55th IALB Conference
5th EUFRAS Meeting

19 – 23 June 2016,
University of Limerick, Ireland

Innovation Support for a Diverse Agriculture

ialb Internationale Akademie land- und hauswirtschaftlicher Beraterinnen und Berater

EUFRAS EUROPEAN FORUM FOR AGRICULTURAL AND RURAL ADVISORY SERVICES

teagasc Agriculture and Food Development Authority

DAIRYMASTER

meetinireland.com

Fáilte Ireland National Tourism Development Authority

EUFRAS/IALB Conference 2016

Innovation Support for a Diverse Agriculture

19th – 23rd June 2016

University of Limerick, Limerick, Ireland

ialb

EUFRAS EUROPEAN FORUM FOR AGRICULTURAL AND RURAL ADVISORY SERVICES

teagasc Agriculture and Food Development Authority

DAIRYMASTER

meetinireland.com

Fáilte Ireland National Tourism Development Authority

Contents

Schedule of Events

Date	Time	Event	Location
Sunday 19 June 2016	14.00-17.30	Registration	1st Floor, Main Building
	14.30 & 14.45	City Walking Tour (Two Groups)	Meet at the statue of Richard Harris, Bedford Row, off Henry Street, City Centre. Transfer coach available from UL Campus
	14.00-16.30	IALB Committee Meeting	Board Room, Plassey House
	18.00-19.30	Welcome Evening	UL Campus
Monday 20 June 2016	8.30-17.30	Partners' Programme	***Offsite*** Pickup/return at Carpark , UL Campus
	8.15-9.00	Registration	Main Building
	9.00-15.30	Plenary Session	Jean Monnet Theatre Main Building
	13.00-14.00	Lunch	Atrium, Foundation /Concert Hall Building.
	15.30-17.30	Networking Session/Afternoon Break	Atrium, Foundation/Concert Hall Building.
	19.00-22.30	Conference Banquet	***The Castletroy Park Hotel*** 10/15 minute walk from UL Campus
Tuesday 21 June 2016	08.00-18.00?	Technical Excursions	***Offsite*** Pickup/return from Car park UL Campus
Wednesday 22 June 2016	8.30-10.00	Workshops 1-8	Classrooms Main Building, UL Campus
	10.30-12.00	Workshops 1-8	Classrooms Main Building, UL Campus
	12.00-13.00	Plenary Summary	Jean Monnet Theatre – Main Building
	13.00-14.00	Lunch	Atrium, Foundation /Concert Hall Building
	14.00-15.30	IALB General Assembly	Jean Monnet Theatre, Main Building
	14.00-16.30	EUFRAS Meeting	Classroom C160, Main Building
Thursday 23 June 2016	7.30-9.15	IALB Committee Meeting	Board Room, Plassey House
	9.30-18.00	Supplementary Excursion Tour of Kerry	***Offsite*** Pickup/return from Carpark UL Campus
	8.30-15.30	CECRA Fast Track Meeting	Classroom C1060, Main Building UL Campus

Monday 20th June

Hour	Title	Speaker(s)
09:00	EU Commission Speaker	Inge Van Oost
09:20	Welcome by IALB, EUFRAS and TEAGASC	Prof Gerry Boyle Dr Tom Kelly Mr Ulrich Ryser
09:45	Irish Agriculture, its Contribution to the Economy and Society a Short History	Mr Declan O'Brien
10.10	Irish Advisory Services contributing to Innovation Support	**Chair:Mr John Donworth** Ms Aileen Walsh – Teagasc Advisor Mr Fiachra Liston, Farmer Mr Breian Carroll, Agricultural Consultants Association (ACA)
10.50	Discussion	
11.00	Break for refreshment	
11.30	The farm advisor influencing decision making	Dr Áine Macken-Walsh, Teagasc
12.00	Rural Development through Diversification (Panel Discussion)	**Chair: Mr Barry Caslin** Dr Bill Callanan - DAFM Ms Dóirín Graham - Chief Executive, Clare Local Development Company Ms Inge Van Oost - DG AGRI Mr David Lamb - ENRD
13.00	Buffet Lunch	
14.00	Harnessing future technologies through collaboration (discussion forum)	**Chair: Dr Jim Kinsella** Dr Frank O'Mara, Finola McCoy, Sean McCarthy
15.00	General Discussion	
15.30 - 18:00	Break for refreshment Networking and Exploration of Interests	
19:00	Conference Banquet	

Montag 20 Juni

Uhrzeit	Titel	Sprecher
09:00	EU Komissions-Sprecher	Ms Inge Van Oost
09:20	Begrüßung durch die IALB, EUFRAS und TEAGASC	Prof. Gerry Boyle Dr Tom Kelly Mr Ulrich Ryser
09:45	Irische Landwirtschaft, ihr Beitrag zur Wirtschaft und Gesellschaft – eine kurze Geschichte	Mr Declan O'Brien
10.10	Irische Beratungsdienste und ihr Breitag zur Unterstützung von Neuerungen	**Führung: Mr John Donworth** Ms Aileen Walsh – Teagasc Advisor Mr Fiachra Liston, Landwirt Mr Breian Carroll, Agricultural Consultants Association (ACA)
10.50	Diskussion	
11.00	Erholungspause	
11.30	Farm-Berater als Einfluss bei der Entscheidungsfindung	Dr Áine Macken-Walsh, Teagasc
12.00	Entwicklung der ländlichen Gebiete durch Erweiterung (Forumsdiskussion)	**Führung: Mr Barry Caslin** Dr Bill Callanan - DAFM Ms Dóirín Graham - Geschäftsführer, Clare Local Development Company Ms Inge Van Oost - DG AGRI Mr David Lamb - ENRD
13.00	Mittagsbuffet	
14.00	Nutzbarmachung zukünftige Technologien durch Zusammenarbeit (Forumsdiskussion)	**Führung: Dr Jim Kinsella** Dr Frank O'Mara, Finola McCoy, Sean McCarthy
15.00	Hauptdiskussion	
15.30 - 18:00	Erholungspause Networking und Ergründung von Interessen	
19:00	Konferenz-Bankett	

Excursions – Tuesday 21th June

Meet in the University of Limerick carpark for registration at 07:45

Coaches depart for excursions at 08:00 sharp

	Excursion	Exkursion
1	Dairy	Milchvieh
2	Beef	Rindfleisch
3	Environmental	Umwelt
5	Forestry/Renewable Energy& Education	Forst, Erneuerbare Energien und Ausbildung
6	Artisan Food	Artisan Food
8	Rural Tourism and Diversification	Ländlicher Tourismus

Introduction and Welcome

Welcome from Teagasc – Professor Gerry Boyle, Director

As Director of Teagasc it gives me great pleasure to welcome all of the delegates from IALB, EUFRAS, Teagasc and ACA to this event. It is a great opportunity for Teagasc advisors to engage with you and share experiences. In Ireland we are fortunate to have a strong agriculture knowledge and innovation support system. Fundamental to this is Teagasc, which combines an integrated research, advisory and education service for a large part of the bio-economy. This is no accident, as agricultural exports make up a huge share of the economy and investment in competitive and sustainable agriculture is a priority of the Irish State.

The primary asset that Teagasc has is its people and the relationships that permeate the wider agriculture and food industry. Nowhere is this more evident than in the regional advisory service. Teagasc advisors implement a comprehensive annual programme of activities and use a wide range of tools to inform and influence farmers. They have adopted best practice methods for improving farmers' adoption of technology.

The challenges and opportunities which face family farming today require a strong and co-ordinated support system which closes the gap between proven best practice and general practice across many key technologies and practices affecting the viability, profitability and sustainability of their businesses. The agreed national industry targets set out in Food Harvest 2020 and its successor Food Wise 2025 provide the development framework for all the main bio-economy sectors to advance their contribution to the economy through co-ordinated productivity and sustainability supports.

The Teagasc advisory service has been, and continues to be, targeted at supporting innovation and development. We have achieved greater efficiency in recent years with reduced staffing (45%) while maintaining services and client numbers. We provide a quality service to over 40,000 farm families. We prioritise education and business and technology services over rural development and environmental schemes. Advisors have leveraged their relationship with farmers to innovate in the provision of services through Joint Industry Programmes and outsourced services. We believe that much more can be gained through co-operation than from competition. This is reflected in our four strategic pathways for the advisory service.
http://www.teagasc.ie/publications/2015/3621/Strategic_Pathways_for_the_Teagasc_Agricultural_Advisory_Service_2015-2020.pdf

You will hear later today about the context, activities and strategies that shape our way of working. The challenges and opportunities of new technologies are identified in the Teagasc Foresight 2035 exercise.
http://www.teagasc.ie/publications/2016/3897/Teagasc-Technology-Foresight-Report-2035.pdf

I am delighted that we have the opportunity to participate as an organisation in the CECRA programme. I believe that this is the gold standard of soft skills training and will be required to give professional support for innovation to the different and diverse famers and growers that make up our industry. I am also happy to see advisors from other organisations and countries participating in exchange programmes and my thanks to all those involved in these initiatives. To conclude, I would like to wish you all a very successful and productive event and hope you enjoy your time in Ireland.

Welcome from EUFRAS – Professor Tom Kelly, Teagasc Chairman of EUFRAS

I am delighted to welcome everyone here today to this event. I am also grateful to the Teagasc Director, the Teagasc Authority and the staff of Teagasc for their support in hosting and organising the event.

Some Irish people were fortunate to participate in Croatia in 2014 and Switzerland last year; we have gained some ideas, so that this conference lives up to the expectations of you, our visitors. However with a good team involved from the start, a lot of planning, promotion and organising we are finally here. The guidance of the IALB was simple, you wanted to know the context and the experience of Irish advisors, to see Irish farms and advisors, learn from them and share similar experiences. We hope to deliver on your expectations.

From a EUFRAS perspective this is the major opportunity to promote EUFRAS and the good work being done by members. As a young and growing organisation it needs some care and attention and now with an expanded board it will be better positioned to expand its activities and meet its objectives. With more than 31 member organisations from 24 countries, EUFRAS is well established and has a secure future. This event fits in well allowing a sharing of experiences of knowledge and the development of contact points and much more importantly it helps to build relationships between advisors and their organisations.

I wish to thank all of you who have come to this event. Your presence is appreciated and your participation and engagement is highly valued, this will be the measure of success.

Welcome from IALB - Mr Ulrich Ryser, Agridea, President IALB

Zur 55. Jahrestagung der Internationalen Akademie land- und hauswirtschaftlicher Beraterinnen und Berater (IALB) begrüsse ich Sie herzlich in Limerick. Die desjährige Tagung wird ausgerichtet durch TEAGASC – Agriculture and Food Development Authority. Also eine Premiere, denn es ist eine EUFRAS-Organisation, die die Verantwortung für unsere IALB-Tagung übernommen hat. Ein herzliches Dankeschön für das grosse Engagement.

Das Thema der Tagung lautet: « Innovation Support for a Productive and Sustainable Agriculture – 'Supporting the diversity and resilience of land, people and production systems'». Wir erhalten Einblick in eine Landwirtschaft, die viele Facetten umfasst, von der weltbekannten graslandbasierten Milch- und Rindfleischproduktion bis hin zu Agrotourismus. Eines zeichnet die Landwirtschaft Irlands besonders aus: Sie liefert einen grossen Beitrag ans Volkseinkommen und ist weitgehend auf den Export ausgerichtet. Die landwirtschaftliche Beratung ist entsprechend aufgestellt. Unsere Tagung bietet somit für jede/jeden die Gelegenheit, etwas für den eigenen Berufsalltag zu lernen.

Die IALB ist ein Netzwerk für Informations- und Erfahrungsaustausch über Ländergrenzen hinweg. Unsere Veranstaltungen finden in verschiedenen Regionen unseres Verbandsgebietes statt, um die Eindrücke vor Ort aufzunehmen. Auf unseren jährlichen Tagungen erhalten wir Einblick in die Arbeit der ausrichtenden Organisation und in die Beratungsangebote der besuchten Region. Wir erfahren, mit welchen Ansätzen, Methoden und Vorgehensweisen die Beratung arbeitet und diskutieren, wie die Bauernfamilien noch besser unterstützt werden können.

An dieser Stelle danke ich herzlich TEAGASC, den Förderern und Sponsoren für die Unterstützung sowie dem Vorbereitungsteam der IALB-Tagung 2016 für die Organisation.

Und nun, liebe IALB-Mitglieder und Interessierte, profitieren Sie von der einmaligen Gelegenheit fundierte Einblicke in die Landwirtschaft Irlands zu erhalten. Geniessen Sie Limerick, knüpfen Sie Kontakte und tauschen Sie Erfahrungen aus. Lernen Sie Land und Leute Irlands kennen.
Ulrich Ryser, Präsident IALB

I would like to warmly welcome you to Limerick, for the 55th Annual meeting of the International Academy of agricultural and rural consultants and advisors (IALB). The 2016 Conference has been organised by TEAGASC – the Irish Agriculture and Food Development Authority. So this is a first, because Teagasc is a EUFRAS organization, which has taken on the responsibility for organising this important IALB meeting. Thank you very much for the great commitment.

In the theme of the Conference: *Innovation support for a productive and sustainable agriculture - 'supporting the diversity and resilience of land, people and production systems*'. We get insight into a farming, which includes many facets of the world-famous grassland based milk and beef production and strong agritourism. Two particular features distinguish agriculture in Ireland: It provides a major contribution to national income and is largely geared towards exports. The agricultural extension is appropriately positioned. Thus, our meeting offers the opportunity to learn something for your own professional everyday life.

The IALB is a network for information and exchange of experience across national borders. Our events take place in various regions of our Federation territory, to record the impressions on the spot. At our annual meetings we get an insight into the work of the organizing organization and the advisory services of the visited region. We will learn what approaches, methods, and practices work and discuss how farming families can be better supported.

At this point, I warmly thank TEAGASC, the promoters and sponsors for supporting the preparation team of IALB meeting 2016.

And now, I invite all IALB members, conference participants and interested parties to enjoy the unique opportunity to get an in-depth insight into Ireland's agriculture. Enjoy Limerick, establish contacts and exchange experiences. Get to know the country and people of Ireland better.

Sponsors

teagasc
Agriculture and Food Development Authority

DAIRYMASTER

Fáilte Ireland
National Tourism Development Authority

meetinireland.com

frs network

herdwatch

ACA
Agricultural Consultants Association

Speakers

Pablo Asensio

Born Spanish in 1974 Pablo Asensio grew up in Germany. He holds a diploma in agricultural engineering (Technische Universität München 1999) and a postgraduate degree in adult education (Munich School of Philosophy 2008). He is a consultant, teacher, trainer, agricultural economist, environmental expert and civil servant. German is his native language and he also speaks Spanish, French and English and some Russian. Pablo provides socio-economic advice to farmers in the rural district Landshut and teaches young farmers at the agricultural school Landshut. Furthermore he mediates agricultural interests in flood protection projects along the river Danube in Lower Bavaria. He is a member of the international network of agricultural consultants IALB and is an elected member on the EUFRAS board. From 2007 to 2013 he has been working mainly as a skills trainer for the Bavarian agricultural administration at the Leadership and Management Academy in Landshut with a focus on professional training for the advisory service. He lectures in Extension Methodology at the University of Applied Sciences Weihenstephan-Triesdorf.

Prof. Gerry Boyle

Professor Gerry Boyle was appointed Director of Teagasc – the Agricultural and Food Development Authority for Ireland – on 1st October 2007. Teagasc conducts research on agriculture and food; provides extension services to Irish agriculture. It is the sole provider of vocational education programmes to the sector and is also a provider of courses in higher education. Gerry is Emeritus Professor of Economics at the National University of Ireland (NUI), Maynooth and former Head of its Economic Department. He also holds an Adjunct Professorship at the University of Missouri, Columbia. He was previously a Senior Research Officer with the Agricultural Institute and an Economist with the Central Bank of Ireland. From 1995-1997 he served as Economic Advisor to the Taoiseach (Irish Prime Minister), Mr John Bruton T.D.. Prior to his position at Teagasc he was a Senior Associate with Farrell Grant Sparks Consulting and a Senior International Consultant, specialising in agricultural policy, with the World Bank on a number of their projects in Eastern Europe and Central Asia, including Belarus, Moldova, Russia and Tajikistan. Professor Boyle is a past president of the Irish Economic Association and of the Agricultural Economics Society of Ireland. He has also served as editor of the Economic and Social Review, the European Review of Agricultural Economics and the Irish Journal of Agricultural Economics and Rural Sociology. Professor Boyle has published an extensive range of papers and reports on public policy issues in national and EU media. He is a member of the Royal Irish Academy (M.R.I.A.).

Bill Callanan

Chief Agricultural Inspector with the Department (Ministry) of Agriculture, Food and the Marine. He leads the Agricultural Inspectorate within the Department, a grouping of

approximately 200 professionals across a range of disciplines and fields of expertise and who are charged with the provision of scientific advice to the Minister, the Department as well as the application of science across a number of areas within the Agri-food sectors. He has direct responsibility for a number of divisional work areas including animal breeding, pesticides, research, arable cropping, horticulture, feed and fertilisers and the environmental areas of water and bio-diversity.

Breian Carroll

Breian Carroll is the Managing Director and Senior Agronomist in Carroll Consultancy, an Agricultural Consultancy firm established in 2001. He has a Bachelor of Agricultural Science degree from University College Dublin, a Certificate in Auctioneering and Estate Management from the Athlone Institute of Technology and a Diploma in Strategy and Innovation from the IMI. He is currently completing a Masters of Business.
Carroll Consultancy provides professional farm advisory services to Irish farmers in addition to strategic management consultancy to agri-businesses. Its clients include farmers, landowners, agri-businesses, legal firms and local authorities.
Breian was elected the youngest President of the Agricultural Consultants Association (ACA) in July 2007 for a three year period and was appointed in September 2010 to the position of General Secretary of the ACA for a two year period. He is a past board member of the Farm Safety Partnership Advisory Committee with the Health and Safety Authority (HSA) and is a current member of the Skillnets Funding Steering Committee with the Irish Small and Medium Enterprises Association (ISME). He was a member of the judging panel of the Agri-Business Awards 2015. He played football and hurling for UCD, county and club. He was awarded a Nicky Rackard All Star for hurling in 2006. Outside of work he still keeps involved in many sports and is a part time beef farmer with an interest in horses also.

Barry Caslin

Barry Caslin is Teagasc Bioenergy and Rural Development Specialist. Prior to joining the specialist service Barry worked for eight years in the advisory service with Teagasc and prior to that worked with Glanbia in Germany in the meat industry. Barry has presented a local radio programme on Shannonside Northern Sound for four years for Macra na Feirme on youth related issues and on Ocean FM for three years on behalf of Teagasc where he has presented an agricultural program. Barry works in the Crops Environment and Land Use Programme in Teagasc together with the Rural Economy and Development Programme. He has an hons degree in Agricultural Science from UCD and a Masters in Environmental Protection from Sligo IT.

Thomas Curran

Thomas Curran is a Farm Structures Specialist in Teagasc. He spent the previous 15 years working directly with farmers as a Business & Technology Advisor. Since 2013, he has worked as

an expert specialist on Collaborative Farming. Thomas is based in the Teagasc Moorepark campus and is part of the Farm Management Team. His work includes the development of new forms of collaboration, the continuous development of existing models of collaboration and the promotion of all collaborative arrangements including farm partnerships, share farming, contract rearing of dairy heifers, dairy cow leasing, long-term land leasing, producer groups and Limited Company formation.

John Donworth

John Donworth qualified with a degree in agriculture in 1977 from UCD. He worked most of his career as an advisor and dairy specialist. He managed and supported the Teagasc-Dairygold joint industry programme. In 2012 he was appointed regional manager for the Kerry/Limerick region. John is a skilled discussion group facilitator and an important resource person in Teagasc. Over a 15 year period John maintained a weekly dairy column in a national farming paper and is a regular contributor of technical material in the national farming media.

Dóirín Graham

Dóirín is CEO of Clare Local Development Company, a community led local development organisation which was established in 2009 to deliver a range of rural development (LEADER), social inclusion (SICAP), training, community development and enterprise supports to communities in Co Clare. Before 2009, Doirin was CEO of Rural Resource Development, the LEADER LAG for Co. Clare, having started out as Projects Officer with Clare LEADER in 1993. Dóirín studied Agricultural Science in UCD which she followed with a Master Degree in Rural Development.

Michael Gottstein

Michael Gottstein works as a sheep specialist and Head of the Sheep Knowledge Transfer Department for Teagasc. Michael, whose family originate from Germany is a native German speaker and undertook his B. Agr. Sc. (Animal & Crop Production) in University College Dublin, graduating in 1995. He was awarded the McGuckian Gold Medal for graduating in first place in his class. In 1997 Michael completed his Master Degree (animal nutrition) by research and, after a few years in private practice, he joined Teagasc as a dairy advisor in late 2000. Michael was appointed as a drystock specialist in 2003 during which time he completed a Graduate Diploma in Farm Financial Management in Waterford Institute of Technology. He was appointed as a sheep specialist in 2007 and was appointed as the Teagasc Head of Sheep Programme in December 2012.

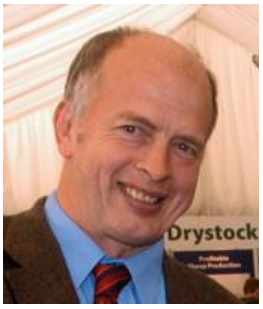
Hanna Green

Hannelore Green has been working as an agriculture-technical teacher and advisor in the District Office Landkreis Breisgau-Hochschwarzwald, Department of Agriculture. Since 1996 she has been informing and consulting families on farms in questions of diversification from construction and equipment to marketing draft and economic efficiency calculations. Additional qualified as a coach in agriculture, since 2015 through CECRA certification." Only if I know what I do, can act the way I want".

Carola Ketelhodt

Carola Ketelhodt is Head of the EIP Innovation Office in Schleswig-Holstein. The EIP Innovation Office is the regional EIP Agri support unit and has its domicile at the Chamber of Agricultural in Rendsburg. Carola studied agricultural economics at Christian-Albrechts-University in Kiel. In July 2014 she became head of the EIP Innovation Office in Schleswig-Holstein on behalf of the Ministry. Her responsibilities are the support of the EIP process in SH and the support of the Operational Groups and their innovation projects for more sustainability and efficiency in the agricultural sector. This includes information exchange, knowledge transfer, networking and active public relations within the new EIP Agricultural Network in Europe.

Dr Tom Kelly



Tom Kelly is Director of Knowledge Transfer in Teagasc; he leads the Agricultural Education and Farm Advisory Services in Teagasc. Teagasc advisory programmes are contracted to service 45,000 farmers and the vocational education programme supports the equivalent of 3,050 full time students annually. Teagasc is an independent state agency with responsibility for the development of agriculture and food in Ireland.
Tom has a primary degree in agricultural science (1977) and a research based Masters and PhD from the National University of Ireland, University College Dublin.
Tom completed a corporate MBA at the University of Limerick. He was recently appointed Adjunct Associate Professor of Agriculture Extension by University College Dublin.
Tom is president/chairman of the recently formed EUFRAS (European Forum for Agricultural and Rural Advisory Services).

Dr Jim Kinsella

Jim Kinsella is a Senior Lecturer in the School of Agriculture & Food Science, University College Dublin (UCD) where he has been Section Head for Agribusiness & Rural Development since 2011. He began his career as a volunteer worker with an international NGO where he worked as a humanitarian worker in Ethiopia and Somalia and as an agricultural development worker in Tanzania and Kenya. On

returning to Ireland in the early '90s he joined University College Dublin where he completed his PhD on farm household decision making processes. Since joining UCD in 1995 he has lectured on: sustainable agriculture and rural development; communications; agricultural extension; social farming; project planning and management; and strategies for development. He has a long association with establishment, co-ordination and delivery of taught masters' programmes including: the MSc Programme in Rural Development and MSc in Sustainable Agriculture and Rural Development; and more recently the MSc in Agricultural Innovation Support and MSc in Agricultural Extension and Innovation Programmes which is delivered in collaboration with Teagasc.
His research work encompasses: rural livelihoods analysis; rural development policy impact; agricultural extension effectiveness; agricultural innovation; piloting of social farming; and measuring social capital. He currently supervises six PhD and eight MSc studies related to on-farm innovation. He lives with his family on a 30ha farm in south Kilkenny and remains active in his local community through sports coaching and voluntary organisations.

Michael Kuegler

Michael Kuegler: born 1954 in Ravensburg, Germany, studied Agriculture at Hohenheim University. Since 2004 Michael has worked in the Chambers of Agriculture, EU-platform, Head of Brussels Office, Participation in EU-EC-working groups and research projects, head of EU contact point for IALB, EUFRAS and GFRAS, Board-member of EUFRAS (European Platform of agricultural and rural advisory services). Prior to this he worked in the Chamber of Agriculture in Lower Saxony, Head of EU-office in Oldenburg, Germany, GTZ-Project CMR (centres des métiers ruraux), Deputy Head of mission, Abidjan, Ivory Coast, development of non-formal education/ training systems in rural areas, Chamber of Agriculture in Lower Saxony, Germany, Head of organic farming and non-food section and Federal State of Baden-Württemberg, Germany, head of rural development section at several district offices and teacher at framer schools.

Andis Kursitis

Andis Kursitis was born in Latvia in 1981. He graduated from the Latvian University of Agriculture with a Master Degree in Society and Organisation Administration Sociology and a BA, Diploma in Economics (Law sciences). Andrew is Head of the EUFRAS Centre Office, CECRA Certification Systems in Europe. Andis works as Head of the Training Department at the Latvian Rural Advisory and Training Centre and lectures second, third and fourth year students in the Faculty of Social Sciences at the Latvian University of Agriculture.

David Lamb

David is a senior expert for the **European Network for Rural Development (ENRD) Contact Point** based in Brussels, leading the work on knowledge development and the Thematic Groups on 'Smart and Competitive Rural Areas' and 'Promoting the Transition to a Green Economy' in 2015-16. He formerly led the Food & Drink Team within Scotland's Rural College (SRUC) managing the advisory activity. He helped create and then managed the Think Local programme - a local food and

drink development programme for the Scottish Government until 2014. David has broad experience of working within rural development in Scotland and on international projects. He has extensive UK and international experience in training, consultancy and regional strategy across the diverse elements of the rural sector. David has delivered projects in Estonia, France, Finland, Kosovo, Turkey, Russia, the United Arab Emirates and across the UK.

Dr Doris Läpple

Dr Doris Läpple is a lecturer in Agricultural and Food Economics at UCD. Doris received a Dipl.-Ing. Agr. (Univ.) from the Technical University Munich-Weihenstephan and a PhD in Economics from the National University of Ireland, Galway (NUIG). During her PhD, she spent a semester as a Visiting Scholar at the Department of Agricultural and Resource Economics at the University of California, Davis. Prior to taking up the lectureship position at UCD, Doris was a Postdoctoral Researcher at NUIG funded by the Irish Research Council (IRC). Doris recently spent a semester as visiting faculty at the Agricultural and Applied Department at the University of Wisconsin-Madison.
Doris research interest is in agricultural economics focusing mainly on microeconomics of farm businesses with a special interest in the economic evaluation of agricultural extension programmes. Her research is published in leading international journals such as European Review of Agricultural Economics, Applied Economic Perspectives and Policy, Food Policy and the Journal of Agricultural Economics.

