context of the full emissions in agriculture, one would need thousands of hectares in order to make a significant impact. There are also the carbon savings from import substitution and maybe diversified land away from say dairy, which is highly emitting, to say horticulture. It seems that once one adds up some of the impacts of this kind of diversification and production of tillage crops in Ireland, there might be a much greater carbon dividend.

I am curious about the other opportunities. Mr. Traas's area is apple farming and generating produce from that. However, could he speak about other diversification opportunities, particularly with respect to horticulture, that we might have in Ireland? I am hearing that there might be a significant carbon dividend from that.

Mr. Con Traas: In the general horticultural sector, there is a range of crops that can be pretty much whole year-round productions. There is a certain number of crops, such as broccoli, general brassicas, and so on. There are also crops that we do not grow here at the moment at a large scale. These include onions and so on. While they were grown to a certain extent in the past, they can be a bit tricky to grow here. As I mentioned earlier, there are things like certain types of potato which are imported. This is not because we cannot grow them here, but because we do not process that particular type of potato here, or whatever reason. There are, therefore, many different factors at play there. We could increase our production three times over, which would be a sizable amount of land, compared to what we already have, which is around 18,000 ha.

The same applies in how much more apples we could produce. We could produce a certain amount more. Yet, again, when one is working in an open marketplace, there are certain limits to that.

On the positive side, in the last couple years there have been a few changes in Teagasc. There has been more emphasis on this. Just yesterday, it advertised a couple of new posts. These are permanent positions, one of which is in relation to fruit production. The other is in relation to the immediate response to the ongoing peat issue. Teagasc is hopeful that it can come up with a mechanism whereby it can take a few crops, and get them going in a more commercial context. Then, it will be able to go back to Government and say that it funded those two positions. Teagasc will also be able to say it has proved it can do this, but it needs technical advice for growers. The growers are not there, so we first need to find existing farmers who want to switch over to horticultural farming. Then, we need to assist them in doing so. That assistance might include anything from finance, because they might need finance to start out, to technical advice. They will need help in marketing. As well as this, they will also need buy-in from the whole retail system, such as wholesalers, packers, retailers and consumers. It is a big jigsaw puzzle. We have many pieces to put together to make it work.

However, that is where we are starting from because we do not have an industry or set of industries with critical mass. There are few areas in which we have a critical mass in Ireland, such as soft berries, strawberries, mushrooms, which we actually export, and so on. They are successful. We import some strawberries, but we also export some on a year-round basis. We export massive amounts of mushrooms.

When one looks at crops, such as tomatoes, and so on, they will always need a small land base, because they are so productive. That will not make a huge difference. They have their own issues in having to heat glasshouses, and so on.

It is a difficult question to answer exactly. To go back to the apples situation, we can definitely triple or quadruple our land area. We will be doubling what we are doing in many vegetables crops. There is no question about that. Right now, however, some growers are saying that they need to cut back on what they are doing because they are not making enough money and that it is just not working out for them. They are getting older and less expansion-minded. They are having trouble getting employees. Some of the work is fairly tough. I would not like to encourage it just on the basis of what is good for the country, without good market signals

that the price is going to be there to support it.

Chairman: I thank Mr. Traas for that. Would he or any of the other witnesses be able to point us to studies or research that would give us a sense of the opportunity that is there? I am not necessarily asking that he do so now. However, if he could send anything into the committee, we would appreciate it. It would certainly help us in our consideration of the of the topic.

I am interested in what Mr. Sheehan mentioned about the importation of feed for cattle from overseas. Are there opportunities in Ireland to produce the feed here?

Mr. Donal Sheehan: There are huge opportunities, especially in the last year. The crude protein, CP, requirement has come down because of the emissions. In the springtime, dairy farmers usually use an 18% crude protein ration, but that has come down. We are able to produce cereals and beans, in particular, which is a high-protein crop. There should be huge incentives there to get tillage farmers to come on board and supply dairy farmers. That incentive is not there at the moment. It is an awful pity.

Glanbia did a pilot project a couple years ago where it measured 100 farms for their carbon footprint. The 100 farms that were sampled came out quite well. However, what Glanbia did not take into account was the ration that we were importing. We were in a position to say that while our carbon footprint was low, we were also contributing to the carbon footprint of transport from places such as Brazil, New Guinea, south east Asia, or wherever, by buying plant kernel, coconut, soybeans and so on from those locations.

There is an opportunity there. This is regenerative farming where we support other farmers. That needs to start happening. Before, dairy farmers, in particular, were just going for the cheapest possible way to produce milk. There was no account taken of other factors. For instance, a couple years ago the jersey cow was supposed to be the most efficient to produce milk. There was a big swing over to jersey cows because they had high protein and high solid content. However, nobody had factored in that the quality of the bull calf was poor. The farmer who buys my bull calves depends on me for bull calves. However, I did not go down the jersey route. He was annoyed that the quality of the calves was not as good as what it had been before. There was a situation where dairy farmers were benefiting, but beef farmers were not. It is easy to say that everyone has to look after their own. There is a cost to that down the road. If I cannot sell my bull calves to a farmer and that farmer has to make money out of that, that is going to impact me.

Likewise, I depend on my cereal-producing neighbours so that I can buy my straw from them. If they are going to go out of business, where will I buy my straw? Will it come in from abroad as well? We need to look at the way we produce food in a more holistic way. The decisions we make should not impact on other people. It should be a win-win situation for all farmers, and not just for one sector.

Chairman: I thank Mr. Sheehan for that. I commend him on his opening statement, which was clear and forthright with respect to dairy farming. I have not seen or heard that kind of commentary. Mr. Sheehan is calling out the problem. If our media picked up on that, we might have a different discourse around the challenge in agriculture. We are out of time but if Dr. Moran or Dr. Dunford wish to comment, they are more than welcome to do so.

Dr. Brendan Dunford: I thank the committee for inviting us and giving us a platform. Sometimes it is a fairly lonely furrow, so it is good to know we are supported and that members

had the patience and interest to listen to us all day. My parting shot would be that climate is obviously a huge emergency, but let us also think about the food and nutrition emergencies as well. It is all part of the same problem and the solution is the same. To my mind, farmers are the solution if we invest in them properly. I thank the Chairman.

Dr. James Moran: I thank committee members for the opportunity to discuss this matter with them. We might have been a bit more honest than we planned or forthright in what we said, but from the session today I think there is hope that solutions can be found. As Dr. Dunford said, farmers, as the managers of our land, are the solution if we all work in partnership, together with clear goals for where we want to get to as a food island that is resilient to the crises coming down the road.

Chairman: The witnesses were very welcome today and their contributions are really greatly valued. Perhaps I would say this but I consider this committee to be very progressive and engaged. It really does want to figure out the problems. It is very hard-working and has been since its members got together 14 or 15 months ago. All members, Government and Opposition, have really been fantastic. In recent sessions we have had non-members of the committee engaging as well because it has been heard across the Houses that we are trying to figure out the way forward here. This session is going to help us in the production of our report. We had two previous sessions earlier in the year. For all kinds of reasons the third session was delayed until today but that might have been quite appropriate because the issue is more topical now with respect to what is in the news including carbon budgets, climate action plans and so on. Indeed there is also the CAP strategic plan mentioned by Dr. Moran. It is appropriate we had the session today. It is really going to help us in the production of our report. The secretariat is under pressure now with a few reports but this is certainly one we look forward to putting together. We will issue recommendations and then put them before the Government.

I thank the witnesses again. I also thank members and, indeed, non-members for their contributions.

The joint committee adjourned at 6.13 p.m. until Tuesday, 16 November 2021 at 12 noon.