Fiachra Liston

Fiachra's farms in partnership with his father Aidan, at Ballyculleen, Croom, Co Limerick. Fiachra is married to Niamh and they have three children.
In 2015 Fiachra milked, on average, 243 cows. He also reared 85 0-1 year old replacements and 65 1-2 year olds. Owned land in 2015 amounted to 97 hectares with a further 28 hectares leased.
Overall farm stocking rate in 2015 was 2.50 LU/ha with a milking block stocking rate of 2.93. Cows produced, on average 447 kg of milk solids in 2015.
Fiachra's farming philosophy is to keep the operation as simple as possible, grow and utilise as much grass as possible and use the latest technology to help him achieve this.

Dr Áine Macken-Walsh

Áine Macken-Walsh graduated with an MA from the European Inter-University Centre for Human Rights and Democratisation and a PhD in sociology from the National University of Ireland, Galway. Her MA and PhD theses focused on agriculture, governance and rural development policy in the context of EU enlargement. Áine joined Teagasc in 2006 where she has developed a research programme focused on agricultural extension. Supporting advisory interactions with farmers is the main objective of her research. Currently, she is leading projects focused on advisory support at farm-

level for the prevention and control of Johne's disease; the uptake of Joint Farming Ventures (JFVs); and the implementation of grassland management practices.

Seán McCarthy

Services Manager with Kerry Agribusiness, managing a range of services to 3,500 suppliers to improve the viability of their businesses and secure a supply of quality milk for manufacturing. Just recently returned from New Zealand, having spent five and a half years working with DairyNZ in both the extension and developments teams. Previously worked as a dairy advisor with Teagasc and completed a PhD in Moorepark. Raised on a dairy farm in Co. Kerry and still involved in the family business there.

Finola McCoy

Finola graduated from University College Dublin in 1997 with a degree in veterinary medicine. She spent the following 10 years working in various mixed practices in Ireland, UK and New Zealand, and during this time developed a keen interest in the dairy industry. Working with large dairy herds in New Zealand provided an invaluable insight into some of the challenges associated with herd expansion and disease control. While working in practice she undertook a Masters in Science in Livestock Health and Production through the University of London, which she completed in 2006.
Finola joined the Teagasc research team in Moorepark in 2008, as the mastitis research officer. She co-ordinated and managed a pilot study evaluating a team-based approach to mastitis control, as well as collaborating on other research projects. In 2011 she joined Animal Health Ireland as Programme Manager for CellCheck, the AHI-led mastitis control programme. As a 2014 Nuffield scholar, she explored the benefits, challenges and opportunities for developing cross-professional service provider networks, with a study entitled “Ní neart go chur le chéile-Building Strong Professional Networks”.

James McDonnell

James McDonnell graduated from University College Dublin in 1997 with a Degree in Agriculture. In 1998 he joined Teagasc as a REPS advisor in the Burren region in North Clare. In 2000 he moved into Dairy advisory work, leading the Teagasc & Golden Vale joint programme in Co. Clare. James also worked in counties Cork and Limerick as a Dairy advisor, during this time he completed a Post Graduate diploma in Farm Management in Waterford Institute of Technology in 2005. In 2007 he moved into the role of Organic Specialist for the Leinster region. In 2011 he moved into his current role a Financial Specialist in the Farm Management unit in Teagasc.

Mark Moore

Mark Moore holds a Bachelor of Agricultural Science degree from University College Dublin; a Master Degree in Project Management and a Diploma in Strategy, Innovation, and Change from the UCD Michael Smurfit Business School; and a Teagasc/IMI diploma in leadership. He has worked as a front line tillage advisor for ADAS in the United Kingdom. He also worked for many years as editor of the Furrow editions for John Deere in Mannheim, Germany. In 2007 he returned to Ireland as Publications Manager for Teagasc. Recent special projects which he has led include an innovative series of Manuals (Beef, Dairy, Drainage) for farmers, and a course in Business Strategy for farmers which he has developed and delivered in partnership with the UCD Michael Smurfit Business School and Teagasc colleagues. He has supervised Masters Degree students in the area of customer targeting.

Declan O'Brien

Declan O'Brien is doing a PhD in modern history at Mary Immaculate College in Limerick. His research examines the switch from live exports to beef processing in the period 1965 to 1985, and the impact of this power shift on government policy, the farm organisations and Ireland's farmers. Declan worked as an agricultural journalist for 20 years, and was farming editor with the Irish Independent from 2008 to 2015. He has also worked with the Irish Farmers Journal and the RTE rural affairs programme Ear To The Ground. A native of Kildimo, Co Limerick, he now lives in Kilkenny.

Dr Tom O'Dwyer

Dr. Tom O'Dwyer is the Teagasc Head of Dairy Knowledge Transfer based in the Teagasc AGRI Centre, Moorepark, Fermoy, Co. Cork since June 2010. Tom previously held positions of Regional Manager and Dairy Specialist within Teagasc. His interests include advisory methods, facilitation skills, self-leadership and empowerment.

Dr Frank O'Mara

Frank is the Director of Research at Teagasc. He has responsibility for leading Teagasc's research programme, which has an annual budget of over €65 million, with over 800 researchers, support staff and graduate students. It covers all aspects of agri-food research from soils to consumers. His role involves liaison with stakeholders, policy-makers and other agencies in setting priorities, identifying opportunities and securing resources. He also contributes to various national and EU committees and bodies, e.g. The Standing Committee on Agricultural Research (SCAR), the Governing Board of the EU FACCE (Food Security and Climate Change) Joint Programme Initiative, the National Advisory Group on Agri-Food Research and Innovation (NAFRI), the (Irish) High Level Group on Horizon 2020, and the (Research) Prioritisation Action Group.

He is also a member of international scientific advisory boards for AgResearch in New Zealand, SRUC in Scotland and for the New Zealand Agricultural Greenhouse Gas Research Centre. He was previously Associate Professor of Animal

Nutrition at University College Dublin and has researched many aspects of animal nutrition, feed evaluation, animal production, and the interaction of animal nutrition and the environment, particularly greenhouse gas emissions from animal production systems.

Peter Paree

Programme Leader 1Health and Smart Farming. He has experience as generalist in Agrobiodiversity, Soil Conservation, Precision Agriculture (member of EIP Focusgroup), ICT, Plant protection, Human/Animal health, Communication to farmers. Competences in project management, networking. As a farmer's son he followed his studies in Wageningen. He started in the Socio Economic Advisory service in a farmer's organization. Since 1990 he has developed projects in new areas for farmers, such as Precision Agriculture, New Economic Opportunities, and Environmental management. He was founder of the ZLTO project unit in 1993 that built out to 35 people 20 years later. This is now incorporated in the ZLTO department of Craftmanship & Entrepreneurship.

George Ramsbottom

George Ramsbottom has worked for over two decades in agricultural knowledge transfer. He has developed an extensive network of contacts among personnel in the Irish dairy industry and agri-banking sectors. He has delivered a range of important projects in extension, dairy reproductive and genetic improvement and financial management. George is based at Teagasc Oak Park from where he works as part of Teagasc's Dairy Knowledge Transfer team. His role is to promote the objectives of the dairy business programme through support of dairy advisors, leading elements of the programme and supporting other members of the specialist team in its delivery.

Prof Bruno Häller

Bern University of Applied Sciences BFH
School of Agricultural, Forest and Food Sciences HAFL

Bruno has an accomplished career and is a competent expert in Extension methodology, vocational training and adult education with many years of extension and teaching experience. He has a broad knowledge base in agronomy including farm economics, marketing, agricultural policy, Swiss land and lease rights, animal husbandry, crop production, organic farming sustainable land management. Bruno has experience in coaching and mediation in rural areas, facilitation of workshops and training sessions and research in the field of knowledge transfer in extension programmes.
Bruno is currently Professor at the Teaching and Advising Unit at the Bern University of Applied Sciences, School of Agriculture, Forest and Food Sciences, Zollikofen Switzerland and has previously worked as Head of the Extension Service of the Agriculutral Institute Grangeneuve, Fribourg. Prior to this he was Scientific Collaborator at the Swiss Federal Institute of Technology and Teacher at the agricultural school of Giswil, Obwalden.

Ulrich Ryser

AGRIDEA is considered to be the Agricultural Extension Centre of Switzerland. Encouraging the transfer of knowledge and experience among people from the practice, extension services, research, administration services or politics is the core business of the company. The cantons and about forty organisations operating in agriculture and the rural area are the owners.

Ulrich Ryser studied at the Swiss engineering school for agriculture (specialised in agrarian economy and management), after that he did an Executive MBA in business engineering at the university of St. Galle.
Before he joined AGRIDEA, he worked as an agricultural advisor and trustee for the Swiss Farmers Federation. His main fields of activity were valuation of real-estate property, business administration, compensation issues, handing over of farms, legal advice (especially land law, lease right, family law and law of special planning). Beside this he was filling different management positions like vice head of department, member of the expanded managing board of the Swiss Farmers Federation as well as authorized signatory.

Inge Van Oost

Inge Van Oost is policy officer at the European Commission, Directorate General Agriculture and Rural Development (DG AGRI). She has been setting-up and is now supporting the implementation of the European Innovation Partnership "Agricultural Productivity and Sustainability" (EIP-AGRI), in particular as regards cross-cutting aspects and rural development. As member of the DG AGRI Taskforce "Research and Innovation" she was instrumental in shaping DG AGRI's research and innovation approach and Horizon 2020 work programmes, and developed the new concepts "multi-actor approach" and "thematic networks". In her former post at the Commission she was policy officer in the Direct Support Unit and the Cross Compliance Unit, responsible for cross-compliance, the Farm Advisory System and interlinking with the Rural Development policy. Before working at the Commission Inge Van Oost was coordinator of the demonstration projects at the Directorate-General for Agriculture and Horticulture of the Flemish Region. There she drafted rural development measures and designed the farm advisory system. In the meantime she was evaluator of many agricultural research projects and member of diverse selection committees. In the former federal Belgian Administration for Agriculture she served the Secretariat-General as coordinator of the Horticultural Chain, dealing with chain management, food quality, traceability and safety, sustainability of production methods, communication with consumers and much more. Before joining the administration, she worked as a farm advisor, and after a while as coordinator of the advisory team. Based in an applied research institute, the team not only advised farmers, but also designed and implemented experiments and on-farm demonstration projects.

Aileen Walsh

Aileen Walsh holds a B.Agr.Sc,University College Dublin and Post graduate Diploma in Farm Financial management , Waterford Institute of Technology. She currently works as a Dairy Advisor In East Limerick in the Mid-West region of Ireland .Previously, she worked in South Tipperary in a similar role. She works with farmers on a one to one basis and in groups. Her areas of expertise are in financial planning, farm infrastructure planning, animal nutrition, environmental compliance and scheme application. She has over 20 years experience working with dairy farmers in Ireland

The Agricultural European Innovation Partnership and the role of Farm Advisors

Ms Inge Van Oost

The EU has a significant interest in the development of diverse, productive and sustainable systems of agriculture. This interest is evident from the hugely important Common Agriculture policy, Research and Rural Development programmes and support systems. In addition the recent establishment of sectorial European Innovation Partnerships (EIPs) represents a new approach under the Europe 2020 Strategy to speed up EU research and innovation.

This Agricultural European Innovation Partnership (EIP-AGRI) aims to foster a competitive and sustainable agriculture and forestry sector that "achieves more from less". It contributes to ensuring a steady supply of food, feed and biomaterials, working in harmony with the essential natural resources on which farming depends. The EIP-AGRI brings together innovation actors (farmers, advisors, researchers, businesses, NGOs, etc) at EU level. There is now on-going participation for farm advisors in consultative processes, for example the Rural Assembly, its Agri-Innovation subgroup, several thematic focus groups, workshops and seminars under the direction of DG Agriculture and Rural Development of the EU Commission.

There are lots of new opportunities for the involvement of farm advisors within the calls for multi-actor H2020 research proposals, for example in all multi-actor projects, thematic networks and also rural renaissance projects . The newest opportunity is a focus on supporting bottom-up innovation and problem solving through rural development programmes (RDPs) in the form of Operational Groups. These EIP Operational Groups will be funded under the RDPs in most EU regions, they are project based and tackle a certain (practical) problem or opportunity which may lead to an innovation and contribute to achieving the programme's objectives. Each Operational Group is composed of those key actors (e.g. farmers, advisors, researchers, businesses, NGOs) that are in the best position to realise the project's goals, to share implementation experiences and to disseminate the outcomes broadly. The Operational Group approach makes the best use of different types of knowledge (practical, scientific, technical, organisational, etc) in an interactive way in a local context.

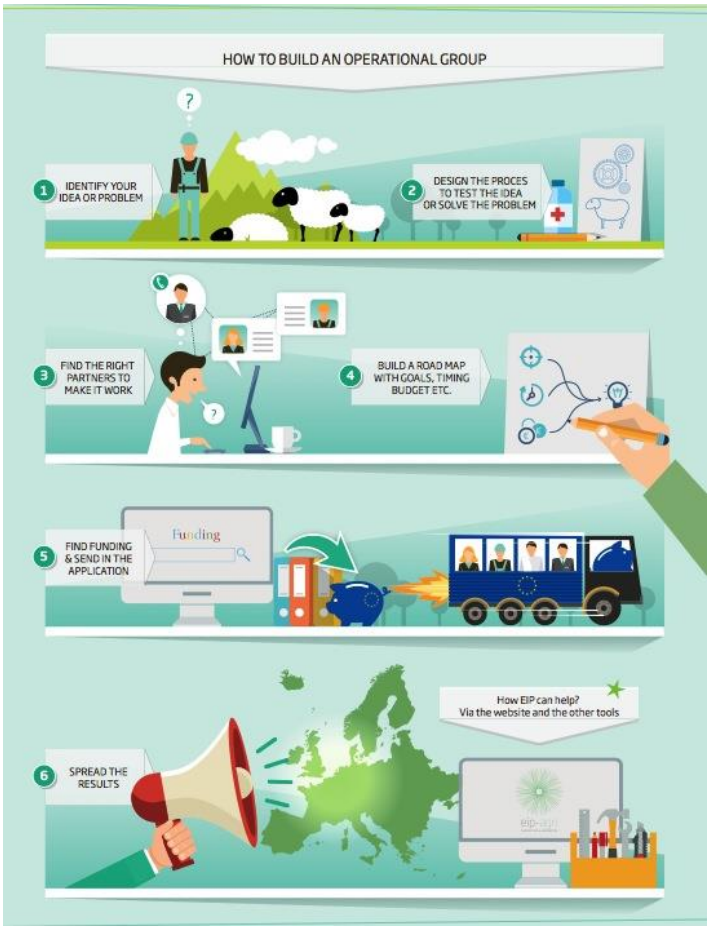
The EIP-AGRI network will connect EIP Operational Groups, to facilitate the exchange of knowledge, expertise and good practices and to establish a stronger European dialogue between the farming and the research community. The EIP-AGRI network is run by the European Commission (DG Agriculture and Rural Development) with the help of the Service Point (SP)

“Achieving more and better from less” is a main motto for EIP-AGRI. On the EIP-AGRI website a considerable amount of useful guidance[1] can be found, explaining how Operational Groups can help rural Europe to achieve more and better from less. The guidance was prepared in close liaison with Member States and has been promoted widely.

A variety of approaches have already emerged, from small and focused Operational Groups to broader somewhat bigger Operational Groups, and a wide range of themes covered. A flexible approach is indeed what was intended

[1] https://ec.europa.eu/eip/agriculture/en/content/eip-agri-brochure-operational-groups-turning-your-idea-innovation (and) https://ec.europa.eu/eip/agriculture/en/content/eip-agri-seminar-launching-operational-groups-and-eip-networking-rural-development

and mentioned in the EIP guidelines: "The EIP aims at a flexible and open system for the creation of a multiplicity of operational groups".



© EIP-AGRI Service Point

An important point for attention is that Operational Groups can be launched to cover a very wide spectrum of rural development actions. Bridging gaps between research and practice is just one of these areas and many other opportunities for Operational Groups exist across the EIP-AGRI remit.

Operational Group projects can be launched with one or more of the following objectives:

- Promote a resource efficient, economically viable, productive, competitive, low emission, climate friendly and resilient agricultural and forestry sector, working towards agro-ecological production systems and working in harmony with the essential natural resources on which farming and forestry depend.
- Help deliver a steady and sustainable supply of food, feed and biomaterials, including existing and new types.
- Improve processes to preserve the environment, adapt to climate change and mitigate it.
- Build bridges between research knowledge and technology and farmers, forest managers, rural communities, businesses, NGOs and advisory services.

Financing innovation

Rural Development Programme (RDP) funding will help launch Operational Groups. Measures supporting cooperation, investment, demonstration and advisory services, as well as budgets for National Rural Networks and Technical Assistance are all ideal for supporting Operational Group projects and EIP networking.

Higher-than-usual support rates from EU and national sources apply for innovation. The cooperation measure for example (Article 35) contains special support of up to 100% for setting up groups. The same rate can be applied in an operation to fund the project that is carried out by the Operational Group.

Member States should be aware that these two types of funding (for starting-up the cooperation on the one hand and for the operational group project work on the other hand) are different and they do not need to be programmed under one RD support operation. Separating the start-up funding provides more flexibility that can encourage more interest in Operational Groups, and will result in better-planned projects that generate higher quality outcomes.

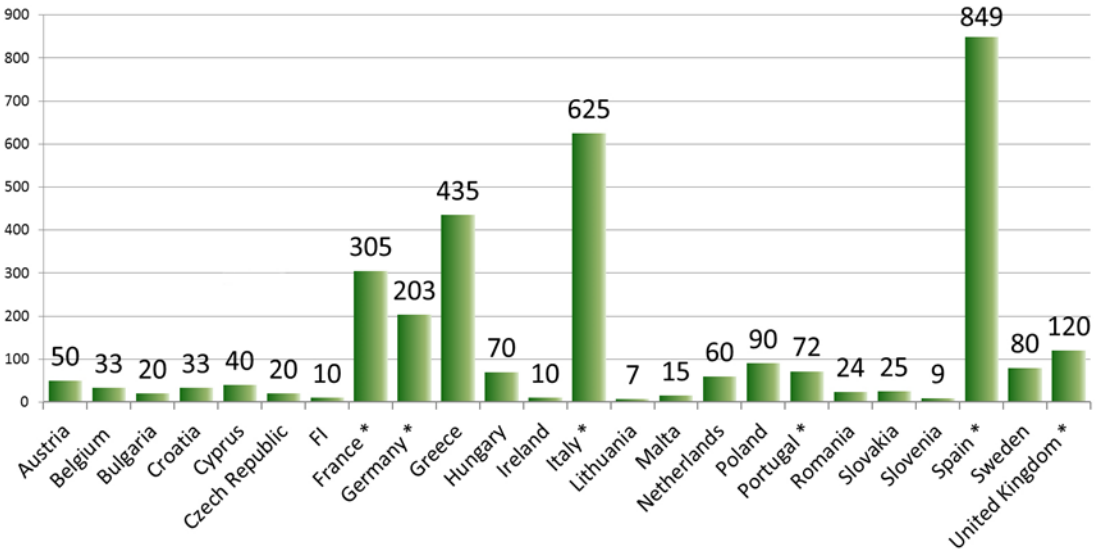


Figure 1. Operational groups planned in RDP's by country

"Using the setting-up funding first should result in Operational Groups beginning their projects with a well developed view on the state-of-the-art and how to bring added value by doing the project", remark DG Agriculture & Rural Development. "It will also give the groups a sound foundation to work from, which reduces the risk of errors arising. This is because the studies, animation, partner search work and preparation of the cooperation agreement which are eligible for funding during setting-up will put the groups in the best possible position to begin their project activity. In this way, they will be able to start with the ideal targeted mix of actors who can bring in the specific knowledge needed for the aim of the project (practical, organisational, scientific knowledge, etc) and can help to get the results widely implemented (e.g. multipliers, facilitator)."

"Setting-up tasks will include preparing a plan for dissemination of their results. Communication planning is absolutely vital since these groups are using public funding and are meant to produce public knowledge freely available to all.

Innovation brokers – advisors and their role

A key consideration for RDPs to clarify is the difference between 'innovation support' and 'innovation brokerage'. Innovation support is a broad term covering various tasks that can support innovation, such as collective work by thematic groups, think tanks, promotion etc. before or after the projects become operational. Innovation support can include "innovation brokering". Innovation brokering is the process focusing on the formation of a group and development of the partner's project idea(s) into a clear workplan.

"These are both important aspects of the innovation process. While "innovation support" has a more general and broader focus, "innovation brokering" is really supporting a specific individual group to be set up with a potential successful project" says DG Agriculture & Rural Development. "Organisations like farm advisory services are able to act as good innovation brokers or innovation support services because they are well networked and well positioned to bring the right people together. Because of their daily contact with clients, they can easily capture grass-root innovative ideas from practice and help indicate where practice interest and needs are highest, so to prepare a project with high added value.

Many advisors are ideally positioned to set up and join groups dealing with technical, financial, social, environmental or market related issues and problems. They have a strong relationship built on trust which enables them to act as brokers bringing together farmers and other actors who can help each other. They can take up the following new roles to support innovation:

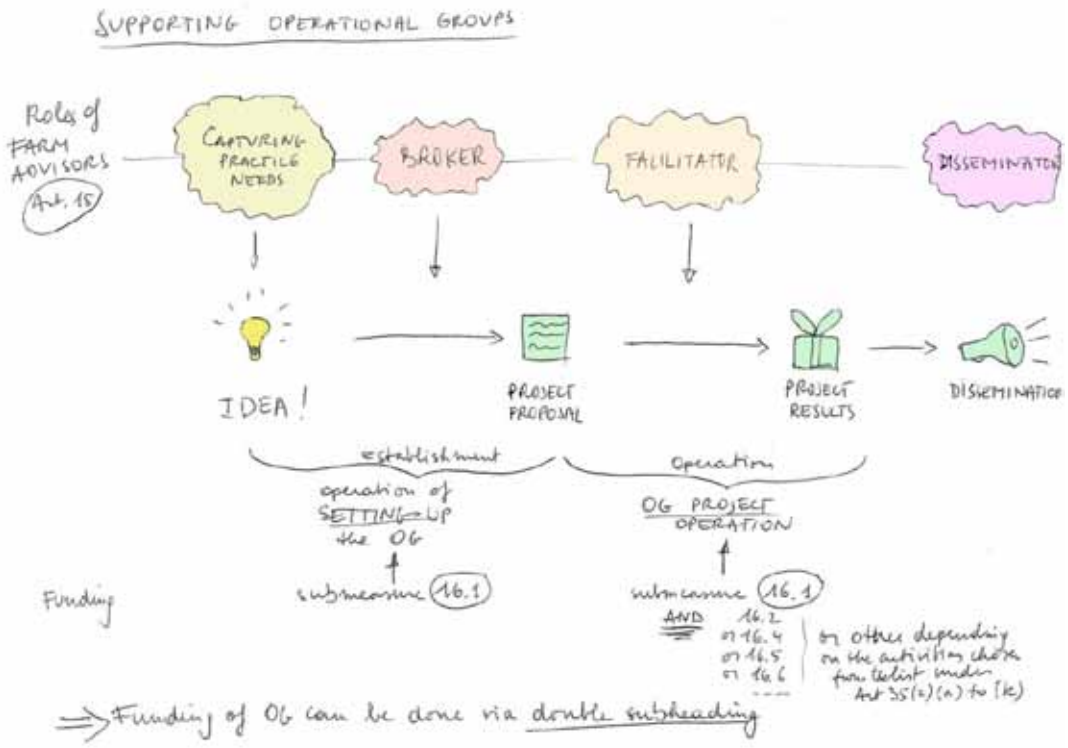


Figure 2. Various roles of farm advisors within the EIP-AGRI projects and networking

Organisations like farm advisory services are able to act as good innovation brokers or innovation support services because they are well networked and well positioned to bring the right people together. Because of their daily contact with clients, they can easily capture grass-root innovative ideas from practice and help indicate where practice interest or needs are highest, so to prepare a project with high added value.

Moreover, with an advisor as partner in the operational group project, broad practical knowledge and application potential can come in. The advisor can give a view on the various farm situations he encounters with his clients. Knowing such conditions will help guide the operational group to the best solution to be developed which is particularly important for increasing the application potential for the project results.

Advisors can also act as 'multipliers' for bringing the Operational Groups' experiences to a broader farmers' group already during the project: they can involve other farmers for instance in farm visits, discussion groups or demonstration events. Of course, they also have already established dissemination channels to disseminate the results after the project is finished." One of the new tasks of the National Rural Networks in the 2014-2020 period will be to network advisory services and innovation support services and unleash all this potential.

See the EIP-AGRI web pages for more information about launching Operational Groups.

Further advice and information inventory

Please note these links are for English language pages and further searches (particularly via the websites of the EU Institutions) may provide other language versions of the information.

Operational Groups

- EIP-AGRI homepage: http://ec.europa.eu/eip/agriculture/
- EIP-AGRI Brochure on Operational Groups: Turning your idea into innovation: https://ec.europa.eu/eip/agriculture/en/content/eip-agri-brochure-operational-groups-turning-your-idea-innovation
- EIP-AGRI seminar on launching Operational Groups: https://ec.europa.eu/eip/agriculture/en/content/eip-agri-seminar-launching-operational-groups-and-eip-networking-rural-development

A Short and Sweet History of Irish Agriculture

Mr Declan O'Brien

This is a brief story of the significance of agriculture to historical developments in Ireland down the centuries. Now, I doubt that many of you are interested in a heavy history lecture at this hour of the morning; therefore, we will take our guidance from a popular rural saying, and keep this presentation *short and sweet like a donkey's gallop*. However, by the end of proceedings I trust you will have a greater appreciation of how Irish farming has developed over the centuries. In addition, this presentation aims to explain the significance of the many monuments, castles and ruins you will see in your travels over the coming days and their historical importance from a social, cultural and economic perspective.

So, where do we start?

Well, until recently it was generally accepted the story of Ireland's habitation began around 8,000 BC along the North Antrim and Derry coasts where the first groups of hunter gatherers are believed to have settled after migrating from Britain. However, the recent discovery in a cave outside Ennis, Co Clare of a butchered bone from a brown bear has pushed the date of first settlement back to around 10500 BC. These Mesolithic hunters held sway in the country for close to 6,000 years until the arrival of Ireland's first farming communities.

Ireland was obviously one of the last European regions to join the first agricultural revolution – reaching an island on the Europe's western fringes was obviously a considerable logistical challenge for Neolithic farming communities to overcome. Yet, by 4000 BC Stone Age farmers were well established in the country. Using flint axes and fire these enterprising settlers moved out from the coastal and riverine settlements of their predecessors to clear the primeval forests and create farmland. Research shows that the country's first farmers grew mainly emmer wheat varieties, as well as barley. In addition, they kept sheep and probably goats, as well as cattle and pigs. The evidence indicates that these were very well organised communities and in the Boyne Valley of Co Meath, for example, they constructed the renowned passage-grave complexes of Knowth, Dowth and Newgrange.

These structures illustrate that Ireland's Neolithic farmers were also skilled builders who had a profound understanding of the natural world. At dawn on the Winter Solstice (December 21) – and for a few days on either side of this date -- a shaft of sunlight shines through a strategically-placed roof box over the entrance at Newgrange and penetrates the passageway to light up the main chamber for 17 minutes.
To the Neolithic farmers of the Boyne Valley the winter solstice was clearly an important turning point in the annual cycle. It has been suggested that the solstice might have represented the start of the new year. Equally, it could have been a signal of nature's rebirth, promising renewed life to crops and animals and the community itself.
The next shift in the Ireland's farming story takes place around 2000 BC when the first bronze tools begin to appear. There is evidence of copper mining at Ross Island in Killarney, Co Kerry from this period, as well as in other areas of the country. The mixing of copper and tin allowed these peoples to produce sickles and socketed axes that, crucially – and unlike flint tools – could be sharpened after use.
A colder and wetter climate had resulted in a move away from crop production during the closing centuries of the Neolithic period but this trend was reversed during the Bronze Age.

Two critical drivers of the return to crops were the introduction of the ard plough and wheeled carts. Deeper ploughing led to the removal of large numbers of stones from the tilled ground. As a consequence, these farmers were among the first to enclose fields with stone walls – a practice which is still to be seen, particularly in the west of Ireland today.

Another feature of the period is the greater militarisation of society – which is evidenced by the large number of swords, spearheads and shields which have been unearthed at Bronze Age sites. This emphasis on communal security impacted on the location and design of settlements. Circular ring forts and walled enclosures date from this period and from the later Iron Age.

Some, such as Dún Aengus on the Aran Islands, were stunningly located and of significant size. Ring forts with large earthen works can also be found in many parts of the country. In the main, however, the majority of Iron Age and Bronze Age forts were of more modest construction. Even so, the banks which enclosed the

settlements can still be identified on many Irish farms, and close to 45,000 such structures have been identified.

That so many of these have survived into the modern era is testament to their association with the sidhe or fairies. Country people believed the old ring forts were the dwelling places of these fairies and to destroy the forts would provoke retribution. As a consequence, people generally did not disturb them.

By late in the Iron Age Ireland had become culturally influenced by the Celtic peoples who then controlled much of continental Europe and Britain. The legends and sagas of this civilisation point to the importance of cattle to the standing of local chefs and kings. The epic Táin Bó Cúailnge or The Cattle Raid of Cooley tells of the struggle between Ulster and Connacht for ownership of the Brown Bull of Cooley. This saga was one of a corpus of heroic tales which were recorded by Irish monks in the sixth, seventh and eight centuries. Much of the law tracts dealing with land, livestock ownership and farming were also written down in these centres of learning, which were famed across Europe in the centuries after the collapse of the Western Roman Empire. The monasteries in which these monks lived, wrote and worked are often marked by the presence of round towers.

The purpose of these towers is a matter of debate. Some scholars argue they were used as refuges when the monasteries were attacked, while others believe they were actually bell towers for the community.
The curtains came down on this golden age of Irish monasticism at the end of the eight century with the arrival of the Vikings. The Vikings impact on Ireland's agriculture was limited as the new-comers focused primarily on establishing urban trading strongholds at strategic port locations such as Dublin, Waterford and here in Limerick. However, the Northmen had a profound influence on Ireland in terms of trade and greater connectivity – important considerations even in the Middle Ages.

Ireland's relative isolation was finally ended in the 12th century when an Anglo-Norman invasion from Wales brought the island under the nominal control of England's monarchs. This totally changed the political, economic and cultural landscape of the country, as well as transforming farming and the built landscape. The Anglo-Norman settlement was not a total or complete invasion. Faced with strong opposition from the

native Gaelic population, their presence was initially limited to the east and south of the country – with later inroads into the west. Their lands were protected from fortified keeps and castles, the ruins of which are a feature in both towns and rural areas.

Not to be outdone, Gaelic chieftains copied the Anglo-Norman taste for fortified residences by developing tower houses as their seats of power.

The Anglo-Normans settled in the best tillage lands and their arrival sparked an increase in crop production. This was facilitated by the introduction of the wheeled plough and a three-year crop rotation. This involved the growing of winter corn (usually wheat and rye), spring corn (oats) and then the land would be left fallow. Sheep were also important to the settlers, which was illustrated by the increased exports of wool and sheepskins in the 13th and early 14 centuries. To the fore in this new settlement were the continental religious orders such as Cistercians – who were noted farm managers and agricultural innovators of their age. Another stark difference between Norman and Gaelic farming was the saving of hay for winter fodder. Native farmers had traditionally left their herds of cattle and sheep to fend for themselves as the generally mild winters meant there were grass supplies all year round. Indeed, this natural ability to grow grass is a cornerstone of the current expansion in Irish dairying.

The Anglo-Norman colony prospered up to the second half of the 1300s when a combination of the Black Death, war and famine contributed to its sharp decline and near collapse. Despite the radical innovations introduced by the Anglo-Normans, there was little change in Gaelic farming from the early Christian period to the demise of the native lordships in the 16th and 17th centuries. The Gaelic farming system was based around dairying – consequently the cow was king. Land was valued on the number of cows it could support, while the measure of a leader's standing in society was directly related to the size of his herd.

Indeed, Hugh O'Neill, the last great independent Gaelic lord, is reputed to have had a herd of 120,000 cows in the 1590s. Dairy produce provided much of the Gaelic diet and contemporary sources talk of people producing an array of sweet, sour, thick and thin drinks from milk. In addition, salted and unsalted butters were a staple food, as well as a variety of cheeses. In fact, the English visitor, John Stevens, described the Irish in 1690 as "the greatest lovers of milk" he ever saw – this love affair with dairying has continued to the present day, with the sector enjoying massive growth over the last two years despite the serious downturn in milk prices.

In the 16th and 17th centuries small black cattle similar to these Kerry cows made up the vast bulk of the Gaelic herd and it was estimated that almost two cows per hectare was a common stocking rate in the early modern period. The English official Sir Thomas Petty recorded in the late 16th century that Irish cows yielded up to 13 litres of milk in high summer.

The emergence of the centralised early modern state heralded the end of the road for the semi-independent Gaelic and Anglo-Norman lordships. The expansion of the State's bureaucracy into areas previously controlled by local lords was complicated in the Irish context by the issue of religion.

The Gaelic Irish and Anglo-Normans – or Old English as they were now termed – had remained predominantly Catholic. However, England had enthusiastically embraced the Reformation. Faced with prospect of a Spanish invasion, England's monarch Elizabeth I sought to curb the power of Ireland's Catholic magnates.

The war that followed broke the power of the Gaelic ruling classes, particularly in Ulster where a rebellion led by the aforementioned Hugh O'Neill ended in defeat for the Irish in 1603. During this conflict the dairy herds of the Gaelic chieftains were a constant target for the English forces – either to capture or destroy – as they sought to starve the Irish into submission. Vast tracts of land in Ulster were confiscated in the aftermath of the war and the properties settled or planted with Protestant settlers from Scotland and England.

Two further crushing defeats for the Catholic cause at the hands of Oliver Cromwell in 1651 and William of Orange in 1690 meant that by 1700 the country's Old English and Gaelic elite had been totally destroyed and over 90 per cent of the land was in the hands of powerful and mainly British elite.

The 18th and 19th centuries were turbulent times for Irish agriculture. Outside of east Ulster, the landing-owning Protestant ascendancy was viewed as a foreign presence by the predominantly Catholic peasantry.

Their lavish lifestyles and grand estates and houses stood in stark contrast to the grinding poverty of their tenants. Moreover, the exclusion of Catholics from

careers in the army, the law courts and public administration fuelled their sense of resentment. While the 18th century saw the agricultural revolution in England gather pace, the new crop management practices and technology were slow to take hold in Ireland. Landowners were reluctant to invest in or encourage such improvements on their estates; meanwhile their tenants had neither the capital nor the incentives to do so since they were mainly on short-term leases with no security of tenure. Yet, despite the undoubted hardship and inequities of the age, the 18th century was a time of great trading progress for the Irish economy, and particularly for farming.

Increased shipments of butter and beef accounted for much of this growth. From the 1630s butter was being shipped out of Ireland in butter barrels and wooden casks called firkins. The barrels took around 100kgs of butter, while there were 24kgs in the firkin. The trade was handled by merchants in Cork city, who shipped salted butter to English colonies in the West Indies and North America, as well as to Europe. Indeed, the Cork Butter Exchange which was established in 1770 dominated the global trade in butter for close to a century. Exports of live cattle and beef were another stalwart of Irish farm sector. There was a strong tradition of live cattle exports to England but this was restricted by the Cattle Acts of the 1660s. The Irish responded by switching to the dead meat trade and exporting barrels of salted beef. Again the English colonies in the Caribbean and North America were the primary markets, along with France and Spain. Ireland was exporting up to 200,000 barrels of beef a year by the second half of the 18th century.

The 18th century also saw the rise of the potato as the primary food source for the country's peasant farmers. Although first grown in Ireland a century earlier, the humble spud had been a slow burner in terms of popular take up. The potato was the ideal crop for Irish small holdings as it throve on acid soils and in wet conditions to produce a nutritious food source which, unlike grain, could be consumed without the need for further processing. Initially, potatoes were grown in Munster where they replaced dairy produce and oats which the tenant farmers could then sell. As it spread northwards it also displaced rye, beans and peas.

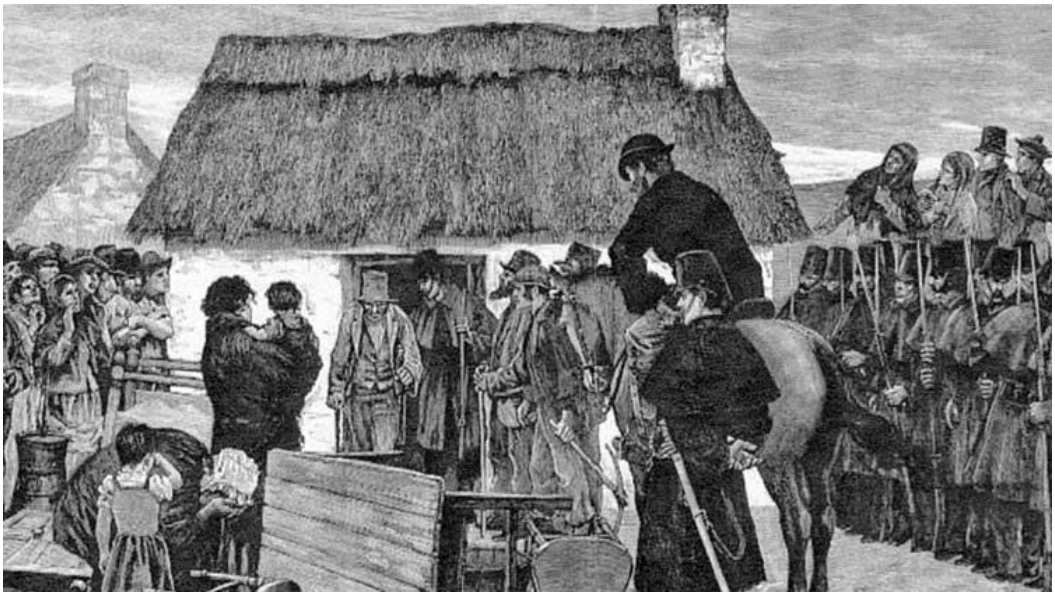
With yields of about six tons per acre, or 15 tons per hectare, from their lazy beds, the tenant farmers quickly realised that an acre of potatoes could support a family for a year – eight people at a consumption of rate of 3.5kgs per day. The explosion in the potato acreage – it hit 0.8 million hectares by the 1840s – was mirrored by an equally sharp increase in the country's population. It grew from one million in 1600 to two million by 1700 and four million by 1800. However, by the mid-1840s it is estimated that there were 8.5 million people in the country – and almost 3 million of these were dependent on the potato for 90 per cent of their nutrition. When potato blight struck the potato crop in 1845, famine quickly followed. Further crop failures in 1846, '47 and '48 turned a bad situation into a catastrophe. By the end of the Great Famine over a

million people had perished from starvation or disease and a million more had emigrated. Increased evictions through the 1850s and mass emigration meant the population remained in steady decline for 50 years and had dropped back to four million by 1900.

The Great Famine was a turning point for Ireland – culturally, economically and politically. The population losses that stemmed from the Famine were mainly in the Gaelic or Irish speaking western half of the country. With emigration to North America, Britain and Australia the only option for the children of those who remained, families abandoned Irish for English. Moreover, the adoption of English as the vernacular of the country was accelerated by its use in the education system. The first Model School to educate teachers was established in 1838 at Glasnevin Dublin, and in the years that followed a total of 18 such schools were established. However, with Irish being viewed as the language of the past, education was invariably through English, even in areas that were still predominantly Irish speaking. The Irish language never recovered from the combination of these policy decisions and societal shifts.

In terms of farming, the loss of the small cottiers enabled the development of larger holdings. Farms of 15 to 20 hectares were now a possibility for some and these farmers formed the basis of an emerging rural middle class during the latter decades of the 19th century. This period also heralded the arrival of the grazier, livestock finishers and traders who supplied sheep and cattle to the lucrative British market. The high profits from this business enabled those involved to purchase or lease large tracts of land in the midlands and east. In general, the post-Famine era saw a major shift from tillage to grazing as the export of live cattle and dairy produce to England came to dominate Irish farm exports. In 1850 close to 200,000 cattle were exported live from Ireland, however, by 1900 this figure had reached 750,000. Meanwhile, butter exports at the end of the 19th century varied between 350,000 tonnes and 400,000 tonnes. This post famine period was also notable for the emergence of the first itinerant farm advisors, often employed by absentee landlords to promote higher production among the largely tenant farmers.

Two other significant changes from this period involved land ownership and the development of co-operatives. The decades after the Famine saw a determined and often bitter campaign by tenant farmers to secure fairer rent agreements from landlords and more secure tenure on their farms. This movement was allied to a political drive for greater autonomy and self-government for Ireland.

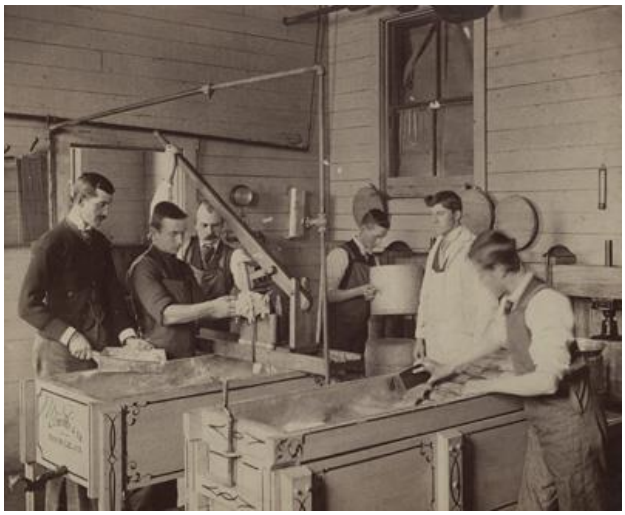


Efforts to win self-government proved unsuccessful but a series of land acts at the end of 19th and start of the 20th centuries resulted in the break-up of the old estates and enabled hundreds of thousands of tenants to purchase their holdings. Many commentators contend that the protracted struggle for land rights coloured the attitude of Irish people to farm ownership, with the close attachment of farmers to their holdings being attributed in some quarters to the experience of dispossession, poor title and possible eviction that predated the land purchase schemes.

The drive for Irish independence gathered pace after the First World War. An unsuccessful rising in 1916, was followed by a bitter guerrilla war and civil conflict between 1919 and 1923. The political settlement that flowed from that struggle saw Ireland partitioned, with the 26 Southern counties gaining independence and the six counties of Northern Ireland remaining within the United Kingdom. Despite having left the UK, the British market remained the primary outlet for Irish cattle, sheep and dairy produce – as well as bacon and eggs – for the next four decades.

Britain took almost 600,000 finished and unfinished cattle each year and the sale of these through the Dublin Cattle Market set the price of cattle at fairs and sales throughout the country. On the dairy side, butter remained the main product for hundreds of local creameries. These were a product of the co-operative movement which was established in 1892-93 by Horace Plunkett. One of the great figures in Irish agriculture, Plunkett also went on to become the first head of Ireland's agriculture ministry, established as the Department of Agriculture and Technical Instruction 1899. The first farm advisor was appointed in 1900 and the new body offered financial support for the first dedicated agricultural college which was set up by the Franciscan religious order in 1903, in Mountbellew, Co Galway. Plunket's actions on the co-operative front were prompted by a major recession in the dairy industry, due to a collapse in Irish farm butter sales in Britain as a result of strong competition from Danish creamery butter. Irish farmers quickly bought into the co-op concept and over 30 creameries were established between 1892 and 1895, with 360 dairy societies founded by 1903 – as well as 40 poultry co-ops, 200 agricultural banks and a range of other farming societies.

The local creamery remained a focal point for Irish farmers for the next 70 years. However, the fragmented nature of the industry and a total reliance on butter meant the creameries long-term viability in the modern era was always uncertain. The formation in 1961 of a centralised body to market dairy produce – Bord Báinne – and the subsequent launch of the iconic Irish butter brand Kerrygold proved that Ireland could compete with the best globally. Ireland's entry into the EEC in



1973 accelerated the expansion and restructuring of the dairy sector. The local village creameries have long since passed and seven processors now handle the vast bulk of Ireland's milk pool – among them global players such as Kerry Group and Glanbia.

The meat industry has also seen significant change. While live exports of cattle and sheep remained the primary outlet up to the mid-1960s, beef and sheep processing took over from this time and Ireland is now one of the world's leading beef exporters. Beef sales top two billion euro annually, and Irish product is to be found in all the top supermarkets across the EU.

Although cereal production is under pressure at the moment, the recent hike in Irish whiskey sales across the globe is offering new opportunities for growers. Indeed, the drinks industry has always been a key component of the country's agricultural output and what discussion of Irish farming would be complete without a mention of that other blue chip brand Guinness. Likewise, the Irish pig sector has been transformed over the last four decades. While every second farm had a few pigs when I was young, commercial production is now confined to 500 top class operators.

To conclude:-

So how has history influenced Irish farming and what echoes of the past can be identified in the modern industry?

Certainly, the impact of the land struggle and the emotional attachment to the Irish family farm which flowed from it remains hugely important. This is reflected in the tiny percentage of agricultural holdings that come for sale each year. This strong affinity with the land has had positive and negative consequences. From an agricultural perspective it has certainly acted as a brake on the development potential of the industry as farmers have struggled to secure additional land to expand. However, the sense of 'tie to place' this attachment to the home farm engenders has also acted as a critical driver of inward investment in many rural areas, as emigrants return to their own localities to start businesses and raise their families.

The expansion of the Irish dairy and beef industries has obvious roots in the past. Indeed, a common thread linking the historical to the modern has been farmers' ability to utilise the country's excellent grass-growing potential. Managing grass was a key consideration for the old Gaelic herd owners and the landlords that followed them – and it is still the driver of profit on today's beef, sheep and dairy farms.
There are also numerous instances of Irish farmers adapting and developing new crops, new processes and new management structures to improve their lot. The shift from live cattle exports to beef in the 17th century mirrors the same transition of the 1960s and '70s. The co-op concept introduced in the 1800s continues to be the management model of choice for farm businesses. And although the total shift to potatoes was to have disastrous consequences, the fact that uneducated peasants were willing to fundamentally alter their dietary habits, illustrates an openness to change which remains a feature of Irish society.

Farming remains a key element of the Irish national psyche. Maybe this is because of the largely rural nature of Irish society; or it could be the fact that food production remains the country's largest indigenous industry, employing more than 300,000 people and delivering over €10 billion in export earnings. Or possibly

it has something to do with the innate resilience of farmers themselves, because ever since the days of Newgrange, farmers have always trusted in a new dawn.

Irish Advisory Services contributing to Innovation Support

Aileen Walsh

I work as a Dairy Business and Technology advisor located in Eastern Section of County Limerick. Half of the land area is heavy wet soil and is classified as an area of natural constraint.

I work with 135 Dairy farmer clients; I run three active Dairy Farmer discussion groups. These groups meet at a minimum 12 times per year. Every year I would visit over 100 farms and meet clients in my office on 200 occasions for consultations. I also meet/communicate with clients at discussion groups, monitor farm open days, large farm events, seminars and research farm open days. I also have contact with clients through media, print and radio. I provide a lot of advice on the phone direct to farmers.

A large part of my time is spent on E.U and National schemes, such as grant scheme applications for infrastructure and farm buildings, completing Basic Payments Scheme and Nitrates Directive Derogation Applications, Nutrient Management Plans and Nitrates Directive Compliance records.

I work as part of a multi-disciplinary team, which includes Dairy and Drystock advisors, administration staff, Education officers, Specialists and Researchers. I would like to acknowledge their help and co-operation in my role.

Challenges

The greatest challenge in my role is: Delivering technology at farm level, while at the same time delivering the service element (scheme work) of the role. Typically, In January I will plan out a schedule of my work for the year ahead. Unfortunately, this is often derailed by E.U and National schemes being launched with tight deadlines. An example of this at the moment is the 'Knowledge Transfer Groups' application procedure which has a deadline for applications of the 30th June.

How do I marry the delivery of innovation on farms with the scheme/service element of the role?

Sometimes the two can overlap. An example of this is when completing a derogation plan for farmer which has to be done by the 31st March each year. This plan allows a farmer to stock his land at a stocking rate greater than 170kgN/ha and up to 250kg organic N/ha. In completing this plan, I can produce a nutrient (fertiliser and organic manure) management plan for his farm, to assist the adoption of best environmental and agronomic practice.
This nutrient management plan will give him very detailed nutrient advice for each field/plot on his farm. Here the two aspects of my role can be combined to improve the farm production. I am fortunate that in Teagasc, we have excellent computer programmes to complete this plan; in addition we have an expert specialist team that is readily accessible to help us with these schemes/innovations.

The role of Discussion Groups in delivering financial gain and better practices on farm.

Dairy Discussion groups allow me to meet a group of farmers to discuss issues/topics relevant to the time of year. It is a sharing of ideas between farmers. These groups meet monthly. This allows me to deliver technical advice in a very efficient and timely manner. My role in the group is to organise and facilitate the

meeting. I am trained in how to use the knowledge of the group members to better influence decision making. In the background I have help and training from the specialist team in Teagasc, to assist me in running and facilitating good Discussion Groups.

Role of other stakeholders/partners:

Some of the innovations/technology we wish to deliver on Irish Dairy farms have common objectives with other stakeholders and there are efficiencies to be gained from working together. An example of this is somatic cell count workshops for farmers. Here the common objective is to improve milk quality. I and many of my colleague advisers in Teagasc have been involved in local workshops along with the local Dairy processer (Kerry Group), local veterinary surgeons and milking machine technicians, to promote/demonstrate correct practice to improve milk quality among a wider group of dairy farmers.

Summary:

Try to link scheme work to best farm practice and technology adoption where possible.

Use a different methodology for delivering technology to dairy farms e.g. Discussion groups.

Use other stakeholder where there is a common interest in delivering technology.

The Impact of Innovation on my farm

Mr Fiachra Liston

Innovation has played a major role in the development of my farm in the past 10 years. It has played a major role in grassland management, in genetics and sire selection, in financial management, in milking parlour design and cow flow. Without this on-going innovation my farm would be less sustainable and less profitable place to work today.

I will begin with innovation in grassland management and how this has helped me to grow and manage more grass on my farm as cow numbers and stocking rate increased.

Simple to use tools such as the Spring Rotation Planner, the Summer Grass Wedge and the Autumn Grassland Planner have made decision making around grassland management easier. This has resulted in better outcomes for my farm.

Using Pasture Base Ireland as the preferred tool to measure yearly grass growth rates has enabled me to reseed underperforming paddocks, so increasing overall grass dry matter production on the farm. While many strides have been made on my farm from a grassland management point of view, innovation around cow genetics and the use of genomics has even been more significant. The EBI (Economic Breeding Index) project has been in existence since 2002. I have embraced it whole heartedly as it has added profit to my farm.

The use of genomics has also played a significant role. While this was initially a jump of faith into the unknown, I had confidence in the people driving it, as well as support from fellow farmers. I now use Genomic A1 bulls for the vast bulk of my A1 use. Genomics also plays a major part in helping me to decide which replacement heifers I wish to hold onto. A simple hair sample taken from the female calf will increase the reliability of that replacement's EBI, this allowing me the opportunity to sell or keep that replacement for my own use.

So, you can see innovation and how I use it, has played a major role in making my farm more profitable and sustainable.

Adopting innovation on my farm has been greatly helped by the support and advice given by my local discussion group (Kilmallock group) and my Teagasc advisor. Seeing other group members adapt new technologies on their farms gives one the confidence to try the technology. Discussing the technology thoroughly at a group meeting, gives an added confidence that it will work on my farm. The support and advice of the Teagasc advisor is critical in the adoption process.

The role of research is also critical here. Researched, backed up by Open days, will lay the first seeds of the adoption process.

There are a number of pathways where information finds its way onto my farm. As mentioned, my well trained Teagasc advisor is a major source of information. So is my accountant. The farming press, open days, monitor farm walks, discussion group meetings all play their part. All these pathways play a role in innovation adoption on my farm. Some are much more important than others.

A Private Consultants View

Mr Breian Carroll

I am Managing Director of Carroll Consultancy, an Agricultural Consultancy firm based in Co. Mayo. We have 7 employees on a full-time and part-time basis. The advisory unit of the business has 2 farm advisors and 1 agricultural technician. The firm was established in 2001 and today we provide advisory services to in excess of 600 farmers but also other business services to the wider agri-business sector.

I am a past President of the Agricultural Consultants Association (ACA) which is the representative body for private Agricultural Consultants and Advisors in Ireland. ACA has in the region of 150 professional members, employing in the region of 300 Agriculturalists and providing services to around 42,000 Irish farmers.

Carroll Consultancy provides farm advisory services to farmers and landowners, expert witness and litigation services to farmers and legal firms, CPO/EIS agronomy services to farmers and consulting engineering firms/local authorities and advises agri-businesses in their strategic developments and policies.

Our farmer clients are predominantly suckler and beef, with some sheep and dairy farmers. We retain our clients and gain substantial new business on giving a very high quality service, independence, attention to detail for all client queries and a reputation for strong timely knowledge on all aspects of the advisory sector. We administer advice to farmers by the following methods: one to one consultations in our office or on their farm, through phone consultations, newsletters and regular correspondence, information meetings, our new discussion groups and a client text messaging service.

In our firm we have an internal policy of a high emphasis on continuous professional development and individuals attend DAFM training, training through ACA which link up with other stakeholders and additional personal development training through other business affiliated bodies and executive business colleges.

In the farm advisory unit of the business, we assist farmers with the following

- Basic Payment Scheme applications.
- Applications for grant aid under the numerous DAFM grant aided development schemes,
- Agri-environment applications e.g. GLAS.
- Nutrient Management Planning for farm management practices but also for compliance under the Nitrates Regulations,
- Farm accounts and Farm Business plans and acting on behalf of our clients with Financial Institutions.
- Health and Safety planning and completion of safety documents.

- We launched a new and unique service in the region in 2015 in which we complete the full cycle in the farm development grant process: the farmyard design and assessment, planning permission, detailed costing of the project and assistance with a farm budget, the grant application and the final application for the grant payment on behalf of farmers.

Challenges and Opportunities for a private advisory firm in Ireland and recommendations for the sector to support all farmers:

- During a very difficult business environment for the private sector in Ireland in the past 8 years, our firm had to diversify to other areas to exploit other opportunities in the agri-sector.
- Our firm did not participate in the former discussion group model having made a business assessment of the terms available. However, under the current model of the Knowledge Transfer Programme, we will have 4 Beef/Suckler Discussion Groups.
- Approximately 30% of Irish farmers have no formal link with either a Teagasc or private consultant/advisor. The challenge is how do we cater for the needs of these farmers and get the latest advancements to them?
- In order to give the best available advice in innovation to our farmer clients, there should be a formal arrangement between private advisory firms and the Research and Advisory Centres of Teagasc. There is no direct link today and it is very much ad hoc. Without access, it is making it difficult for private consultants to give the most current advice in latest innovations and advancements to our customers.
- All Innovation and Technology supports developed and funded by the DAFM should be made available at no cost to all private advisors as they will use those tools to advance their farmer clients in terms of innovation, efficiency and income. Some of these tools include ConnectEd, the Nutrient Management Planning online system, the e-Profit Monitor for the Knowledge Transfer etc.
- Access to these tools and all the latest research will ensure in excess of 80,000 Irish farmers would avail of these services.
- Meaningful collaboration between Teagasc and all private advisors at local and regional level to run joint programmes in areas of innovation for all of our farmer customers. Build on the links of other stakeholders in this process. Develop these programmes to encompass other advisory areas in due course.

The farm advisor influencing decision-making: a sociologist's view

Dr Áine Macken-Walsh, Teagasc

Introduction

Farm advisors know from practical experience that influencing farmers does not simply involve presenting information. We know that the better the 'fit' of farm advice to the mindset of the farmer, the more relevant, useful and influential farm advice can potentially be.

It is useful for extension organisations to better understand farmers' mind-sets. In this article I present some insights to farmers' knowledge and mind-sets, drawn from sociological research undertaken by Teagasc and further afield.

Motivators: money, pride & relationships

My starting point is the work of a French sociologist, Pierre Bourdieu, who wrote about the different types of things that are important to, and motivate people. Understanding what motivates people is an important starting point in setting out to influence people. If we know what is important to and valued by farmers, then we may understand and more successfully communicate the value of the technologies or practices that we are advocating. Put simply, understanding the wide range of 'carrots' that may incentivise farmers is valuable for successful advisory interactions with farmers. We know that farmers are not motivated only by profit.

Research has highlighted the importance of *cultural and social capital* to farmers (Macken-Walsh et al., 2012). Cultural capital is what farmers have pride in. Social capital refers to the value farmers place on their relationships with others - family and community members for example. Examples of these forms of capital are: the pride associated with farmland as much because it is an heirloom as an economic asset; the value farmers place on having a successor to take over the family; the pride farmers have in impressive farm machinery; and the growing esteem associated with the achievement of agricultural education in farm families. Farmers are more likely to favour agricultural production practices and technologies that enhance their economic, cultural and social capital.

A meaningful interaction between an advisor and farmer takes into account the economic, social and cultural values of farmers. By addressing and navigating the social terrain of the interaction, influence can occur. In fact, through meaningful interactions, values can be changed and new values can potentially emerge.

Farmers' Knowledge: facts, lore & habits

The Australian sociologist Frank Vanclay reminds us that 'farmers have their own knowledge' and in farmers' minds, 'science and extension do not have automatic legitimacy and credibility' (Vanclay, 2004, 220).

Farmers' existing knowledge shapes how farmers interpret and engage with new knowledge. As such, influencing farmers' practices not only involves a process of introducing knowledge, but a process to change

existing knowledge. Research undertaken by Teagasc (Macken-Walsh et al., 2016) has identified three broad categories of knowledge held by farmers.

Farmers make '*knowledge claims'*, knowledge that they believe to be factual. Undertaking research to identify farmers' knowledge claims can allow the identification of strengths, weaknesses and gaps in the uptake or absorption of scientific and technical knowledge. It can also identify erroneous knowledge that is circulating, so that extension may target that erroneous knowledge.

A second knowledge type is called *'cultural scripts'*. Cultural scripts are essentially lore, parables or stories that are shared by farmers. There is generally a 'lesson' to be learned from the story and research has found that scripts are powerfully influential on farmers. Not only is it important for advisors to be aware of scripts in their interactions with farmers but it is also possible to disseminate particular scripts or, indeed, to create new ones.

A third category of knowledge relates to farmers' *habits and routines (practical consciousness)*. It's important to note that farmers, like all other people, may not be consciously aware of their habits and routines. Through open discussion of habits and routines, enhancements or changes may be considered. Also, farmers' routines and habits may offer new ideas to advisors about what works effectively at farm level. Furthermore, new workable habits and routines can be created by farmers and advisors collaboratively in true knowledge exchange processes at farm-level.

Actors: who is influential and why?

Teagasc has undertaken research on the types of actors who are more and less influential on Irish farmers (McDonald et al., 2014; McDonald and Macken-Walsh, 2016).

Farmer peers were found to have significant influence on farmers' decisions: the advice of farmer peers was perceived as credible, useful and trustworthy because of its basis of practical, real-life experience. Family members were also highly influential on farmers and had the ultimate influence on major strategic decisions, such as decisions to embark on new enterprises.

Where 'expert' actors were concerned, we found that coercive behaviour was viewed unfavourably by farmers and undermined the potential for actors to be influential. On the other hand, where there were interactions characterised by parity, a good rapport, and where the farmer received customised advice, an advisor could have very significant influence on farmers' decisions.

Advisors – as well as family members - were highly influential in supporting major strategic development decisions on farms, particularly where the farmers relied on a 'package' of advisory supports to achieve their goals (Macken-Walsh et al., 2012). They were less likely to embark upon such ventures if they were not confident that they had the necessary supports.

Peers and advisors with whom farmers had good interactions could be highly influential on everyday production and management decisions. We found that the more influential actors were on farmers, the more likely farmers were to critique their advice. This is illustrative of the equal power relationships between farmers and influential actors. Parity, rapport and a sense of being equal are necessary conditions

for the debate and deliberation needed for successful learning. Accompanying such interactions is a readiness to critique.

The advisor as facilitator

Our research has focused on the role of the advisor as a facilitator (Macken-Walsh and O'Dwyer, 2016). Teagasc advisors are prominently involved in facilitating farmers to learn in peer-to-peer fora such as discussion groups.

How discussion groups, and information that is channelled and generated through groups, influence and impact positively on farmers relies to a significant extent on the group dynamic and relationships within it. However, facilitators can help create supportive group dynamics and relationships between members.

Teagasc research has examined in-depth the 'ingredients' for a successful discussion group, from farmers' perspectives*: trust, solidarity, fun and enjoyment*, and a sense of *solidarity*. The strategic encouragement of sub-groups and 'buddy pairs' between members; building group identity and solidarity; allowing social unstructured conversation between members; and avoiding negative criticism within the group are examples of the actions identified. Such practical actions characterise the relational aspects of quality advisory interactions through which influence occurs. Qualities of collaboration, trust, parity and lack of fear are necessary for open and equal debate and are at the core of conditions necessary for influence to occur.

Conclusion

The European Innovation Partnership and its underlying concept of the Agricultural Innovation System (AIS) affirm the growing emphasis on knowledge exchange rather than technology transfer. The EIP recognises diverse actors, the legitimacy of their diverse perspectives and knowledge, and the value of diversity for innovation.

Today's advisor relies less on traditional forms of influence such as 'informing' and is challenged with working in 'partnership' with farmers (Arnstein, 1969). By 'letting go' of traditional attempts at exercising influence, such as coercion and instruction, more legitimate and credible forms of influence may happen through parity, debate, deliberation and learning.

As advisory policy and practice becomes more attuned to the possibilities of successful interactions with farmers, the question of *how advisors influence farmers* transforms into the question of *how advisors and farmers engage in mutual influence?* If knowledge exchange between farmers and other actors in the AIS is truly achieved, an inevitable outcome must be an acceptance of farmers' lack of uptake of the ideas and proposals of others. Another inevitable outcome is the incorporation of farmers' knowledge and ideas to the co-conception and co-design of new technologies and practices. There is increasing commercial and policy advocacy of such approaches, which stand to increase the number of farmers adopting and implementing new technologies and practices but also the innovativeness of the technologies and practices.

References

Macken-Walsh, A. and O'Dwyer, T. (2016) Discussion Groups: Five Key Ingredients for Success, Irish Farmers' Journal, 7th April 2016.

McDonald, R., Macken-Walsh, A. (*2016 forthcoming)* An Actor-Oriented Approach to Understanding Dairy Farming in a Liberalised Regime: a case study of Ireland's New Entrant Scheme *Land Use Policy*, Elsevier

Macken-Walsh, A., Moran, L., McAloon, C., Doherty, M., Whyte, P. (2016) Using Sociology to Enhance Herd Health Interventions, *Teagasc REDP WP Series.*

McDonald, R., Macken-Walsh, A., Pierce, K., Horan, B. (2014) Farmers' Responses to a Deregulated Dairy Regime: insights from Ireland's New Entrants Scheme, *Land Use Policy*, Elsevier, Vol. 41, Nov. 2014, pp. 21-30 Elsevier, ISSN: 0264-8377 ISSN: 0264-8377

Macken-Walsh, A. (2016) Governance, Partnerships and Power in (eds) Shucksmith, M. and Brown, D. L. International Handbook of Rural Studies, Routledge.

Macken-Walsh, A., Crosson, P., Murray, A. (2012) A Qualitative Study of Irish Beef Farmers' Production Decisions: Summary and Implications for Extension, Teagasc, Oakpark, Carlow, November 2012. http://www.teagasc.ie/publications/view_publication.aspx?PublicationID=3210

Vanclay, F. Social principles for agricultural extension to assist in the promotion of natural resource management", *Australian Journal of Experimental Agriculture,* 44, 3, 213-222, 2004

Teagasc Technology Foresight Report 2035

Executive Summary

– vision, context, emerging technologies, implementation

Dr Frank O'Mara

Vision

The Teagasc Vision for Technology-Driven Transformation

In 2035, the Irish agri-food and rural economy will have been transformed by a series of new systems and services enabled by the convergence of new technologies from the fields of ICT, biotechnology, nanotechnology and molecular biology. Teagasc, along with its partners, will play a key role in this transformation as architect of these new systems and as instigator of the partnerships and collaborations needed to make them happen. These new services will have boosted the prosperity of farmers, processors and other agri-food entrepreneurs while respecting the most rigorous international standards around climate change and protection of the environment.

Context

The agri-food and bioeconomy sector is a very significant part of the Irish economy. Its long-term competitiveness and sustainability are priority concerns for national policy. Agriculture, in particular, faces significant challenges in the coming decades. It must produce more food for a growing, increasingly affluent global population while vying for access to increasingly scarce natural resources, preserving biodiversity and water quality, restoring fragile ecosystems and mitigating the effects of climate change. It must also adapt to new plant and animal disease threats.

It is in this context that the long-term future of Irish agriculture and food must be considered. The industry-led strategy launched in 2015, entitled *Food Wise 2025*, sets out ambitious growth targets while acknowledging the need to deal with many challenges. The continuous development and application of new technologies will be crucial to the realisation of these ambitions.

Teagasc Technology Foresight 2035 focuses on the identification of emerging technologies that will drive the competitiveness and sustainable growth of the Irish agri-food sector over the next 20 years. Its goal is to identify new areas of technology in which Ireland needs to invest.

Emerging technologies

A key conclusion of the project is that the agri-food industry is on the verge of a revolution in the application of powerful new technologies.

Increasingly rapid advances in ICT and molecular biology have the potential to transform the sector. It is essential for the success of Irish agri-food and related industries that Ireland is a central player in this revolution. Investment in new and existing technologies will play a decisive role in enabling the sector to sustainably intensify production and to grow output, exports and jobs while respecting the environment. Harnessing this transformation will not only enable ambitious increases in the export of world-class agricultural produce, but will also drive the completion of a dynamic circular bioeconomy[2] creating new jobs and new opportunities.

The big challenge now is to identify which new areas of technology truly matter. Our focus is on those which will have the greatest potential for economic impact and transformation by 2035.

With the aid of more than 200 experts, and in consultation with industry stakeholders, the following five areas have been identified as priorities for research and innovation:

1. Plant and animal genomics and related technologies
2. Human, animal and soil microbiota
3. Digital technologies
4. New technologies for food processing
5. Transformation in the food value chain system

Plant and animal genomics and related technologies*:* Over the last ten years, the life sciences and molecular biology sectors have developed a range of new techniques which are potential game-changers for the agri-food sector. These include next-generation sequencing (NGS), whole-biome sequencing, gene editing and synthetic biology. Teagasc is already a key player with the Irish Cattle Breeding Federation (ICBF) in leading one of the most ambitious programmes in the world in the application of genomics in the dairy and beef sectors.

These technologies have the potential to transform the breeding of high-performance plants and animals. Teagasc and its partners will develop the services and capabilities needed to exploit the revolutionary new developments that are happening in this domain.

Human, animal and soil microbiota*:* It has long been recognised that natural environments, ranging from soils and grasslands to human and animal digestive tracts, contain complex communities of microscopic life forms. These communities have not only evolved to survive and proliferate in these environments, but they also perform complex higher-level functions in symbiosis with larger living systems. They play an important role in every aspect of agri-food value chains and we are now beginning to better understand their importance for food production, the health and nutrition of humans, animals and soils, as well as for the health of the environment.

Recent advances in computer processing and NGS allow us to study these microbiota at a much deeper level. We are beginning to see how the microbiota of the human gastrointestinal tract (GIT) can drive the development of new products and services for human health and nutrition. These will target the

[2] A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

management of allergies, intolerances, appetite and weight gain, as well as chronic lifestyle-related conditions such as obesity and diabetes. We are beginning to understand how the microbiota of the rumen in livestock has an impact on feed conversion and rate of emission of greenhouse gases (GHG). We are also beginning to understand how the microbiota of the soil has an impact on issues such as grassland productivity, nutrient cycling and carbon sequestration. These insights will help us improve the performance of the beef and dairy sectors based on better nutritional strategies for livestock and the grasslands they feed on.

Digital technologies: Digital technologies enable the data intensification of management systems and the automation of tasks such as milking, herd management, feeding, identification of oestrus, weed and plant disease management, as well as the simplification and automation of administration.

The adoption of technologies such as precision agriculture (PA) and robotic milking in Ireland has been slow until now. Arguably, cost and complexity have been prohibiting factors. Existing systems target the biggest producers employing technologically sophisticated personnel. But this will change. Between now and 2035 we will see the large-scale adoption of automation based on sensor-rich, data-intensive systems using nanotechnologies, IoT (internet of things) and IoFT (internet of farm things) systems, as well as autonomous vehicles and drones, tractor-based sensing and micro-satellite deployments, and robotic systems for the handling of delicate produce such as fruit and vegetables. Farmers will do more and better with lower labour inputs. This will be facilitated both by the rollout of next-generation network broadband and the growing impact of the digital economy in many other economic sectors.

New technologies for food processing*:* Between now and 2035 the food industry will continue to perfect advanced methods for fractioning, preserving and formulating innovative, safe and natural food products. These will increasingly exploit insights from our understanding of food chain microbiota. The biggest transformations, however, will be driven from the consumer end of the value chain, and will propagate back from consumers to actors in retail, distribution and food service, to secondary and primary processors, all the way to growers and producers.

One of the challenges for the food industry is to offset potential losses of revenue associated with the elimination of food waste, which corresponds roughly to one-third (approximately 1.3 billion tonnes) of global food production, with new sources of revenue based on value-added services for convenience, lifestyle, health and nutrition. Individuals vary so much in terms of their lifestyle that there is considerable scope for improvement in terms of better nutrition and lower waste. Technologies such as 3D printing and advanced robotics, combined with big data from smart wearables and data based on the personal gene type of consumers, will enable the food industry to micro-segment their products.

Transformation in the food value chain system*:* The supply chains and value chains of the agri-food sector in 2035 will be very different from those we know today. They will be much more knowledge-intensive involving the trading or exchange of vast quantities of data to drive more productive resource-efficient operations and services. They will employ economic and business models very different from those employed today. Enabled by low cost sensors connected via the IoFT, new business models will make more use of technology. Practices such as collaborative farming and leasing might be much more widespread and much more sophisticated in approach. New actors will emerge focused on the processing of biomass and organic waste. They will produce a wide range of products, biofuels and green chemicals, composts, animal feeds and food additives, as well as high-value molecules for food, pharma and cosmetics.

Implementing the vision

Teagasc is currently working with its partners and stakeholders to develop long-term research and knowledge transfer programmes which reflect the five priority areas of technology identified.

Partnering and collaboration are needed more than ever to understand and integrate the diverse new sources of knowledge and data that will drive new services, systems and management practices. These will enable growth based on sustainable intensification, while addressing policy and regulatory issues that will arise, in addition to the concerns of consumers and citizens in Ireland and in its export markets.

The 'smart farming ecosystem' of the future will involve a complex range of players in the public and private sectors. Teagasc is well positioned to assume a national leadership role, establishing research and innovation platforms to ensure the timely development of national roadmaps for each of these priorities.

As with all scientific and technological advances, acceptance of new technologies cannot be assumed. Consumers have resisted such developments in the past for cognitive and emotive reasons, with enormous cost implications. The social sciences have an important role to play in integrating science and technology push with demand pull. This will support informed consumer decision-making and help to ensure that technologies that offer significant benefits to society as well as the economy are not rejected.

Workshop 1: Advisors self-leadership in diversity of farmers/actors and their relationship

Presenter: Dr Tom O'Dwyer

Moderator: Mark Moore

"If you want something you've never had, you must be willing to do something you've never done"
Thomas Jefferson (1743 – 1826), 3rd American President

Summary

Advisors play an influential role in the rural communities within which they work. Often working alone, they are challenged to be self-motivated when dealing with a diversity of farmers/ actors. A question which is often asked is how do advisors motivate themselves for success? Self-leadership refers to the thoughts and actions that people use to influence themselves. It allows individuals to display more self-discipline over their behaviour, build intrinsic motivation into their work and to mentally cope with frustrations and setbacks, thereby leading to improved performance. Advisory organisations require individuals who are self-leaders; after all if you cannot influence yourself, how can you expect to influence others?

Self-leadership explained

Most leadership definitions refer to the influence of an individual (the leader) on the behaviour of followers. The implication is that there is more than one person involved and that influence is exerted by a person with more power (the leader) over others with less (the followers). Self-leadership theory suggests that the attitudes, beliefs, habits and motivational preferences of individuals make a critical difference to individual accomplishments and that effective self-leaders use a variety of self-influence strategies to consciously influence their own thoughts and behaviour. It puts the focus on each individual while acknowledging that individuals must work together for organisational success. It also implies that although an individual's behaviours are often directed by external forces, individual actions in the workplace are ultimately controlled by internal forces.

Characteristics such as an ability to 'think for themselves', 'be their own person', 'take initiative', 'go above and beyond the job' and 'be a self-starter' are frequently suggested as the hallmark of an effective self-leader. Self-leadership is defined as a process through which individuals guide, influence and lead themselves through the use of a series of behavioural and cognitive strategies. Self-leadership is more than

simply regulating compliance with external standards ('how' something is to be achieved); it also encompasses 'what' is to be accomplished (the setting of standards or objectives); 'why' it is to be accomplished (the analysis of the current situation) as well as 'how' to accomplish it.

The self-leadership strategies

There are three primary categories of self-leadership strategies: behaviour focussed, cognitive focussed and natural rewards strategies. The behaviour focussed category of self-leadership strives to heighten one's self-awareness in order to facilitate behavioural management, especially for necessary but unpleasant tasks. Strategies include self-observation (self-awareness), self-goal setting, self-cueing, self-reward and self-correcting feedback. The second category of cognitive focussed strategies concentrates on establishing and altering thought patterns in desirable ways. Strategies include visualisation (mental imagery), self-talk and evaluating beliefs and attitudes. Finally, the third category of natural rewards strategies involves creating a positive identification with work through the creation of self-motivating situations. There are two types of natural rewards strategies: building natural rewards into tasks and focussing on the natural reward inherent in tasks. In summary, the three self-leadership strategies allow individuals to display more self-discipline over their behaviour, build intrinsic motivation into their work and to mentally cope with frustrations and setbacks, thereby leading to improved performance.

Self-leadership paradoxes

Self-leadership does not suggest that external leadership or management is absent. Indeed it should not be seen as a 'substitute for leadership' but rather as a self-influence process that can be complementary to and facilitated by external leadership. In fact, empowering leadership is a form of leader behaviour that has been shown to enhance follower self-leadership. Furthermore, self-leadership is not really about followers doing what they want. Rather, the challenge is to develop and maintain a suitable balance that followers can be self-leaders within the formal management structure. Perhaps the organisation may have to tolerate a certain amount of 'productive disobedience'. Notwithstanding this, an individual has a responsibility *to* act according to organisational rules and regulations while being responsible *for* one's own thoughts, feelings and behaviours. In summary, although self-leadership provides opportunities for the organisation, it may provide challenges for both managers and their subordinates.

Recent self-leadership survey

In a recent quantitative study conducted with Teagasc staff, the Revised Self-Leadership Questionnaire (Houghton and Neck, 2002) was administered using a web-based survey. A self-report survey was used as it

was believed that individual advisors were best placed to self-report on their awareness and use of the full range of self-leadership strategies due to the psychological nature of the variables involved. In total 143 advisors completed the survey. Table 1 summarises the self-perceptions of individual advisors to each of the nine self-leadership strategies.

Table 1: Advisors perceptions of self-leadership strategies (n = 143, 2014)

Dimension	Strategy	Mean	Std. Dev.
Behaviour focussed strategies	Self-observation	3.65	0.54
	Self-goal setting	3.55	0.69
	Self-reward	2.99	0.74
	Self-punishment	3.47	0.76
	Self-cueing	3.74	0.81
Natural reward strategies	Focusing thoughts on natural rewards	3.40	0.67
	Building natural rewards into tasks	3.68	0.58
Constructive thought pattern strategies	Visualizing successful performance	3.42	0.72
	Self-talk	3.01	0.93
	Evaluating beliefs and assumptions	3.41	0.63
Note: Respondents expressed their perceptions to a series of 37 self-leadership statements on a 5-point Likert scale: 1 = does not describe me at all; 2 = does not describe me well; 3 = describes me somewhat; 4 = describes me well; 5 = describes me very well.			

Overall, advisors reported an average self-leadership score of 3.35 (sd = 0.52). There was no difference in self-leadership self-reported by advisors based on age, tenure in the organisation, tenure in the current role or gender. Figure 1 presents the distribution of self-leadership scores self-reported by advisors. Further research (not reported here) has demonstrated the link between self-leadership and both work performance and job satisfaction.

Teagasc perspective on self-leadership

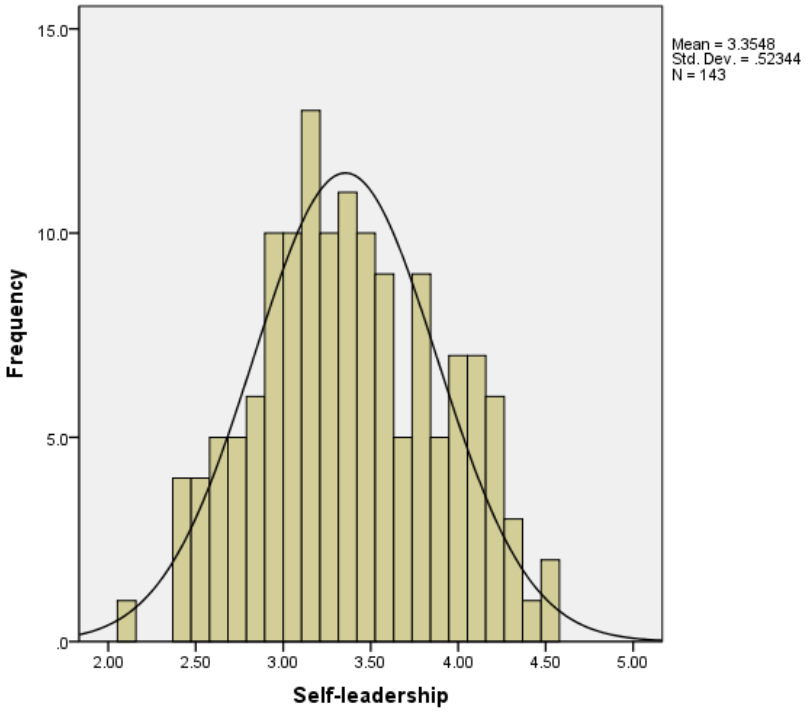
Teagasc values self-leadership recognising it as *'the fuel in the tank'* that *'gets people in…and engaged in what needs to be done'*. Teagasc advisors perform a leadership role in the community within which they work – supplying information, supporting innovation, building relationships and influencing opinions. It is hard to see how individual advisors can fulfil this role without self-leadership: *'you cannot lead others unless you understand, and are capable of, leading yourself'*.

In fact, Teagasc advisors are required to be *'self-motivated to succeed'* and if not succeeding then they should be *'personally concerned'* or self-aware of how their performance is impacting on others. Furthermore, it is expected that our advisors are *'vocationally driven'* receiving their motivation *'from the job itself, from the ethos of the job or the mission of the job'*. Equally the need for a formal management

structure is recognised: *'self-leadership is not about doing what you would like…there has to be order, governance and structure'* but such structures must not '*stifle'* or *'overpower'* self-leadership opportunities.

The ambition within Teagasc is to develop advisors who have the freedom to deliver on the Teagasc mission, while being responsible to the organisation and for their own performance. It is recognised that the organisation can *'accelerate and facilitate'* the development of self-leadership by advisors. Managers are increasingly empowering advisors: *'it is those who are putting on the boots every day that really know'*. Equally, it is recognised that *'the number one barrier* [to self-leadership] *is not practising empowering leadership, not being prepared to give people the freedom to flourish'*. While many advisors will respond positively to empowerment, others will require a *'nudge'* to move in the right direction. Finally, it is recognised that people may not come naturally to self-leadership but a number of initiatives and a supportive environment have helped

Figure 1: Distribution of self-leadership as self-reported by Teagasc Advisors (2014)



Conclusion

Overall, advisors use a variety of self-leadership strategies – some more than others - to motivate themselves to succeed. Self-leadership has potential application as a personal development strategy to be

used by an advisory organisation and its employees – both management and staff. But not all individuals are self-leaders and most individuals usually require training in self-leadership strategies if they are to successfully adopt the full range of strategies. Following the training intervention it is equally important that participants are provided with self-leadership development opportunities, are supported in using the self-leadership strategies and are aware of others (managers, peers) using self-leadership strategies.

Summary/ take home messages	Advisory organisations require individuals who are self-leaders. This will allow individual advisors to cope with a diversity of farmers/ actors and requests while delivering on the objectives of their organisation. After all if you cannot influence yourself, how can you expect to influence others?

References

Bryant, A. and Kazan, A. (2013) *Self-leadership,* New York: McGraw Hill.

Neck, C. P. and Manz, C. C. (2013) *Mastering Self-leadership: empowering yourself for personal excellence* (6th edition), Upper Saddle River, NJ, Prentice Hall.

Ricketts, K. G., Carter, H. S., Place, N. T. and McCoy, T. (2012) 'A look inside: self-leadership perceptions of extension educators', *Journal of Extension*, Vol. 50, No. 5, [online] (cited 29 October 2012) Available from www.joe.org/joe/2012october/a3.php?pdf=1

Stewart, G. L., Coutright, S. H. and Manz, C. C. (2011) 'Self-leadership: a multilevel review', *Journal of Management*, Vol. 37, No. 1, pp. 185 – 222.

Workshop Exercises

Participants will be assigned to pairs or small groups and asked to complete one of the following two exercises.

'Discovering your Self Talk' exercise

Think of a recent challenging work situation in which you tended to think negatively of yourself.

1. What were you telling yourself (negative thoughts) as you prepared for and completed the task?
2. Identify words or thoughts which you could use to stop the negative thoughts.
3. Replace the negative thoughts with three positive statements that are focussed on what can be done.

'Imagined Experiences' exercise

1. Identify ways in which your imagined experiences have helped or hindered your performance. Provide specific examples.
2. Identify how you could use positive visualisation techniques in the future.

Werkstatt 1: Eigenständigkeit von Beratern in einer Vielfalt von Bauern/Akteuren und deren Beziehungen

Präsentiert von: Dr Tom O'Dwyer

Moderator: Mark Moore

Ziel

Beratungsorganisationen benötigen Mitarbeiter, welche eigenständig arbeiten. Dieser Workshop dient zur Ergründung, wie Berater sich selbst motivieren können, um erfolgreich zu sein. Eigenständigkeit ist der Grundgedanke für Menschen, um sich selbst zu beeinflussen. Der Workshop 1 wird aufzeigen, wie man mehr Selbstdisziplin an den Tag legt, um sich bei der Arbeit zu motivieren und mit Frustration und Rückschlägen umgehen zu können und somit seine Leistung zu verbessern.

Die Entwicklung eines neuen Züchtungs-Index, dem EBI, für irisches Milchvieh wurde erfolgreich auf irische Milchhöfe ausgeweitet. Teagascs Beratungsdienst hat den Index durch folgendes erweitert:

- Einbeziehen von nationalen Maßstäben des EBI als Bestandteil der Schlüsselindikatoren für Leistung im Beratungsprogramm für Milchwirtschaft
- Erweiterung von EBI-Mitteilungen durch Hofbesuche, Gesprächskreise für Bauern und nationale Veranstaltungen
- Kontaktaufnahme mit anderen Agenturen wie der irischen Viehzucht-Föderation, AI-Unternehmen und milchverarbeitenden Betrieben um sicherzustellen, dass alle Instanzen der Industrie denselben Wissensstand haben, um die Ziele des EBI an Bauern zu werben

Workshop 2: Farm Diversification Advisors' Experiences: Good and Not So Good

Presenter: Hanna Green, "Landratsamt Breisgau-Hochschwarzwald"

Moderator: James McDonnell

Introduction

For 20 years I have provided advice and support to agricultural families in the fields of agro tourism, direct marketing and farm gastronomy. My employer is the "Landratsamt Breisgau-Hochschwarzwald", I am a government official. Besides the consulting tasks, I am responsible for adult education in the mentioned themes. Every year we run about four to six seminars. In our practical workshops and seminars we try to transfer knowledge about regional foods, "from farm to fork", to our subscribers. I am a certified coach in agriculture since 2012, last year I received the CECRA Certificate.

My sphere of activity is in the southwest of Germany, in the federal state of Baden-Württemberg. Just across the Rhine River there is France. It is close to Switzerland, approximately 70 km south. In the district live about 260.000 inhabitants. In the university town of Freiburg live around 220.000 people. The area is rural, but fully developed. Due to its unique landscape the region is of the most important tourist destination in Baden-Württemberg for recreation and activities.

The Department of Agriculture in the "Landratsamt Breigau-Hochschwarzwald"

The federal state of Baden-Württemberg is divided in four administrative districts – Stuttgart, Tübingen, Karlsruhe und Freiburg. There are 35 "Lower agricultural authorities" in the counties. Our head office is in Breisach am Rhein and a branch office in Titisee-Neustadt (60 km away). From the Rhine valley (190 m NN) across the Feldberg (1493 m NN) to the Baar a plateau in our east border (appr. 90 km), we have different cultivations: crops, corn/maize seed, soya bean. In the warm Rhine Valley there is viticulture, the wine is famous in Germany. You can also find fruit production (apples, pears, prunes, cherries, walnuts), and special crops like strawberries, asparagus, vegetables. In the higher altitudes there are the enclosed pastures and meadows, dairy and beef cattle farms and the private owned forests. Totally 50.000 ha surface, approximately 2.900 farmers, in partly very small structures. In Freiburg is the regional dairy factory. The "Hinterwälder Rinder" (a special small breed of cows located in the Black Forrest similar to the "Simmentaler" in Switzerland), sheep and goats are "landscapers on four legs" and keep the landscape trim, which is important for our tourism.

The remit of the Department of Agriculture is preservation and the environmentally appropriate agricultural land use, a valuable fact for tourism and local recreation. Another important remit is to secure the farm families income.

Wineries in the Rhine Valley

The volcanic "Kaiserstuhl" area with 5,140 ha vines is the warmest region in Germany. For wine lovers it is a special experience to spend their holidays on a winery or wine estate. Regional Wine can be purchased in exquisite "Vinothekes" or rustic wine taverns (identified by the hanging broom). The authentic wine villages invite guests to experience traditional German hospitality. In the 70th a lot of farms were resettled in their fields, due to the fact that there were no opportunities for the farms to expand in the villages. There is a law in Germany to save the outer zone with restriction of buildings.

Farms in the Black Forest

World famous is the Black Forest, with hiking and winter recreation areas around the Feldberg and Titisee. Well known are the water wheels, cuckoo clocks, black forest cake. Not to mention the lovely Black Forest farm houses, some are over 200 years old and under protection of historic interest. The farms were run self-sufficient, under the big roof was the home for the family, the livestock and the winter feed for the animals, one can still find that today. Grandma and grandpa lived in a separate little house "Lipting". There was a chapel, a saw mill and grain mill (run by waterwheel) and a little cottage for stockpile. In the new buildings there are often holiday flats for additional income. A lot of farms have the permission to distil up to 300 l of Alcohol.

Tradition and modern World

Question: How do we make the transition from tradition to modern world? How do we keep the good and meaningful, but also implement innovative ideas and find ways to do things successfully? What does it need in a region to stay attractive for Tourism?

Diversification in Baden-Württemberg an overview

In agri tourism – vacation apartments, guest rooms an important.

In farmer to consumer direct marketing – farm stores, market stalls, wine stores, cheese dairy artisan product and outlets. Gastronomy with farm products, wine taverns and catering also present opportunities. There is increased demand for home economic services / renewable energy support.

Fruit and wine farm with direct farm marketing, café and holiday flats

Located just outside of Freiburg in the fruit and vine orchards, is this farm with asparagus as a special culture in the spring. The additional café and farm shop is found in the building where previously cows and pigs had their stables. The family also offers vacation rentals, flats and guest rooms. These have been extensively renovated last year. The family is a typical multigenerational household. Not long ago the operational handover took place. The new operators are working on a master plan for the operation of the farm and all the different branches of diversifications. So far, any income mainstay was perceived separately and was in the responsibility of different family members.

Question: How can the advisor assist the family and moderate the process with the master plan? How can agricultural premises or buildings on the farm come to a new use and increase income?

Example 2 – Farm holidays

This farm is located on the outskirts of a small community in the "Dreisamtal" at the foot of the Black Forest. There are plain fields in the valley to grow corn, as well as steep hills with permanent grassland for the dairy cows. The difficult milk price urged the young family to expand their touristic offer. There is well looked after campground connected to the farm, with a little inn. In the past 10 years, there were huge investments in a new holiday home. There is a comfortable wellness area with sauna in the basement. To run an operation branch in these dimensions it takes qualifications. The wife is visiting regularly our education offers. The average occupancy of the holiday apartments is within 250 occupancy days, that is very good (average in Baden-Württemberg 185 days).

Question: How much liabilities are good for an agricultural operation? What are the key factors in agri tourism for success?

Example 3 – Cheese dairy and whey cosmetics

On a hill just outside of Hinterzarten is this farm located, surrounded by ski hills and close to a famous hiking trail. The farm was run as a sideline before the cheese dairy and the whey cosmetics were established. Today the family works in a joint business with another farm in Hinterzarten. That farm produces now the milk for the cheese. The old stable was converted in a cheese and cosmetics manufacturing space. The grasslands are grazed by a Highland herd. Meat and sausages from the Highlands, as well as the cheese and the cosmetic

products are sold in the farm shop and the local weekly market. Another track is the Internet shipping and the delivery to hotels. On the farm there are also “raclette” evenings and group tours offered, the target group mainly affluent customers with a trend to regionalism. The existing guest house with four apartments is currently under construction. The family hopes to rent the flats out again by next summer. This will complete the master business plan.

Question: How many working hours can be used or how much manpower is available for other income mainstays?

Example 4 – farm gastronomy, guest rooms, beef cattle, goose mast

In a valley near Freiburg is this farm operating. The pastures around the farm are very steep; the flat areas are leased and about 5 km away. The main income is generated from the farm gastronomy, were as a lot of manpower is needed here. Most ingredients on the menu are produced on the farm or by other local producers. In recent years much has been invested in the gastro part, the residence of the farmers, a farm bakery and two guest rooms. A new stable for the Limousin beef cattle is planned because of changing regulations and the labor intensive work in the stable. During the summer the stable is used to raise 250 geese. By November they are slaughtered and offered as special menus. Due to the difficult topographic location the new building is expensive. The farmer has an additional training as a chef his wife is master in home economics. She is responsible for the bread and cakes out of the small bakery. The input of labor is very high there is not a lot of family time. There is an investment backlog with the old farm building. The family is looking for solutions.

Question: What are the solutions for this farm now and the future? How can the advisor support the family with a new concept of the old building?

– **Facts in the search of new diversification**

The farm is the family home for generations, there is purchasing power in our district, our landscape needs to be cared for and kept well to maintain a prosperous tourism. We have a reduced price for farm produce, therefore the farm profits fall and the family income is not enough. Old buildings on the farm have to be put to a new use, otherwise they dilapidate.

To start up, it needs: a good idea, to be a clever entrepreneur, adequate qualifications, the readiness for change. Now is a good time? It needs good office management and to be able to associate with people. It also needs a conclusive marketing concept, a realistic financial budget, a unique selling proposition, a suitable location. Last but not least the government statutory regulation has to be fulfilled.

Workshop Exercises

Key questions wishing to be discussed in three groups - each group to one question, recommendations for action and discussion in the plenary.

1. How do we make the transition from tradition to modern life on farms?

2. Is additional income from Diversification saving a farm?

3. My role as a consultant in the process?

What are your experiences to the questions?
What would you do different in your own work?
What is the take home message to other advisors/farmers?

Werkstatt 2: Beratungserfahrungen hinsichtlich landwirtschaftlicher Veränderungen: Gut und nicht so gut

Präsentiert von: Hanna Green

Moderator: James McDonnell

Ziel

Dieser Workshop zielt auf die Ergründung der Möglichkeiten und Herausforderungen für Berater für Veränderungen in der Landwirtschaft im Rheintal- und Schwarzwald-Gebiet. Unterschiedliche Ertragsalternativen werden benötigt, um das Einkommen für Bauernfamilien in diesen Regionen zu stabilisieren und zu verbessern. Zum Beispiel: Wie kann der Berater auf die unterschiedlichen Anforderungen von Milchvieh- oder Schlachtviehbauern und Weinbauern eingehen?

Workshop 3: EUFRAS-IALB – Enabling the 2020 Advisor

Presenter: Andis Kursitis

Moderator: Pablo Asensio

Introduction

CECRA, the Certificate for European Consultants in Rural Areas is a qualification and competence development system for consulting personnel in the rural areas of Europe. Since 2009, CECRA offers a European wide certificate for agricultural and rural advisors who want to improve their consulting skills. At the IALB-EUFRAS Conference 2015 in Solothurn, IALB and EUFRAS signed the Cooperation and Usage Agreement on CECRA. What has happened since, where does CECRA stand on its way to become a Quality Standard in Advisor methodology in Europe? What are the next steps?

Why is CECRA important?

- If an advisor wants to support a farmer or a farmer's family effectively, she/he needs training in advisor methods. Particularly advisory services in Central and Eastern European Regions show great interest in CECRA and formulate a need for competence development of consulting personnel which generally shows good technical qualification but however largely lacks competences in the methodical and social field.
- Today, innovations often require a cooperative strategy. Rural advisory services automatically find themselves in situations where they have to facilitate and steer cooperative learning processes, where interests of different partners have to be mediated and handling social learning, conflict management, organizational development and negotiation professionally become important tasks.
- The new EU EAFRD funding option for advisory work requires a qualification concept for advisors. The management of the interdisciplinary EIP operational groups fostering innovations call for well-trained agrarian advisors in facilitating networking and innovation processes.

What will be the main benefits of CECRA?

- To deal professionally with innovation in agriculture, *rural advisory services* have to adjust to rising requirements in the qualification of their staff, especially regarding the personal, methodological and communicative competences of their advisors. CECRA offers a European wide quality standard for rural advisors.
- In the German Cross-Visit of the AgriSPin Project, Daniel Pascal Klaehre, Horticulture Advisor and CECRA Certificate holder, was asked why he chose CECRA. "I was interested in an international certificate that would also be recognized by other advisory services and abroad. In my advisory work now, every day I'm using the communication technics I got to know in the advisor method trainings at the Bavarian State Academy."
- *Advisors* benefit from the cooperative, international approach, as they can establish and make use of a professional network for experience and knowledge exchange.

CECRA History

CECRA was started 2009 by IALB. The initial development efforts of CECRA were proportionally covered by the six initiating, mostly public, rural training institutions, working together in the AGBS (The "Consortium of Education and Consulting Seminars", an expert committee which represents the agrarian educational institutions in Germany, Austria and Switzerland, see list below). The extension of CECRA to non-German speaking European Areas is in process. 2015 and 2016, 5 new CECRA partners joined.

CECRA Certificates are issued by IALB in the German speaking areas in Central Europe and by EUFRAS in all other European areas.

CECRA Partners (Status May 2016)

AGRIDEA, Lindau (CH) www.agridea.ch	Ltd. Latvian Rural Advisory and Training Centre http://www.llkc.lv/
Führungsakademie für Ernährung, Landwirtschaft und Forsten, Landshut (D) www.fueak.bayern.de	TEAGASC - The Irish Agriculture and Food Development Authority http://www.teagasc.ie/
Hochschule für Agrar- und Umweltpädagogik, Wien (A) www.agrarumweltpaedagogik.ac.at	Bulgarian National Agricultural Advisory Service (NAAS) pkumanova@naas.government.bg http://www.naas.government.bg/en
Landesanstalt für Entwicklung der Landwirtschaft und der ländlichen Räume Schwäbisch Gmünd (D) www.lel-bw.de	Lithuanian Agricultural Advisory Service http://www.lzukt.lt/
Landesbetrieb Landwirtschaft, Bildungsseminar Rauischholzhausen (D) www.llh-hessen.de	Escuela Politecnica Superior (Universidad de Santiago de Compostela), Spain enrique.arbones@usc.es
Abt. 22 - Land-, forst- und hauswirtschaftliche Berufsbildung (I) www.provinz.bozen.it	

Currently, the Federal State of Baden Württemberg makes an important contribution with its 2015/16 Project "Development of a CECRA TTT". The Irish Service Teagasc contributed substantially by organizing and financing the CECRA FastTrack TTT in Dublin 2015.

Link to website www.cecra.net

Workshop Exercises:

- How can we assure QUALITY in advisory work?
- What significance do method trainings and a certification standard have for quality?
- Do the various European countries have a common understanding of the advisors' social competencies and skills (communication, work with clients, and profile of advisor)?
- How far are we at the moment in the partner countries / in interested organisations and what are the next steps in the implementation of the CECRA system?
- SWOT Analysis of Implementation Process

Werkstatt 3: EUFRAS - CECRA – Anordnungen für den Berater von 2020

Präsentiert von: Andis Kursitis

Moderator: Pablo Asensio

Ziel

Die Teilnehmer werden über die Entwicklung, Einführung und Vorteile des allgemeinen europäischen Qualitätsstandards für Berater (CECRA) in Kenntnis gesetzt. CECRA ist die Ausarbeitung von Qualifikation und Kompetenz für beratendes Personal in ländlichen Regionen Europas, welche mit den allgemeinen methodischen Standards in Einklang stehen.

Der Workshop umfasst folgende Fragestellungen:

- Haben die verschiedenen europäischen Staaten ein allgemeines Verständnis für die sozialen Kompetenzen und Fähigkeiten der Berater (Kommunikation, Arbeit mit Kunden, Profil der Beratung)?
- Wie weit sind wir im Moment – in den Partnerstaaten und den nächsten Schritten zur Einführung des Systems?
- Analyse des Einführungs-Prozesses – SWOT-Analyse! (Stärken, Schwächen, Chancen und Gefahren)

Workshop 4: Connecting with hard to reach farms

Presenter: Dr Jim Kinsella

Moderator: Michael Gottstein

Knowledge transfer systems contribute to both the global goal of sustainable food security and, in the case of Ireland, the national vision of increasing the value of primary production by 65% over the next 10 years (Food Wise 2025). Agricultural advisory services play a central role in knowledge transfer processes that enable improved and more sustainable farming practices that meet the dual needs of wider society as consumers and farming communities as producers. Consequently greater attention is now being paid to identifying ways in which farmer - advisory service relationships can be improved, renewed, or else in cases where they have not existed before, established.

Farmers who are hard to reach (HTR) by farm advisory services, can best be understood as those farmers who either do not use farm advisory services or use at a minimum level the services accessible to them. The concept of 'hard to reach' has been most commonly associated with identifying groups in society who are disconnected from and disengaged with public services for which they are entitled. For example, in the early 1970s Kandel examined *hard to reach* adolescents in terms of drug addiction and how public services might engage them. More recently the 'hard to reach' group concept has been applied to farmers in the context of recognising the relationship of certain sub-groups in the farming population with existing farm advisory services including disaffected elderly farmers; farm women; and part-time farmers.

It is estimated that as many as one in three Irish farmers do not contract farm advisory services from either the public or private sector (Kinsella, 2014). Evidence from County Laois (Dunne, 2016) shows that 30% of farmers, in what is regarded a 'strong farming' county, do not use professional advisory services (public or private). In this study the profile of farmers who do not use advisory services ranges from the: 80 year old widowed farmer with a beef enterprise on 25ha of grassland and 10ha of forestry; to the 40 year old part-time farmer who is working in the construction sector, married with children and whose wife also works off the farm. In a study of mastitis control on dairy farms in Holland, Jansen et al. (2010) found that 'hard to reach farmers' were not a homogeneous group, but rather could be divided based on their trust in external information sources regarding mastitis and their orientation toward the outside world. Kelly (2015) found that farmers in County Clare who did not use advisory services could be broadly segmented into the elderly single farmers who had no agricultural education and who had little intention of farm development in the short-medium term and those relatively younger, married farmers who had completed some level of agricultural training and intended to make land and enterprise improvements in the future.

Research undertaken by students of the UCD/Teagasc Masters in Agricultural Innovation Support Programme on hard to reach farmers has highlighted some of the challenges facing advisory services in developing and expanding relationships with these farmers. Coakley (2016) examined dairy farmers low engagement with advisory services on soil management in Kerry and found that an important reason given by farmers for the low level of usage of advisory services was due to their discomfort in discussion groups in which they did not feel confident and instead they preferred public events such as open days. The low uptake of advisory services by dairy farms in Limerick was assessed by Kavanagh (2015) who found that farmers either felt they were too old to engage with the existing suite of 'modern advisory' services or else felt that the increasingly popular farmer discussion groups were far too time-consuming for them to engage

with. This study also identified HTR farmers' preference for a return to the tried and tested method of farm advisory visits which allowed one-to-one contact between the farmer and the advisor. Masterson (2016) studied the case of beef and sheep farmers in Roscommon who used the lowest and most basic level of contracted farm advisory services and found that many were part-time farmers who the farm advisors felt had little intention to develop and/or intensify their existing systems.

Support Reading:

Jansen et al, 2010. '*Debunking the myth of the hard-to-reach farmer: Effective communication on udder health'* in Journal of Dairy Science, Volume 93, Issue 3. March 2010.

http://www.journalofdairyscience.org/article/S0022-0302(10)00096-2/pdf

References:

Coakley, O. (2016). *Categorisation of Hard-to-Reach Dairy Farmers in Kerry with regards Soil Fertility in terms of their Views and Knowledge towards engaging with Knowledge Transfer*. UCD/Teagasc MAgrSc (MAIS) Programme (2014-16).

Dunne, A. (2016). *An Examination of the Impact of Agricultural Extension Services on Rural Development - Case Study of County Laois*. UCD PhD Programme (2013-2016).

Kavanagh, C. (2015). *A study of engagement between Teagasc Advisory Services and 'hard to reach' dairy farmers in Co. Limerick in the adoption of specific technologies*. UCD/Teagasc MAgrSc (MAIS) Programme (2014-16).

Kinsella, J. (2014). *Advisory Services at a Crossroads*. *Agricultural Science Association Annual Conference 2014: Keeping pace with global food trends*, Naas, September 12th 2014

Masterson, J. (2015). *Review of Advisory tools and methodologies to engage with 'hard to reach' drystock farmers*. UCD/Teagasc MAgrSc (MAIS) Programme (2014-16).

Workshop Exercises

Why do some farmers not engage with farm advisory services?

What are common characteristics of these farmers?

Why should advisory services try to reach these farmers?

How best to connect and provide advisory services to these farmers?

Werkstatt 4:Verbindungen mit schwer erreichbaren Betrieben

Präsentiert von: Dr. Jim Kinsella

Moderator: Michael Gottstein

Ziel

Dieser Workshop wird die Charakteristika von „schwer erreichbaren“ Bauern und warum diese einen so geringen Kontakt zu Beratungsdiensten pflegen diskutieren. Eine Antwort auf diese Fragen wird zur Identifizierung der Ursachen, warum eine nicht geringe Anzahl von irischen Bauern wenig oder gar keinen Kontakt zu öffentlichen oder privaten landwirtschaftlichen Beratungsdiensten haben helfen und bildet die Basis für das Verständnis, wie man am besten Kontakt zu diesen Bauern aufnehmen kann. Die Forschung der letzten zwei Jahre in Irland hat zur Lösung der Schlüsselfragen und Identifizierung einiger Möglichkeiten, diese Betriebe zur vermehrten Inanspruchnahme von Beratungsdiensten zu bewegen bei geholfen.

Workshop 5: Quantifying the added value of advisory services

Presenter: George Ramsbottom

Moderator: Dr Doris Läpple

The Economic Breeding Index (EBI), developed by the Irish Cattle Breeding Federation (ICBF), is now widely used by Irish dairy farmers in selecting sires for their dairy herds. Teagasc's advisory service has incorporated EBI targets into its advisory programme and employed a wide variety of extension methodologies to promote it. The result has been its widespread acceptance which in turn has resulted in a doubling of the proportion replacement heifers sired through AI and a rapid increase in their genetic merit.

Background

Teagasc is a "semi-state organisation" which provides integrated research, advisory and training services for the agriculture and food industry in Ireland. One third of its budget supports Teagasc's advisory service, which has both a farm business and a national social policy remit. The organisation employs approximately 80 Business and Technology dairy advisors and five dairy specialists who directly support almost two thirds of Ireland's 17,000 dairy farmers.

For full time, commercially viable farms, the focus is on improving business efficiency to generate higher profit. Analysis of on-farm genetic and financial data from over 1,100 dairy herds has shown that EBI is associated with an increase in profit per cow (Ramsbottom, 2012). Thus EBI targets are included as key performance indicators in Teagasc's dairy advisory programme.

Dairy production systems in Ireland are seasonal (Berry et al., 2006) and highly dependent on achieving high fertility levels in dairy cows (Shalloo et al., 2004). When EBI was developed, the Irish dairy industry was ready for change. Over the previous 20 years, the Relative Breeding Index (RBI) which focused on genetic improvement for milk production had delivered on its objective - to produce higher yielding cows. However it underestimated the antagonistic genetic relationship between milk production and fertility resulting in a less fertile national herd (Evans et al., 2002; Berry et al., 2003). Indeed research showed that lower RBI dairy cattle were more profitable than higher RBI stock when their higher fertility performance was accounted for (Veerkamp et al., 2000). When modelled, farm profit was most sensitive to changes in milk price followed by replacement rate (Evans et al., 2006).

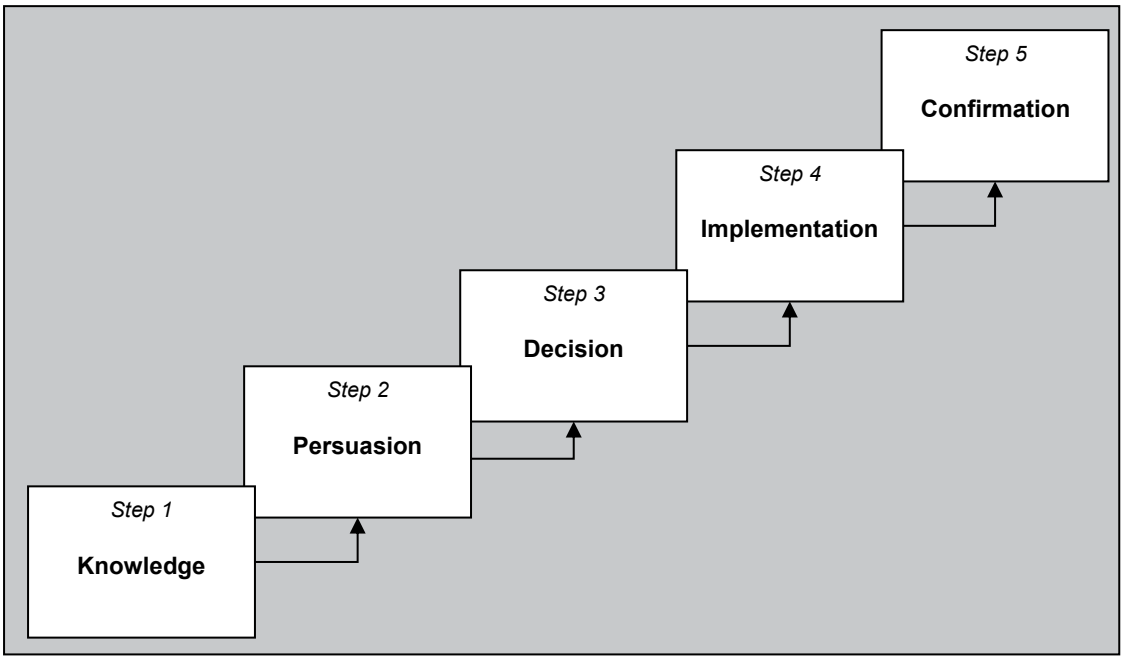
The use of AI was falling in tandem with the decline in fertility of the national dairy herd, most dairy replacements were sired by stock bulls and genetic merit of the replacement heifers entering the national dairy herd had stagnated (Wickham et al. 2012).

Starting in the late 1990's Teagasc and ICBF developed strong developed strong collaborative linkages in education, research and advice. These linkages continue to this day. From a Teagasc advisory perspective, one of the earliest initiatives was the large-scale series of meetings for farmers run by Teagasc and ICBF which promoted the use of animal events recording – primarily focusing on recording the sire of replacement heifers (ICBF 2002). The number of heifers with such information increased from 109,000 to 252,000 between 2000 and 2011 (see Table 2). This link underpins all further sire evaluation and is of crucial importance to developing a robust EBI.

Key principles of technology transfer and their adaptation by the advisory service

Rural sociologist Everett Rogers characterised adoption of an innovation as a five-step process as outlined in Figure 1. The following paragraphs detail how Teagasc advisors and others co-operated to ensure that this five step process functioned efficiently in the adoption of the EBI.

Figure 2. The five step EBI adoption process (adapted from Rogers, 2003).



Rogers characterises the first step of this process as the knowledge stage - here the individual is first exposed to an innovation and becomes inspired to seek further information about it. By 2005 the first of a series of annual breeding competitions was launched promoting the concept of EBI. Initially an individual farmer competition, huge publicity was achieved with over 2,000 dairy farmers attending the inaugural Open Day and over 1,000 dairy farmers attending each of the following two national events held in 2006 and 2007. A feature of these early events was presenting the 'High EBI cows' as a separate group for farmers to see – very quickly extension of EBI was moving, for some farmers at least, to the next step.

Step two in the process of adoption of an innovation is persuasion – at this stage the farmer is interested and actively seeks information/detail about the innovation. This was extended through the farming press, farmer meetings and walks and through farmer – advisor contacts. Research on practice adoption by Irish

dairy farmers found that Teagasc advisors and discussion groups significantly influenced the adoption of newer technologies (Kelly, 2011).

Step three is the decision step – the farmer weighs up the concept and decides to adopt or reject it. In making the decision, a range of people 'closest' to the farmer are often hugely influential in making this decision. These people change depending on the technology involved. For breeding decisions, these people tended to be the farmer's Teagasc advisor, their AI company representative and their farmer peers – most often members of their own discussion group. Each year in advance of the breeding season, Teagasc advisors meet with ICBF personnel and Teagasc dairy specialists and researchers to ensure that consistent EBI messages were promoted. In the early years, such meetings were held with breeding company representatives as well.

Step four is the implementation stage. Here the individual employs the innovation to some extent on their own farm. Teagasc specialist staff and ICBF personnel developed a suite of discussion group reports, available to their advisors that allowed group members to compare their breeding information with that of other members of their group. Peer pressure was employed to ensure that EBI was being implemented on individual's farms.

Step five is the confirmation stage. Here the individual finalises the decision to continue using the innovation and may end up using it to its fullest potential. Between 2008 and 2011 the breeding competition changed from being an individual farmer competition to a discussion group competition. During the three years 2008 to 2010 approximately 75 dairy discussion groups met a team of experts each year and had their breeding performance critiqued. The impact of this on members' performance both in terms of the number of heifers born in the following years and the average EBI of the bulls used was hugely significant. Winning groups hosted breeding events where most of the information was presented by group members rather than 'breeding experts'. Farmers attending the events observed that hearing the messages from other farmers was hugely effective in confirming the EBI message. To support farmers at this stage, Teagasc and ICBF personnel prepared tables showing the milk production and fertility performance of 'high EBI' and 'low EBI' cows from wining group members' herds at the national and regional events that took place from 2008 to 2011.

Promotion of EBI is ongoing. Improving herd EBI continues to be a Teagasc dairy programme target.

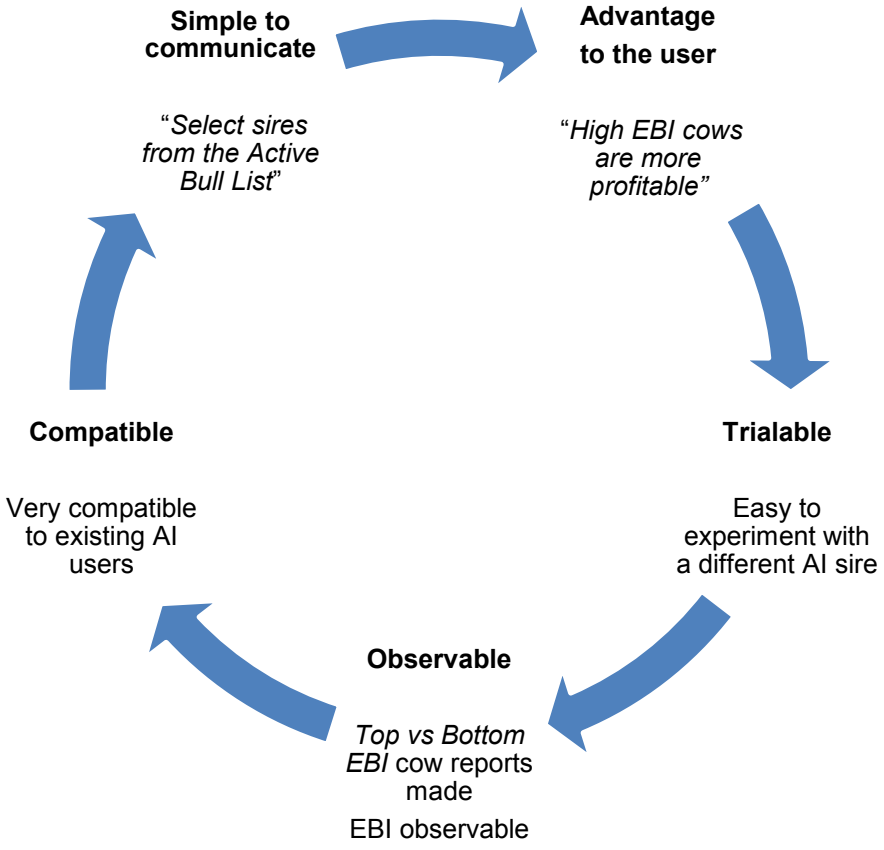
- Teagasc continues to promote the index through the usual communication channels including the popular press, promotion by advisors at individual farm visits and at farm walks and meetings.
- A Department of Agriculture scheme, the Dairy Efficiency Programme ran from 2010 to 2012. This scheme funded participation in discussion groups. The scheme supported the focus on improving herd EBI as participants had to engage in recording sires of calves, cow temperament and on-farm lameness and mastitis events.
- Farmer reports have been developed by Teagasc specialists and ICBF personnel. These allow individual dairy farmers to compare genetic and cow performance data from their own farm with that of similar farmers within their own region.

- The EBI is not a 'finished product' and undergoes continual adjustment and refinement so ongoing modification of Teagasc's advice and guidance is required.

Factors that facilitated EBI adoption

According to Rogers (2003), five intrinsic factors influence an individual's decision to adopt or reject an innovation. All of them were adapted in Teagasc's extension of the EBI message as outlined in Figure 3.

Figure 3. Intrinsic factors that made EBI easier to adopt (adapted from Rogers, 2003).



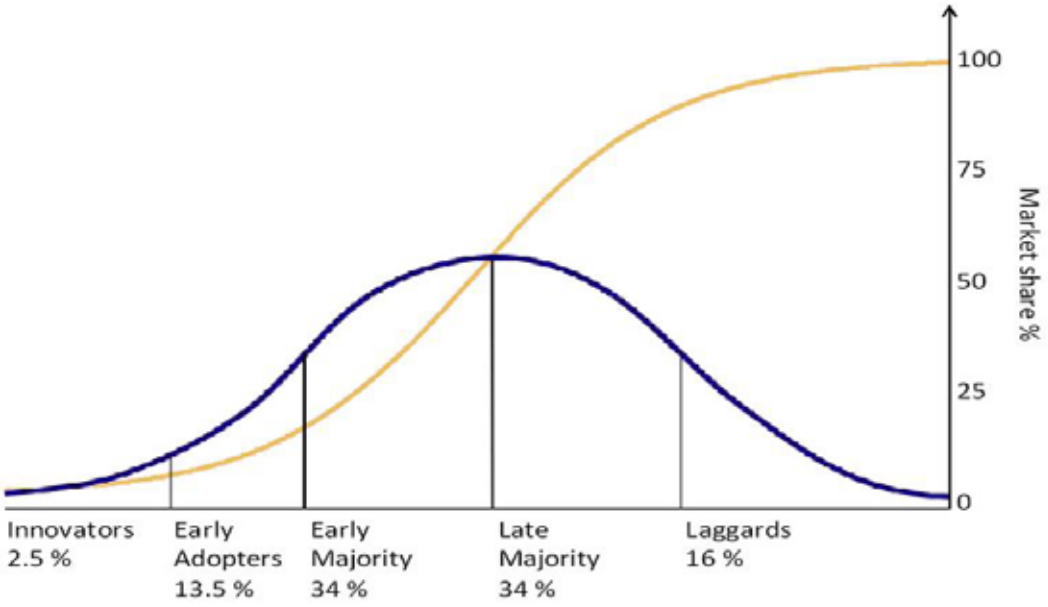
People factors also influence the rate of adoption.

- As outlined already a 'team' approach was being employed by service providers from ICBF, Teagasc and the main breeding organisations. This was further enhanced by the development of an AI partnership supported by the Irish Department of Agriculture in 2007-2008. Such a unified approach meant that a consistent EBI message was extended by all of the parties involved.
- Discussion groups have been a major conduit for the extension of EBI. Their efficacy was confirmed with research by Hennessy and Newman (2010) which showed that a higher percentage of group members used AI and genomic sires in 2009 compared with non-group members.

Within the rate of adoption there is a point at which an innovation reaches critical mass. This is a point in time within the adoption curve that enough individuals have adopted an innovation, critical mass has been achieved, and the continued adoption of the innovation is self-sustaining. Figure 4 presents the successive

groups of consumers adopting the new technology (shown as a 'bell curve'). The market share (shown as an 's shaped' or logistic curve) ultimately approaches 100%.

Figure 3. The diffusion of innovations (adapted from Rogers, 2003).



Innovation is a two-way process

One of the cons of the Diffusion of Innovation model is that the communication process involved is a one-way flow of information. This was not the case with EBI. Early adopters of EBI very quickly challenged the limited range of AI sires available to them to ensure a continued rapid pace of genetic improvement.

- The ICBF and the breeding organisations responded with GeneIreland, a programme to progeny test young bulls in a much more organised and systematic way that was done heretofore. Teagasc advisors promoted the GeneIreland programme in the initial years.
- Genomic testing of Irish dairy sires began just before the start of the spring breeding season in 2009. This new technology was developed by Teagasc researchers and ICBF personnel and supported by the breeding companies. Consultation between all of the parties ensured that a simple consistent message regarding the use of genomic sires was developed and extended. Teagasc advisors were cited by over one third of dairy farmer users as the main influence of their use of genomic sires in 2009 (Kelly, 2011). The widespread use of these genomic sires ensued as presented in Table 1. This in turn has contributed to the rise in the rate of heifer EBI improvement observed in recent years (Figure 4).

Table 1. EBI and percentage of AI sires used in Ireland that were either genomically proven or daughter proven (2009-2015).

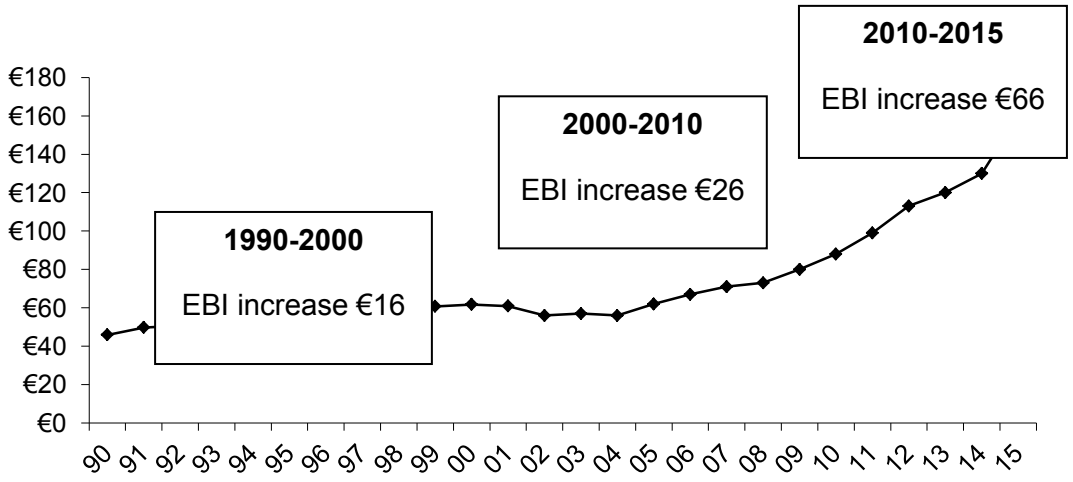
	2009	2012	2015
Genomic AI sires			
EBI (€)	€179	€238	€214
% of total AI used	34%	48%	70%
Daughter proven sires			
EBI (€)	€126	€215	€301
% of total AI used	66%	52%	70%
Weighted EBI of all AI sires used	**€144**	**€226**	**€275**

Data for 2009 adapted from Wickham (2011); data for 2012 adapted from ICBF (2013); data for 2015 from Francis Kearney ICBF (pers. comm.).

Results

The average EBI of heifers born since 1990 are presented in Figure 4.

Figure 4. EBI (€) of heifers born in Ireland between 1990 and 2015.



The data in Figure 4 show that over this 25 year period, the EBI of dairy replacement heifers born on Irish dairy farms has almost quadrupled. The rapid rise observed in the last couple of years reflects the trend to using more genomic sires (which are higher EBI) as detailed in Table 1.

The '90's represents a decade of genetic stagnation with EBI of the heifers born increasing by only €16 over the decade. The 2000-2010 period shows an increase of €26 in the genetic merit of the replacement heifers born while the rate of genetic merit increase more than doubling in the past 6 years.

Summary

The results of the extension of the EBI message have included:

- A rapid rise in the EBI of sires used on Irish dairy farms;
- The widespread use of genomic sires;
- A rapid increase in both the number and EBI of replacement heifers born in the national herd.

The key elements to ensure effective extension of a technology include:

- A team approach – all players in the industry are promoting the same technology;
- Clear industry targets are identified and the progress made is measured against such targets;
- As the technology is further developed, the initial extension messages are modified to complement the original targets;
- A mix of extension methods is used – those applied in the initial stages of extension are likely to be different to those used as the technology is more widely adopted,

References

Berry, D.P., Buckley, F., Dillon, P., Evans, R.D., Rath, M. and Veerkamp, R.F. 2003 genetic parameters for body condition score, body weight, milk yield and fertility estimated using random regression models Journal of Dairy Science 86, 3704-3717

Berry, D.P., O'Brien, B., O'Callaghan, E.J., O'Sullivan, K. and Meaney, W.J. 2006 Temporal trends in bulk tank somatic cell count and total bacterial count in Irish dairy herds during the past decade Journal of Dairy Science 89, 4083–4093

Evans, R.D., Buckley, F., Dillon, P. and Veerkamp, R.F. 2002 Genetic parameters for production and reproduction of spring-calving upgraded Holstein-Friesian dairy cows in Ireland Irish Journal of Agricultural and Food Research 41, 43-54

Evans, R.D., Wallace, M., Shalloo, L., Garrick, D.J. and Dillon, P. 2006 Financial implications of recent declines in reproduction and survival of Holstein-Friesian cows in spring-calving Irish dairy herds Agricultural Systems 89, 165-183

Hennessy, T. and Newman, C. 2010 The Benefits of the Membership of a Dairy Farm Discussion Group: Evidence from the National Farm Survey Paper presented at the Teagasc National Dairy Conference 17th-18th November Teagasc, Carlow, Ireland

ICBF 2002 ICBF Annual Report – February 2001 to January 2002 ICBF, Bandon, Co. Cork 24th May 2002 Available online at http://www.icbf.com/publications/files/Annual_Report_for_2002.pdf

ICBF 2013 ICBF Annual Report 2013 ICBF, Bandon, Co. Cork Available online at http://www.icbf.com/publications/files/Annual_Report_2013.pdf

Kelly, T.G. 2011 Teagasc influence on best practice and adoption on Irish dairy farms Best-Practice Knowledge Transfer British Society of Animal Science Knowledge exchange between providers of KT to farmers, Thursday 3 March, Sixways Stadium, Warriors Way, Pershore Lane, Hindlip, Worcester, WR3 8ZE

Ramsbottom, G., Cromie, A.R., Horan, B. and Berry, D.P. 2012 Relationship between dairy cow genetic merit and profit on commercial spring calving dairy farms Animal 6:7 1031-1039

Rogers, E. M. 2003 Diffusion of Innovations (5th Edition) Glencoe: Free Press, New York

Shalloo, L., Dillon, P., Rath, M. and Wallace, M. 2004 Description and validation of the Moorepark Dairy Systems model Journal of Dairy Science 87, 1945–1958

Veerkamp, R.F., Meuwissen, T. H.E., Dillon, P., Olori, V., Growen, A.F., van Arendonk, J.A.M. and Cromie, A.R. (2000) Dairy Breeding Objective and Programs for Ireland : Final Report Available Online at ICBFhttp://www.icbf.com/publications/files/Final_RBI_report_25_11_2000.pdf

Wickham, B.W. 2011 How genomic selection is increasing the profitability of the Irish dairy herd SMO Conference – Melbourne, Australia, Thursday 5th May Available online at http://www.icbf.com/publications/files/SMO_Wickham_3rd_May_2011.pdf

Wickham, B.W., Amer, P.R., Berry, D.P., Burke, M., Coughlan, S., Cromie, A., Kearney, J.F., McHugh, N., and O'Connell, K. 2012 Industrial perspective: capturing the benefits of genomics to Irish cattle breeding Animal Production Science 52:172-179

Workshop Exercises

- Was this a convincing case of a successful advisory intervention?
    a) Why or why not?
- What are workshop participants' experiences with quantifying the added value of advisory services?
    a) What are the main issues that have been encountered?
    b) Are there any other factors that may have helped/hindered the assessment?
- What are workshop participants' experiences with the promotion of new technologies through advisory services?
    a) What are the reasons for successful/unsuccessful outcomes?
    b) How or has this been assessed?
- What means of information distribution have been used?
    a) Which ones worked best and why?
    b) Which ones did not work well and why?
    c) How has this been assessed?

Werkstatt 5: Quantifizierung der zusätzlichen Hilfe durch Beratungsdienste

Präsentiert von: George Ramsbottom

Moderator: Dr Doris Läpple

Ziel

In diesem Workshop wird herausgefunden, wie Beratungsdienste den Einfluss ihrer Tätigkeit besser messen können. Er behandelt außerdem die genetische Verbesserung von Milchkühen in irischen Milchbetrieben durch den irischen Beratungsdienst.

Die Entwicklung eines neuen Züchtungs-Index, dem EBI, für irisches Milchvieh wurde erfolgreich auf irische Milchhöfe ausgeweitet. Teagascs Beratungsdienst hat den Index durch folgendes erweitert:

- Einbeziehen von nationalen Maßstäben des EBI als Bestandteil der Schlüsselindikatoren für Leistung im Beratungsprogramm für Milchwirtschaft.
- Erweiterung von EBI-Mitteilungen durch Hofbesuche, Gesprächskreise für Bauern und nationale Veranstaltungen.
- Kontaktaufnahme mit anderen Agenturen wie der irischen Viehzucht-Föderation, AI-Unternehmen und milchverarbeitenden Betrieben um sicherzustellen, dass alle Instanzen der Industrie denselben Wissensstand haben, um die Ziele des EBI an Bauern zu werben.

Workshop 6: Promoting farm succession – planning the role of partnership

Presenter: Thomas Curran

Moderator: Bruno Häller

Ireland has set ambitious growth targets for the agricultural industry through Food Harvest 2020 and Food Wise 2025. The targets provide the industry with a clear pathway for development into the future. To grow the industry in line with these targets, the structures of Irish farming must be addressed through the use of innovative ideas and policy incentives.

Age structure of Irish Farming

The average age of farmers in Ireland is fifty seven years of old. (Teagasc National Farm Survey 2014). A study commissioned by MACRA NA FEIRME also indicated that forty eight per cent of farmers had no identified farming successor. However, that is not to say that they would not identify a successor in the future.

What is farm succession?

Succession is very often confused by both farmers and industry with farm transfer. It occurs in the period of time before final farm transfer to the next generation. Succession can begin quite early in life from the time a son or daughter becomes involved in the day to day work on the family farm. It can be described as the gradual transfer of management and responsibility from the parents to the son or daughter. Registered farm partnerships have proven to be an effective structure to bring succession to the fore on many family farms. With policy support measures in place the function of partnership in this respect is growing as time goes on.

Registered farm partnerships

Formal registered farm partnerships have existed in Ireland since 2002. Initially only available to dairy farmers, in 2015 registered farm partnerships were made available to all farm enterprises or any combination of enterprises. The partnership register is maintained by the Department of Agriculture, Food and the Marine and is supported by a set of detailed rules that are set out in the Finance Act 2015. The number of registered partnerships has steadily increased from 550 in March 2015 to 1,400 at present. There is currently a steady flow of 8-10 new applications for registration on a weekly basis. Policy incentives available through CAP schemes are playing a key role in the increased uptake of registered farm partnerships.

Seventy five per cent of registered partnerships are family partnerships between the parents and their future successor. Partnerships have proved to be a very successful transition structure to guide families through the succession process prior to final transfer of ownership of the farm. In many situations the partnership continues on after farm transfer while the parents are still involved in the day to day management of the farm.

Industry stakeholders such as solicitors, accountants, private agricultural consultants and the MACRA land mobility service play a key role in the promotion and formation of farm partnerships.

On-farm Agreement

The on-farm agreement is a key document in the formation of a partnership. It addresses three key areas that impact on the success of the arrangement.

- Responsibilities, sharing of work and record keeping.
- Time off and holidays
- Salaries and Drawings from the partnership.

The partnership structure challenges the parents to give responsibility and decision making powers to the successor at an earlier stage. This level of responsibility and decision making powers of the successor gradually increase over time as he/she grows more into the role and gains more experience. The partnership also challenges the successor to take on responsibility and to challenge for decision making powers on the farm. It gives the successor the opportunity to show commitment to the family farm business and to implement their learning from formal education and practical experience gained elsewhere.

Impact of policy incentives.

While in existence since 2002, the registered partnership structure is a change from traditional succession and inheritance practices in Ireland. Policy incentives play a key role in attracting farm families to the partnership structure.

Taxation

Profits are shared between the parents and successor in the partnership. Income tax incentives such as 100 per cent stock relief for young farmers can be availed of by the young farmer on their share of the profits while the parents can avail of 50% stock relief. Due to the fact that profits are shared it may also reduce the income tax paid by the family as the 20% tax band is maximised.

The Common Agricultural Policy (CAP)

The current CAP has a number of measures that benefit young farmers and these schemes can be accessed by the successor through the formation of a registered partnership with their parents. They include, The Young Farmer Scheme, National Reserve and increased grant aid through the Targeted Agricultural Modernisation Scheme (TAMS II). A 50% grant is also available to help with the set up costs of forming a farm partnership. Where a successor has farmed previously in their own right, they can continue to obtain multiple benefits under the Area of Natural Constraint Scheme (ANC), Green Low-Carbon Agri-Environment Scheme GLAS and the organic farming scheme.

These policy measures are proving to be key motivators for farm families to form family farm partnerships.

Summary

Registered farm partnerships, supported by targeted policy measures fast track the succession process by getting the successor involved formally in the management of the family farm at an earlier stage. The partnership also takes pressure off the parents as they can set up the arrangement with a successor without transferring land or other farm assets. They continue to have a pivotal role in the running of the farm and

can support and guide their successor as they gradually develop into a fully-fledged farmer in their own right.

Workshop Exercise

- The presenter will deliver a 15 minute presentation. An outline of farm partnership will be given and the roll that they play in family farm succession in Ireland. Key promotion events will be highlighted. A case study will be presented as part of the presentation.
- The workshop will be divided into two or three sub-groups depending on numbers attending.
- A spokesperson for each group will be elected and each group will be given a number of questions to discuss and report on.
- The results of each sub-group will be collated and written up to document the key learning's form the workshop.

Discussion Questions

Group 1:

Q1. What is the objective of family farm succession?
Q2. What are the key concerns of parents and the successor when considering succession?
Q3. How do advisors and other industry stakeholders interact with farm families in relation to farm succession?

Group 2:

Q4. How do we ensure that registered farm partnerships are the politically and socially accepted norm in addressing family farm succession?
Q5. What other mediums should be used to further promote farm partnership as the norm in family farm succession?
Q6. What is the advisory experience from outside Ireland in advising and promoting family farm succession?

Werkstatt 6: Hofübernahme bewerben – Rolle von Partnerschaften planen

Präsentiert von: Thomas Curran

Moderator: Bruno Häller

Ziel

In diesem Workshop wird die Hofübernahme im irischen Kontext und die Maßstäbe, die Irland zur Unterstützung von landwirtschaftlicher Zusammenarbeit eingeführt hat untersucht. Was sind die Herausforderungen, ein betreutes Verfahren zur Hofübernahme zu bewerben? Wie kann die Art zu werben und Hofübernahmen in ganz Europa zu unterstützen verbessert werden?

Workshop 7: Operational groups' early experiences

Presenter: Carola Ketelhodt Landwirtschaftskammer, Schleswig-Holstein

Moderator: Barry Caslin, Teagasc

Background

Operational Groups, consists of several partners who come together to work on concrete, practical solutions to a problem or innovative opportunity and whose project is funded by the EU Rural Development policy. Members could include farmers, agricultural advisors, NGO's, a scientist, an agri-business dimension and others as actors in a bottom-up process.

The European Innovation Partnership aims to foster a competitive and sustainable agriculture and forestry sector that achieves "*more from less*". This will be achieved by bridging the gap between farming practice and science. The EIP adheres to the "*interactive innovation model*" which focuses on forming partnerships – using bottom-up approaches where farmers, advisors, researchers, businesses and others work together in Operational Groups. These Operational Groups will generate new insights and ideas to generate focused solutions to issues that care quick and easy to put in place.

Objective

This workshop will examine tasks, objectives and the decision making process of Agri-Operational Groups. Examples of groups working together and how results from Operational Groups will be used including sharing and reporting mechanisms. The financial support available to Operational Groups and how to find partners that have the necessary competencies (practical or scientific) and get an Operational Group project started. The workshop will also explore areas such as developing the idea together with preparing the project plan and roadmap and will discuss the challenges and opportunities for advisory services to engage in EIP Operational groups.

Workshop Structure

- The presenter (Carola Ketelhodt) will give a 15 minute presentation which will outline the objectives and key elements of the EIP Agri funding instrument. Carola will outline the current state of planning in her district of Schleswig Holstein in Northern Germany together with the support and service which they provide to Operational Groups and their innovation projects. Carola will give her perspective and outlook on the future of the EIP to 2020.
- The workshop will be divided into two to three - four sub-groups depending on numbers attending.
- A spokesperson or facilitator will be elected to each group to provide feedback to a given number of questions which should be discussed among the sub-groups. Each group will have 20 minutes to answer the questions.
- The feedback from each group will take a further 10 minutes per group including discussion and feedback from other groups. (40 minutes)
- The results of each sub-group will be summarised by the moderator to highlight the key findings from the sub-group. Wrap P Moderator (10 minutes)

Innovation Office EIP Agri Schleswig-Holstein

Summary

The Innovation Office as regional support unit for EIP Agri provides farmers and various players with information, assistance and support in the planning, application, implementation and execution of their project ideas. Its tasks are to build up and support the Operational Groups (OG) as seed cells for innovative projects, to organize networking and knowledge transfer. The Innovation Office coordinates the public relations work for the exchange of information on project results and it supports the desired transfer of knowledge into practice. Simultaneously the Innovation Office EIP Agrar Schleswig-Holstein supports the Ministry in Kiel on any matter concerning EIP.

Innovative Points

The Innovation Office is a new service provider particularly for farmers and players operating in the agricultural sector. It offers advice, service and support in the planning and implementation of innovation projects for more sustainability and efficiency in agriculture.

Individuals and groups who have questions about EIP project proposals, are looking for project partners, or require further assistance within the Operational Group, can contact the Innovation Office for:

- Strategic guidance and active support in setting up innovation projects
- Information on funding opportunities
- Assistance with applications and administrative processing
- Mediation of cooperation partners in research, consulting and practice
- Qualifying the players for project working in teams and groups
- Innovation brokering

Drivers

To support the innovation process for more efficiency and sustainability in agriculture, the Ministry (MELUR) has set up the Innovation Office EIP Agrar. It is hosted by the Schleswig-Holstein Chamber of Agriculture in Rendsburg with good relationships between farmers, advisors and experts for agriculture.

The Innovation Office EIP Agrar is the interface between practice and Managing Authority in the implementation of EIP in SH. The main driving forces for the work nowadays are the goals of practical relevance projects and farmers involved in Operational Groups.

Activities and results

The first 17 EIP projects were selected and Operational Groups started to put their innovative projects into practice in June 2015. The Innovation office offered training courses, workshops and advice for information and networking. Now it is organizing the PR and planning the self-evaluation for the groups. Another task of the Innovation Office EIP Agrar in Schleswig-Holstein is to prepare the next call for innovation projects in 2017.

Workshop Exercises

Group 1

Tell us your experience or idea of innovative ways to add economic value to products or services. It may be something which has already been implemented or a concept being currently developed, for instance by an Operational Group supported under the Rural Development Programmes.

Are you aware of any multi-actor projects that demonstrate features similar to the future Operational Groups?

Can you outline a strategy whereby a farmer or a group of farmers who identifies a particular problem or issue could go about establishing an Operational Group to come up with innovative solutions?

Group 2

Are there any examples of possible pitfalls and good practices from current experiences of implementing multi-actor projects?

How can Member States best support EIP Operational Groups and Innovation Brokering activities under the rural development programmes in the context of EIP-Agri?

What steps are required to ensure the EIP Operational Groups become both politically and socially accepted in member states?

Group 3

How do we support transnational / trans-regional Operational Groups?

How do you bring together actors around topics of public interest? Do LAG's have a role to play in issues of public interest and local development models?

How do you ensure knowledge transfer of the innovation after the funding period?

How should the results of Operational Groups be disseminated versus private interests?

How can we inspire a culture of innovation in the agricultural sector?

Werkstatt 7: Erste Erfahrungen von Aktionsgruppen

Präsentiert von: Carola Ketelhodt

Moderator: Barry Caslin

Ziel

Aktionsgruppen, bestehend aus mehreren Partnern, welche zusammen an konkreten und praktischen Lösungen für ein Problem oder eine innovative Möglichkeit arbeiten, mit einer Finanzierung durch die EU-Bestimmung für ländliche Entwicklung. Mitglieder können unter anderem Bauern, Wissenschaftler und Vertreter für landwirtschaftliche Wirtschaft sein.

Dieser Workshop dient zu Untersuchung der Aufgaben, Ziele und der Entscheidungsfindung von Aktionsgruppen in der Landwirtschaft. Hierzu gibt es Beispiele von solchen Gruppen, wie diese zusammenarbeiten und wie Ergebnisse von Aktionsgruppen verwendet werden (Verbreitungsmechanismen). Außerdem wird die Nutzung von Finanzierungressourcen behandelt, etwa die Knüpfung von Partnerschaften mit geforderten Kompetenzen, um ein Projekt starten zu können. Schließlich geht es in dem Workshop um die Ergründung von Gebieten wie der Entwicklung einer gemeinsamen Idee und der Vorbereitung eines Projektplans und der Vorgehensweise.

Workshop 8: AgriSpin case studies in innovation

Presenter: Peter Paree

Moderator: Michael Kuegler

(Source: "Stories from all Corners", Eelke Wielinga, 2016)

The AgriSpin project is another endeavour within the framework of EIP. It aims at strengthening support systems for agricultural innovations in the European Union. It is an international network project, being carried out in the period 2015-2017, bringing partners together on a specific theme. The AgriSpin project focuses on the knowledge system itself, and tries to find methods to stimulate and initiate groups to become actively engaged in innovative processes.

The AgriSpin project: learning from sharing

The idea behind the approach of AgriSpin project is that all partners have their own experiences, ideas and approaches which are worth sharing with others. Nobody pretends to know best. A golden standard or silver bullet for stimulating innovations does not exist. Every partner is working in a context that has been historically grown and that has its cultural particularities. But there is a lot to learn from exchanging experiences between these different systems, and that is what the project intends to facilitate.

The fifteen partners in the consortium are mainly farmer's organisations and farm advisory services, with an intermediate role between farmers, researchers and other stakeholders. Three of these partners are scientific institutes with a focus on knowledge systems in agriculture. One is an international network of regional partners in biological farming, and there is also one European network of regional partners in the German speaking area. In the next paragraph all partners present themselves in brief.

The focus is on regional systems. This is because in many countries there are considerable differences in cultures between different regions, as well as organisational structures. Often agricultural policies are a regional affair.

A core activity of the project is the cross-visit. Teams, composed of seven or eight participants from different partner organisations visit a host partner for about one week. During this week, the team meets major actors, such as innovating farmers, advisors, researchers, administrators and other relevant persons, in order to understand what is going on in this particular region. At the end of this visit, there is a meeting with the key players in the region, for feedback to the host partner. What did the visiting team find interesting? Where is room for improvements? What inspiration does anyone take home?

The scientific team contributes to the quality of the cross-visits, by providing a conceptual framework. This framework guides the participants in what aspects to touch upon during their interviews. Similar appraisals have been tried out before, and the scientific team ensures that the project profits from what earlier experiences have delivered in the form of concepts and guidelines.

Many partners have their methods, training materials and stories they are proud of. Making such materials accessible for others is another important component of the AgriSpin project. The cross-visits generate their own stories as well, which will be captured on video and made accessible.

The institutional environment has a much influence on the capacity of a region to find new answers to emerging challenges. When we assume that good initiatives for innovations are everywhere, the thresholds for taking the necessary actions for bringing such initiatives into practice vary a lot in different regions throughout Europe. Stimulating policies such as subsidies for experiments or mitigation risks can lower such thresholds, while restrictive rules and lack of civil acceptance make them higher. Dialogue with the 'enabling environment' about its role and possible measures is therefore an important component of the project as well. Here, the implementation of the EIP, and the role of "Managing Authority" to be performed by the regional government, will get serious attention.

The last two components are communication and management: necessary to make any project run smoothly. These components are in the able hands of the lead partner of AgriSpin: SEGES in Denmark.

If things work out the way we hope for, the AgriSpin project will develop a practical approach for sharing and learning about stimulating innovations at farm level, with a focus on the role of intermediate actors. This approach will not only be useful for the partners in the project. Organisations in other countries have already shown their interest, and also the Thematic Networks under the EIP H2020 programme could benefit.

Therefore, in the second part of the project period, there is space in the time schedule for collaborating with other partners and projects, and enlarging the professional network of intermediaries that has been created.

Observable effects of the cross visits so far

It is still too early to make a systematic evaluation of the harvest of the AgriSpin project, while only half of the cross visits have taken place. Nevertheless, the partners reported already an impressive list of notable effects that can be attributed to the encounters in the cross visits.

During the General Meeting in Florence (March 2016), participants were asked to formulate in short statements what they had learned so far in the AgriSpin project. This is what they wrote down:

Some remarks regarding take home messages (AKIS)

- Seeing the big picture of support
- Transition in agriculture is everywhere in Europe
- No technical innovation without social embedding
- Good governance is rare: how to survive without?
- New project topics
- Engagement is needed to be able to have success
- More focus on farmer strategy and business model
- Involvement of relevant parties and stakeholders is important
- Financing, especially in the starting phases, is important
- Ideas to apply / take over back home: improve existing ones / apply new ones
- Transferability is often difficult to see possible
- Bad governance is standard: how to survive?
- More impact of innovation process when farmers have strong / leading role.
- Links to new actors for current and future projects
- Contacts outside own curricula
- Contact between colleagues and organisations: transfer of innovations?
- By-catch is key *(for AgriSpin)*

Some remarks regarding the cross visit methodology

- Methodology to analyse the innovation system that will be used everywhere
- The cross visit method to generate learning processes
- The importance of a good schedule
- Who is the facilitator?! And feels responsible for it!?
- Cross visit: get to the point; really know what you want to focus on.
- Too many cases, hence less time for analysis
- Time factor: a limitation in cross visits
- Individual follow up should be minimum / obligatory

The methodology is permanently improved during Agrispin.

Objective is to realise a concept, where generally educated persons from different background, without time consuming instruction, can make a characterization and raise meaningful questions for the innovators and their supporting services on one hand, and to organisations who need reviews on the other hand.

In preparation of the present progress report (April 2016), the partners mentioned the following effects:

- The Dutch cross visit strengthened contacts between ZLTO, (the Dutch AgriSpin partner) and "De Hoeve", a network of high quality pig raisers that was visited as one of the innovation cases. This led to two new project proposals. One has already been approved, the other one is still pending.
- This cross visit also helped to increase the awareness of regional authorities about the special role of LIB as small scale intermediate actor in innovation processes in agriculture. Geert Wilms (LIB) joined the Dutch ZLTO team in AgriSpin. The regional minister for innovation became interested and is now willing to contribute to Work Package 4 of AgriSpin.
- The Agro Coach approach, one of the studied cases in Flanders, inspired the Danish partner, and is now being proposed for the SEGES programme 2017.
- The Dutch and the Belgium participant in the cross visit in Denmark were impressed by the LEAN concept being applied in one of the innovation cases. They took it home and established contacts with local partners to elaborate it further with the Danes.
- Ilse Geyskens (Innovatiesteunpunt, Flanders) made a follow up by involving her colleagues in visiting Belgian companies outside the agricultural sector that implement the LEAN concept. A university professor teaching LEAN was consulted, and the next step will be to initiate a LEAN network with fruit growers in Flanders.
- Teagasc, the Irish partner, has a well-established programme of peer reviews among the 12 advisory regions. AgriSpin now serves as a pool of foreign experts to be part of the review panels. Yearly, two foreigners can take part. Hannu Haapala, (Pro Agria, the Finish partner in AgriSpin) was the first one to be invited for this purpose.
- During the cross visit in Basque Country, contacts were made between a Basque sheep cheese producer and Tegeasc for employing an English speaking student. Teagasc accommodates 600 students per year, many of whom seek working experiences abroad.
- Teagasc director Tom Kelly reports that approaches being applied in AgriSpin, such as the story telling for the initial book and the methods used in the cross visits, have already influenced the working procedures of Teagasc advisors, and positively affect their relationships with clients.
- James Maher, education specialist in Teagasc, took part in several cross visits. He reports that he became more aware of the importance of learning networks in AKIS. He is now setting up Education Leadership Networks within Teagasc, for which educational resource material is being developed. One of the elements will be the use of case studies as a methodology, like what is being done in AgriSpin.
- Trish O'flynn, taking part in the Danish cross visit for Teagasc, reports that her experience with the Danish system broadened her thinking about 'knowledge hierarchies' (e.g. the value attached to tacit and scientific knowledge), as well as the interactions between farmer-inventors and the organisations in the AKIS. She will feed this into her PhD study on farmers who come up with their own inventions, independent of the AKIS. This study is in its final stage.
- In Romania a test is being done with 'Geo-Pos' technology for tracing free ranging animals in mountainous areas. This innovation was one of the cases being studied in Basque Country.
- The feedback session in Basque Country created the opportunity for key actors in the system to restore contact with each other. For example, a representative of small farmers in the mountainous area was grateful for being heard and taken seriously.
- In Guadeloupe, the RITA programme was the main subject of observation of the cross visit. Several cases that had been supported through this programme were visited. During the visit, the first phase of this

programme had ended, and a decision about the second phase was pending. The regional authorities paid much attention to the visiting team, which recommended to allow for a second phase. Not long after the visit a positive decision was made. RITA has become an Operational Group under EIP. The visit clearly raised the awareness of the local actors about the need to make additional efforts to make this multi-actor scheme work properly.

- Before summer 2016, a RITA Guadeloupe steering Committee will be organised. Philippe Prigent (ACTA) and Pierre Rebuffel (CIRAD), both AgriSpin partners, are invited to formulate proposals inspired by the outcomes of the cross visit in order to improve the RITA Guadeloupe Scheme for RITA 2, taking into consideration the strengths and weakness highlighted by AGRISPIN in order to avoid replicating the "same errors" as in RITA 1.
- Since CIRAD and ACTA are managing the RITA programme in all French overseas territories, they are now planning to implement the recommendations from the cross visit also beyond Guadeloupe, such as: improve knowledge exchange with other organisations and countries, increase the involvement of the farmers organisations in designing the activities in AKIS, etc.).
- The hosts of the Guadeloupe cross visit did an experiment. They sent a researcher ahead for several weeks to collect information about the cases to visit, and to make an analysis. At the end of the visit, the host had to admit that in the few days of the visit the AgriSpin team had collected the same and sometimes even more information.
- Hearing about the cross visit in Guadeloupe, representatives of the French Chambers of Agriculture became aware that they somehow lost contact with developments of their overseas partners which apparently were ahead of them in some aspects. They took initiative to revise their internal learning procedures on behalf of EIP.
- In Tuscany, the host took the opportunity of the presence of foreign visitors to organise a seminar on the role of the knowledge broker in the rural knowledge system. So far no structural attention had been given to this role. The host managed to involve the key authorities and the society of agricultural scientists in the organisation, and Inge van Oost from EU/DG-Agri as keynote speaker. More than 100 participants attended the meeting.
- In Germany, organising a cross visit for AgriSpin by three different organisations being part of the VLK network (AgriSpin partner), appears to be a new and inspiring endeavour. These partners are all active in training and education for advisory services, but never cooperated before.
- The cross visit attracted the attention of the national German Agency for Agriculture (BLE), which sends the responsible person for the EIP contact point to participate. There is interest in learning from AgriSpin for the role of intermediates / knowledge brokers in all 13 regions of Germany. Also the BLE officer responsible for funding one of the innovation cases to be visited will take part.
- Anita Diabele (LLKC, Latvia) has found a good coach in Carola Ketelhodt (Schleswig Holstein) who monitors the first Operational Group scheme in Europe. Anita is responsible for setting up the Managing Authority for EIP in Latvia.
- During the feedback session in the cross visit in Greece; the Greek actors were surprised about what the visitors had discovered as sensitive challenges. They felt reinforced to keep up the good job they did under bad political and economic conditions.

We conclude that there is enthusiasm among the participants about the AgriSpin project and the cross visit approach. They indicate to learn from each other, and feel mutual support in the struggles they often go through in their home situation. There are high expectations from the methodology for cross visits that is being developed, although there is also still quite some room for improvements.

Questions that were raised at the start of Agrispin Cross visits.

Pearls and puzzles from the stories

A conclusive paragraph completed the book. Some main observations and conclusions are listed here:

Pearls:

- **Innovations can be technical, organisational and social.** All angles are valid and interesting.
- **Initiators can be anywhere.** The initiative for an innovation process can come from an entrepreneur, an advisor, a researcher, a politician or anyone else. It does not seem to matter where the first idea came from, as long as the partners in the process embrace it and make it their own.
- **Studying particular phases of an innovation process is valuable.** It is interesting to identify different phases, and to find out what is needed and helpful in such a phase.
- **Innovation support is about building bridges.** Connecting partners who carry the initiative with those who can support the process in one way of the other: this appears to be the recurrent role in practically all stories. Bridges between farmers, advisors and researchers. Bridges to financers. Bridges to stakeholders in the region. In some cases this intermediate role was missing, and this was identified as a major cause of poor innovation capacity.

Puzzles:

- **Reflection on the dynamics is needed.** How do support agents make a difference? Authors apparently find it hard to be explicit about this. If a new structure has been installed to connect major actors: when does this structure become effective? If soft skills are important for the backpack with which support agents approach their partners: what skills do they need and what tools can they apply? The AgriSpin project has work to do in enabling the partners to make such analysis.
- **What can be done if bridge builders are lacking?** Some stories show that intermediate structures are lacking. This does not necessarily mean that bridge builders are not there, but the threshold for doing what needs to be done is high. The puzzle is: how to lower this threshold?
- **The underlying assumptions are to be clarified.** It will be most helpful for the joint learning process to dig deeper for the assumptions partners make about innovation processes. This first exercise of the project makes clear that it is not so easy for the partners to make this type of reflection. It will be most interesting to follow what all the intensive interactions that are foreseen in the AgriSpin project will do to the way partners think and act.

Workshop Exercise

1. What evidence could you provide that you as individual advisors have supported innovation in the last year?
2. How have you communicated this and to whom?
3. How could you use AgriSpin case methodology/tools to communicate your own contribution to innovation in their work?

Werkstatt 8: AgriSpin-Fallstudien in der Entwicklung

Präsentiert von: Peter Paree

Moderator: Michael Kuegler

Was machen Anbieter von unterstützenden Dienstleistungen um Neuheiten auf dem landwirtschaftlichen Niveau voranzubringen? Wie können sie sich gegenseitig beeinflussen, um dies effektiver zu gestalten? Dies sind Leitfragen im AgriSpin („Raum für Neuheiten in der Landwirtschaft“) Projekt, welches von 15 Organisationen aus 12 EU-Staaten über eine Zeit von 2,5 Jahren geführt wird (März 2015 – Oktober 2017).

Der Workshop enthält eine Präsentation über das AgriSpin-Projekt und seine Konzepte und methodische Herausforderungen. Außerdem werden einige bemerkenswerte Resultate des bisherigen Fortschritts aufgezeigt. Weiter wird es eine Diskussion zum Thema „Kann AgriSpin der Start eines professionellen Netzwerks von Anbietern zur Unterstützung von Innovationen sein?“ geben, in der die Meinung der Teilnehmer und deren Interesse nach regionalen Meetings gefragt ist.

Poster Exhibition

Collaborative Farming

Providing Solutions to Structural Deficiencies in Irish Farming

Thomas Curran M.Agr.Sc
Farm Structures Specialist Teagasc

Why Collaborate?

- Food Harvest 2020, Food Wise 2025 Targets
- Increasing age profile of farmers in Ireland (57 years), young farmers represent 6.2% of all farmers
- 48% of farmers have no identified a farming successor
- Land fragmentation, 3.4 parcels per farm
- Labour availability & efficiency
- To improve work life balance

Current Collaborative Structures

- Registered Farm Partnerships
- Long-term Land leasing
- Share Farming
- Contract Rearing
- Cow Leasing
- Land Restructuring
- Future Developments: *Machinery Sharing, Contract Cropping*

Collaborative Farming Explained

Collaborative farming occurs where farmers agree to work together in a formal arrangement to obtain mutual benefits.

Key Activities

- Transferring the family farm clinics
- Farm walks
- Parent student open days
- Workshops for rural professionals

Key Benefits

- Transition Succession Arrangements
- Improved lifestyle through well organised work structure.
- Increased skilled labour availability
- Potential to increase scale of operation & reduced farm fragmentation
- Financial Benefits:
  - Taxation Policy
  - CAP Scheme Benefits

Conclusion

Collaborative arrangements offer attractive alternatives to farmers to improve the viability of the family farm unit by addressing structural issues such as age, fragmentation, lifestyle and viability.

How Teagasc advisory services can improve engagement with and empowerment of farm women

Name: Aisling Molloy

Supervisors: Dr. Monica Gorman (UCD), Ms. Jane Kavanagh (Teagasc)

Background/Context

- 74,092 women working on farms in Ireland, comprising 27% of the agricultural workforce
- Teagasc only have 4,829 named female clients
- The agricultural advisory, education and KT needs of these women are unknown
- FAO (2011) estimates that if women have similar access to resources as men, agricultural output could be increased by 4% and global hunger reduced by 12-17%.

Research Objectives

1. To establish a profile of farm women in Co. Wexford
2. To identify the knowledge and learning needs of farm women to empower their role on family farms
3. To investigate the barriers to women's engagement with agri-advisory services
4. To propose a strategy to improve Teagasc engagement with farm women.

Methodology

Background Research:

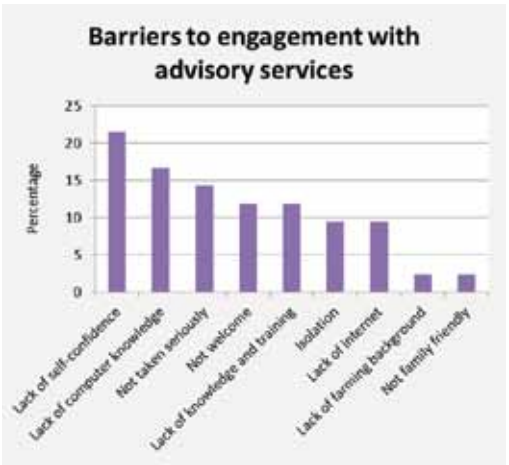
- Focus group with advisors
- Focus group with farm women
- Key Informant Interviews

Current research focusing on 3 main groups:

- Wexford Women Who Farm (WWWF) group
- Female advisory clients in Teagasc
- Other farm women in Co. Wexford

Results to Date

"[WWWF] is the only place that you can go to a meeting in duds and no one minds!"



"[Women] don't have the confidence to stand up and discuss breeding or livestock in a public format. We are too caring and have the guilt complex."

This project is funded by Teagasc through the Walsh Fellowship Scheme

Further development of study into Knowledge Transfer (KT) support requirements of high profit dairy farmers (HPDF)

Alastair Pollock[1,2], Dr. Karina Pierce[2] & John Maher[1]
[1]Teagasc Moorepark, Fermoy, Co. Cork.
[2]UCD, Belfield, Dublin 4

Study Background

- Opportunity to expand and increase milk production for the first time in 30 years (McCarthy et al., 2015)
- Shift in KT support requirements of HPDF from technical skills to organisational skills of their business
- Main area of interest was in relation to farm business structures (FBS) and this was described as a means to progress their businesses forward (Burke, 2015)
- Subject highlighted was farm collaborative arrangements (farm partnerships, share farming and contract heifer rearing)
- Collaborative arrangements can offer an economic and social benefit, while also providing an increased skill set on the farm (Roche & Macken-Walsh, 2012)

Study Aim : To further develop the KT needs of HPDF and in particular the area of FBS

Objectives of the study

1. To establish where the HPDF want to go in terms of their businesses and future aspirations
2. To determine how do the HPDF plan to achieve their aspirations
3. To assess the opportunities and challenges that they may face in the future
4. To design and develop a FBS guide for the entire industry with the assistance of an industry working group

Sources of data

Population: 25 dairy farmers previously identified as consistently high profit over a 5 year period and advisors of these farmers.

Formation of an industry working group consisting of industry stakeholders, advisors and HPDF to assist in the design & development of a guide.

Methods: mixed methods approach (Quantitative and Qualitative)

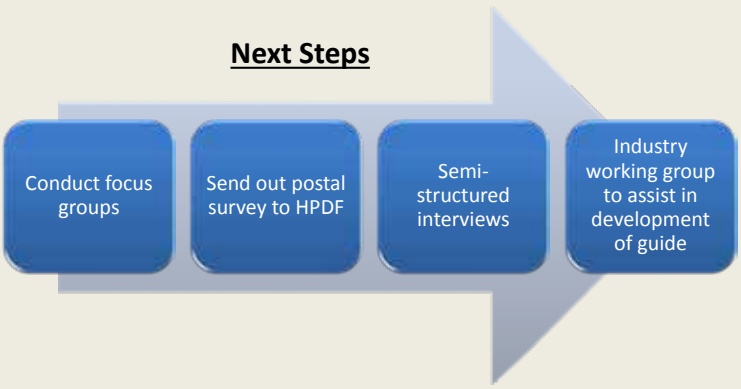
Research Methods

- Analysis of secondary data (E-PM, PastureBase & AgriNet) to establish current performance
- Focus group with the HPDF (n=25)
- Focus group involving industry stakeholders and advisors
- Postal survey to be sent to the 25 HPDF
- Semi-structured interviews with 4-6 HPDF

Findings to Date

- Consistently high profitable
- High use of grass measuring and budgeting services
- Average of 13.61 t/ha of grass grown in 2015
- Average stocking rates of 3.34 LU/ha (April 2016)

Next Steps



This research has been funded through the Teagasc Walsh Fellowship Scheme

BAG
Familie und Betrieb
Bundesarbeitsgemeinschaft der Landwirtschaftlichen Familienberatungen und Sorgentelefone e. V.

Michael Wehinger
Vice-President of „BAG-Family and Enterprise“
Degree in Agricultural Engineering (FH)
Training in Systemic Family Consulting
Organisation Development
Systemic Coaching
Systemic counselling of family-enterprises

BAG – Family and Enterprise

The BAG Family and Enterprise is a national umbrella organisation for 28 regional associations active in Farm Family Counselling and/or Crisis Helplines. The BAG is a legally registered charitable association.
BAG and members work based on ethical principles and quality standards.

Family and Enterprise – a particular kind of complexity

The intermeshing of Family and Enterprise as a strength can also be very challenging.

- To cope permanently with developing tasks in family, enterprise and partnership leads to specific challenges
- Both systems are deeply connected and indivisible
- A special focus on family relationships is therefore a good investment with direct influence on business efficiency

What BAG does

- Advocacy on National and European levels
- Trainings and formations for our members
- Organisation of conferences
- Information and documentation
- Development of quality standards
- Member off the IALB
- Member off the RSE (Rural Solidarity in Europe) Network

What our members offer

Our members offer a wide range of support and counselling for family farm enterprises in challenging situations. These could be personal, economic, health or work-related issues.

The service includes

- A confidential space for counselling meetings on-site, in the office or via helpline
- Mediation in conflict situations
- Support in developing strategies
- Support in succession processes
- Support in proceedings related to authorities, banks, creditors, etc.

The service is legally and financially independent from BAG . We - the members - are mainly supported by the churches (Protestant and Catholic) and the regional Ministries of Agriculture.

BAG Family and Enterprise
Elisabeth-Seitz-Straße 16
D - 34613 Schwalmstadt
Phon +49 (06691) 2 3008
info@bag-familieundbetrieb.de
www.bag-familieundbetrieb.de

universitätbonn

Landwirtschaftskammer Nordrhein-Westfalen

"Cows and more – what the cows tell us ..."

Systematic classification, evaluation, advice

Abstract

The aim of the project "Cows and more" was the development of an expert system with which it is possible, using animal and behavioural criteria, to discover weaknesses in husbandry and management in freestall dairy barns. The digital root-cause analysis is based on a comparison of the individual farm with defined goals and comparison values of a specific dataset. Moreover, scientific model calculations concerning animals, husbandry and management are used.

Through the digital collection of data with a touchpad, technical production advice in the dairy industry will be further optimised. The objective and systematic collection of criteria and indicators in relation to behaviour, disposition and metabolism of dairy cows, a standardised root-cause analysis will identify weaknesses. The software will allow the further development of important approaches to optimisation.

Approach to analysis of weak points

1. Objective and systematic detection of animal-related parameters, the stable construction and management.
2. Data are analysed using the evaluation software locally and graphed comparison with reference values.
3. Detection of weak points and their attitude related causes.
4. Concrete recommendations for improvement of housing conditions.

Recording

The image-assisted system "Cows and More" provides several logically structured input form for different assessments. The screen displays the corresponding rating area (Boniturbereich) and the rating steps (Boniturstufen) appear in understandable images. The assessment can be made by selecting the corresponding image.

Evaluation

As a part of the evaluation, undesired deviations are marked as weaknesses in the evaluation graphs by the user. The program selects the weak point corresponding to the selected specific causes.

Reasons and measures

The selected weak points are listed by the program with the corresponding causes. The user can choose which cause fits the operation.

The user can then match measures to the selected causes.

www.landwirtschaftskammer.de

Conclusion

With this advisory instrument, all stakeholders are provided with an tool for root-cause analysis with which qualitative and quantitative criteria of animal behaviour and disposition are able to be objectively and systematically collected and analysed.
Using the results, uniform evidence-based recommendations for optimising the barn environment and management can be made.

Moodle based online teaching – the potential for distance training models in horticulture

Name: Colm Óg Doran
Supervisors: Dr. Monica Gorman (UCD), Mr. John Mulhern (Teagasc)

Background / Context

Moodle is a web-based learning platform used for course management and the sharing of course materials with students. It was adopted by Teagasc in 2008
This study looked at how Moodle could be developed within a Teagasc college to support full-time courses and to examine how it could potentially support distance education.

Objectives

Assess the use of Moodle and its future potential in Teagasc Botanic Gardens;

Identify how a module in horticulture can be adapted for online learning.

Methodology

- Observation of faculty use of Moodle in current teaching
- Focus Group discussions
- Survey with full-time students
- Support students and faculty with Moodle use over 2014/15 term
- Evaluate progress

- Pesticide Application 3-day course
- Pre-recorded classes uploaded as videos onto Moodle
- Students learned theory independently
- Practical instruction and examination delivered by College technicians

RESULTS

In 2014, only 3% of students agreed that all teachers used Moodle effectively
This rose to 25% in 2015

92% of teachers were keen to explore how Moodle can be used to enhance and improve their teaching

85% of teachers stated they had not received enough training in using Moodle

Students who took the online course performed similarly to students who had previously sat the traditional course

Those who had the lowest level of prior education performed poorest in written assessments

All students that took the course would consider doing another in an online format in the future

Conclusions

Improvements were made in the use of Moodle over the course of this study in the Botanic Gardens,
However teachers need further support in their use of the technology to utilise Moodle fully.
The Pesticide Application online course showed that short courses can be adapted for online delivery,
But more research and evaluation into this potential must take place.

‘Best Practice Experience in Farmer Discussion Groups - Development of an Advisors Handbook’

Conor Holohan[1,2], Jim Kinsella[2], George Ramsbottom[3]

[1]*Teagasc, Advisory & Training Office, Tullamore, Co. Offaly*
[2]*UCD, Belfield, Dublin 4*
[3]*Teagasc Headquarters, Oakpark, Carlow*

Rationale

- Discussion groups provide numerous benefits to farmers.
- Effective facilitation is integral to the success of the group learning process (Millar & Curtis, 1997; Heron, 1999; Daines et al., 2002).
- 697 discussion groups with approximately 16,000 farmer members in Ireland (Teagasc, 2013) – this is expected to rise significantly due to the Department of Agriculture’s new ‘Knowledge Transfer Programme’.
- Many new facilitators entering the system with limited experience.
- No dedicated handbook available for the facilitation of farmer discussion groups.

Aim

To strengthen advisors’ competencies and confidence in the facilitation of farmer discussion groups.

Objectives

- To identify the common problems experienced by advisors in their role as discussion group facilitators.
- To establish advisors’ and farmers’ perspectives on the effective delivery of discussion groups.
- To identify the best practices in farmer discussion group facilitation in Ireland and internationally.
- To determine advisors’ preferences for the design and contents of the handbook.

Methodology

Stage 1
Exploratory phase to highlight key issues and common themes

Stage 2
Compilation of a preliminary set of best practices

Stage 3
Verification phase

Stage 4
Design and development of the handbook

Key Findings To Date

1. Advisors require more support and help in running discussion groups.
2. There is a recognised distinction between the challenges facing facilitators of drystock discussion groups and that of dairy discussion groups. This includes:
   - Different farmer motivations;
   - More on-farm information (KPI’s) available to dairy farmers.
3. Strong technical knowledge and good pre-meeting preparation are seen as key requirements of a good facilitator.
4. A lack of collaboration between facilitators has been highlighted.
   - The opportunity exists for advisors to attend each others groups and evaluate each others’ facilitation performance.
5. As well as the Facilitator’s Handbook there is interest in expanding the Teagasc webpage to include training videos and other useful materials.

Next Steps

1. Analyse data from national survey of farmers and advisors
2. Conduct interviews with advisors and external experts in group facilitation
3. Assemble and consult the editing group to assist with handbook development
4. Finalise the design and contents of the handbook and webpage

This research has been funded through the Teagasc Walsh Fellowship Scheme

Organic Farming in Ireland

Dan Clavin B.Agr.Sc., M.Agr.Sc., MSc(Agr)
Organic Farming Specialist, Teagasc

Organic Farming Explained

Organic production is:

"an overall system of farm management and food production that promotes soil health, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes".

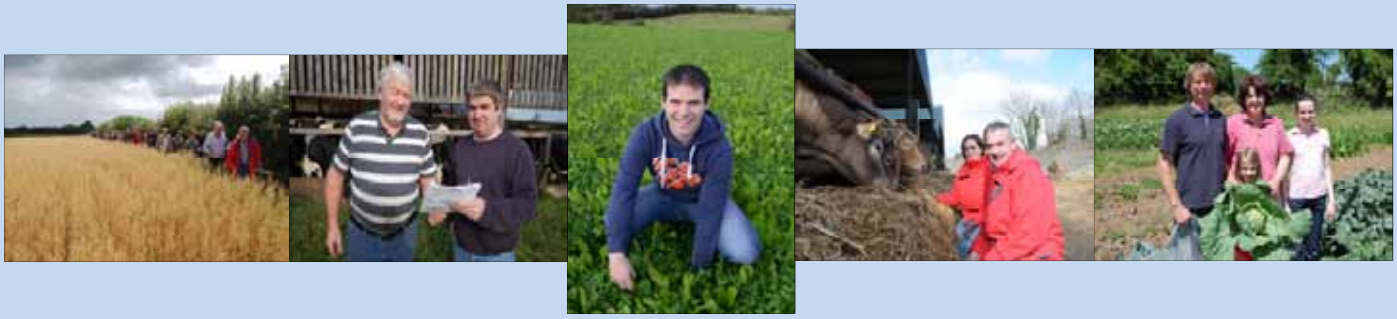
Irish Organic vs Conventional farmers:

Organic farmers :

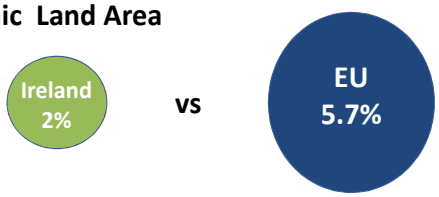
- are younger
- have a higher awareness of environmental issues
- are more likely to take risks
- utilize more sources of information
- can be more profitable

Teagasc support to organic farmers (main features):

- Provide compulsory 25hr FETAC training course to new organic scheme entrants
- Facilitate knowledge transfer discussion groups
- Lead national organic demonstration farm walks
- Produce technical articles
- Disseminate and conduct research

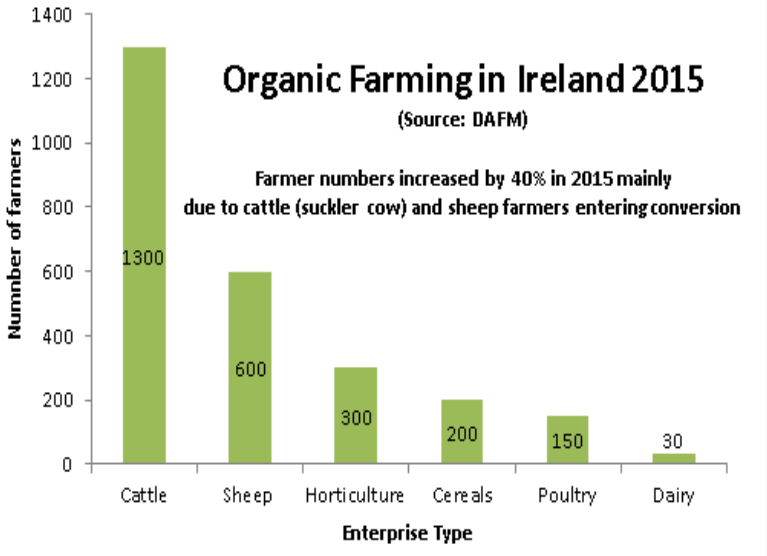


Organic Land Area



Ireland's Organic Farming Scheme-main features:

- New scheme introduced in 2015 resulted in ~40% increase in organic farmers.
- Payments up to €300/ha in-conversion; €170/ha full symbol for 5 years+.
- Mandatory 25 hr course for new entrants.
- Minimum 0.5 L.U./ha stocking limit required for full payment.



Conclusions and future work

- Organic farming offers a very good opportunity for Irish farmers to increase profitability.
- Compulsory accredited organic training courses prior to joining the organic farming scheme are considered very important in enabling farmers to make an informed decision prior to conversion.
- KT discussion groups are an efficient and effective way of improving knowledge amongst organic farmers.
- To supply more food to the organic market, the effectiveness of the organic value chain needs to be assessed including an appraisal of market demand and product supply information in order to improve value generation for all actors across the value chain and to draw lessons for future RDP programmes.

An assessment of the knowledge transfer supports required by high profitability dairy farmers

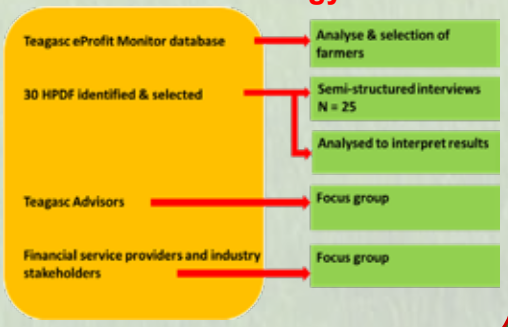
Eilish Burke[1,2] Dr. Monica Gorman,[1] Mr. John Maher[2] , Dr. Karina Pierce[1]
1. School of Agriculture and Food Science UCD, Belfield, Dublin 4.
2. Teagasc, Moorepark, Fermoy, Co.Cork.

Aim: **Identify the priority knowledge transfer (KT) supports required by high profitability dairy farmers (HPDF)**

Background

Amongst Ireland's dairy farmers, some are achieving high levels of profitability. How this is being achieved is of interest to the Irish dairy industry, including other dairy farmers. Furthermore, changes in the Irish dairy sector following milk quota abolition this year has the potential to bring about new challenges for dairy farmers. Consequently, to address these changes in the dairy landscape, future KT tools & supports may need modification. Therefore, the future KT requirements of HPDF must be assessed to understand their requirements, to allow Teagasc and the wider industry to allocate resources more effectively to meet their needs in the undefined future of milk production in a non-quota environment.

Methodology



Objectives

- To determine how HPDF are so profitable
  - –Technically
  - –Financially
  - –Socially.
- To establish how HPDF use the AKIS system
- To gain a clear understanding of priority KT needs of HPDF
- To make recommendations for the industry as a whole on prioritisation of use of resources for HPDF

Key Findings

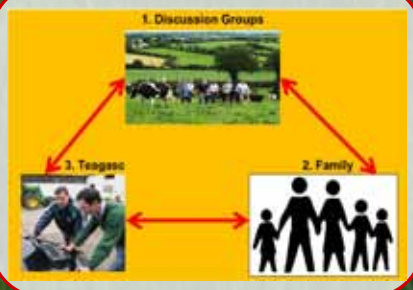
Technically

1.eProfit Monitor
2.ICBF information system
3.Grass recording programmes
4.AI usage
5.Grazing plan
6.Breeding plan

Financially

Study location: National Time frame: 2009 - 2013	HPDF Ave		ePM Ave
Net Profit (c/Litre)	19.82c/l	8.18c/l	11.64c/l
Net Profit (€/Dairy Ha)	€2914/Ha	€1658	€1256/Ha
Yield (Kgs MS/cow)	446		385
Cow No.	96		89
Stocking Rate (LU/Ha)	2.5		2.09
			N=30

Socially

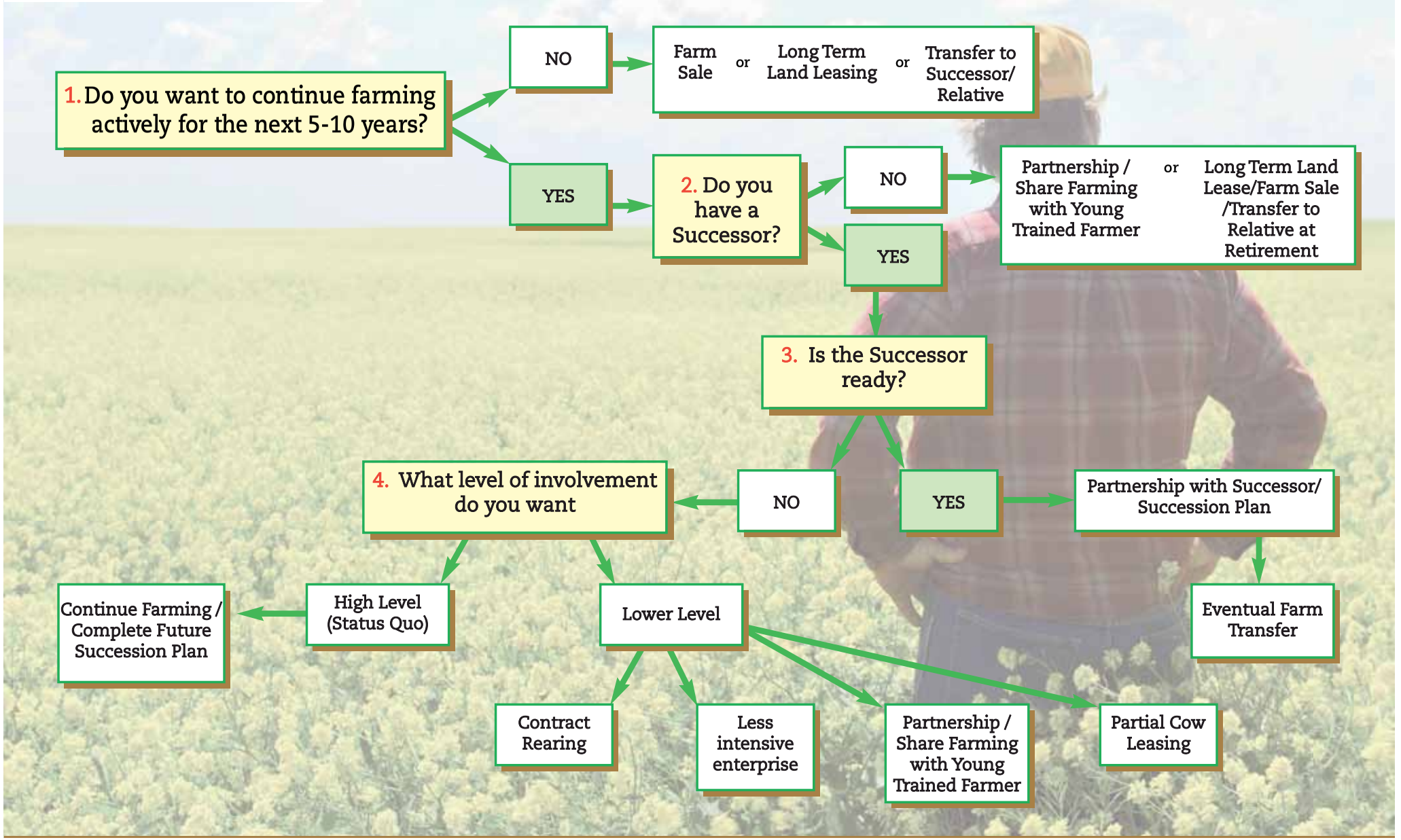


Conclusion

- The main focus for HPDF is to progress their farm business through the adoption of different farm business structures
- There is a distinct shift in KT focus among HPDF from technical to more organisational skills in the future
- To fulfil future KT needs HPDF will require increased reliance on a range of actors within the AKIS
- This study should be continued to further investigate/develop different KT tools & supports to meet the future requirements of HPDF

This project is funded through Teagasc Walsh Fellowship Programme: MAgrSc Agricultural Innovation Support 2013-2015

Collaborative Farming Decision Map for Existing Farmer/Landowner



Farmers attributes, management practices and attitudes associated with Commonage usage.

Walsh Fellow: Fergal Maguire
Teagasc Supervisor: Catherine Keena
UCD Supervisor: Helen Sheridan

Location: Tinahely Teagasc Advisory Office, Co.Wicklow

Background To This Study

- In Ireland there are 4500 separate commonages covering 422,400 hectares of land.
- 11,837 farms have access to a commonage.
- 90% of SACs, 60% of NHAs and 10% of SPAs are situated on commonage land.
- Traditional farming systems have contributed to creating these High Nature Value areas.
- Traditional farming systems in commonage areas have changed dramatically.
- Sheep numbers have been in decline, leading to undergrazing of some commonages.
- Shareholders rarely meet to discuss management issues, therefore commonages are a common resource managed by individuals.

Objectives

Establish how Commonage land is used today and what can be done to get farmers back using the commonage.

- Determine the main reasons that prevent farmers from continuing to use their commonage
- Assess the relationship between sheep production levels and usage of commonage.
- Identify the factors that may affect farmers establishing and joining commonage groups.

Methodology

Approach: Cross sectional study carried out in summer and autumn 2014

Farmer Survey Methodology:

Semi-Structured Interviews with 60 farmers who have access to commonage land

Mixed method approach:

Open-ended questions on how commonages are currently being used, on how these practices are currently affecting the commonages, and their opinions on setting up commonages associations.

Closed Questions on establishing production levels on the farm, labour units and land base

Commonage Group Study:

A commonage group was established to elucidate the opinions of shareholders with regard to commonage management.

Qualitative approach:

All shareholders on two commonages were invited to participate in a commonage group.
Attendance of shareholders, level of interest and proceedings were observed and recorded.
A follow up call was made to see how they individually felt that the association went.

Findings

Findings from Farmer Survey

- Pattern of usage has changed dramatically on commonages in the last 15 years
- 41% of participtants grazed livestock on their commonage in 2014
- A small minority of farmers graze sheep on commonage between November and July.
- Farmers who are putting ewes and lambs on to the commonage are weaning .9 lambs per ewe, farmers who are no longer putting any sheep to the commonage are weaning 1.36 lambs per ewe.
- The only factor that was clearly found to be associated with non-use of the commonage was off-farm employment.
- 70% of farmers agree that setting up a group where shareholders would meet to discuss commonage issues would be beneficial for their commonage

Findings from Commonage Group Study.

- 100% of active and inactive shareholders attended.
- All present agreed that it was essential for them to come together to discuss management issues of commonage.
- Topics discussed included getting stock numbers back up to reach minimum stocking rates, controlling vegetation and collectively joining agri environmental schemes on their commonage.

Strategic Use of Benchmarking tools - Focus on the eProfit Monitor

Fergus O Rourke[1,2], James Breen[2], Kevin Connolly[3]

[1]Teagasc, Advisory & Training Office, Roscommon town Co. Roscommon
[2]UCD, Belfield, Dublin 4
[3]Teagasc Coolshannagh,Co. Monaghan

Background

The increasing uncertainty that characterises the agricultural sector and constant development of technologies, demands sound business management skills (Cerf & Hemidy, 1999).
According to Gloy & LaDue (2003) the most important duty of the farm manager is to monitor and ensure the profitability of the business. Benchmarking has been noted in literature as potentially giving rise to positive impacts on profitability (Ronan and Cleary 2000). In an Irish context there are a wide range of financial management tools available from Teagasc to help farmers conduct cost control analysis, financial and physical planning. There has been varying levels of uptake of theses tools including the eProfit Monitor (ePM) amongst farmers.

Aim

This study aims to determine why those farmers that consistently use ePM for benchmarking continue to do so on an annual basis

Objectives

- To ascertain the level of utilisation of the ePM amongst farmers
- To identify characteristics or attributes associated with those farmers who use the profit monitor consistently
- To identify farmers motivations for using the profit monitor and how these motivations have changed over time
- To identify advisors attitudes towards the tool and the obstacles to its uptake
- How could the existing ePM tool be modified or improved to encourage greater use by existing users and increased adoption by non users

Methodology

Sources of Data

Population:	1767 (Dairy farmers completed ePM in 2015)
	78 (Dairy advisors)
Sample size:	108 (Consistent users since 2007)
Location:	Countrywide
Methods:	Mixed methods (quantitative and qualitative)

Methods of Data Collection

- Postal survey to Dairy farmers
- Online survey of Advisors
- Focus groups with Farmers
- Focus groups with Advisors

Profit Monitor Analysis 2015

	Top 10%	Average	Top vs Average
Gross Output/ha	€6091	€4392	€1699
Variable Costs/ha	€1699	€1437	€232
Gross Margins/ha	€4422	€2955	€1467
Fixed Costs/ha	€1167	€1148	€18
Net Profit excl. premia/ha	€3255	€1806	€1449

Profit Monitor

- The Teagasc ePM is an online financial analysis tool that is available to all Teagasc clients
- The focus of the eProfit Analysis is the most recently completed production year
- Data can be entered and reports viewed online
- Focus is to allow users get a detailed financial breakdown of their business.
- Financial data combined with selected physical data is analysed to indicate farm production efficiency
- Farm can be analysed on a whole farm basis and/or on an individual enterprise basis
- Allows farm financial performance to be benchmarked

Uptake of ePM- the Irish context

- Dramatic increase in the number of farmers using the ePM from 600 in 2003 to almost 7000 in 2014
- Various EU/state sponsored extension schemes which directly incentivised farmers to participate in new technology programmes have resulted in an increased number of farmers using the ePM to benchmark their farms
- Evidence to suggest a steep decline in numbers using ePM once the DEP scheme ceased
- The fact that so many farmers stopped completing the ePM suggests that the initial increase in numbers of farmers completing it was due to it being a requirement of the scheme
- The focus of my research is to get an insight into what makes some farmers continue to use the ePM and how they utilise that information from the ePM in farm decision making

Dairy Efficiency Programme (DEP) -encouraged best practice adoption in grassland, breeding and financial management via discussion groups

What's the Literature saying

Wilson *et al.* (2005) said "a benchmark is a performance indicator value that identifies a specified level of performance.

Benchmarks used

- Previous years performance on the same farm
- Teagasc targets-national or local
- Local Monitor/BETTER farm figures
- Other members of discussion groups
- Top 1/3 and average figures from bulk analysis

This project is funded by Teagasc through the Walsh Fellowship Scheme

The influence of knowledge transfer uptake on the profitability of beef farms and the knowledge transfer requirements of beef farms with varying levels of profitability

[1] [2]James Dunne, [2]Dr. Bridget Lynch [3]Pearse Kelly
Teagasc Advisory Office, Mellows Campus, Athenry, Co. Galway. [1]
School of Agriculture and Food Science UCD, Belfield, Dublin 4. [2]
Teagasc Grange, Dunsany, Co. Meath. [3]

Project Aim

- To evaluate and document the relationship and influence KT and innovation uptake has on the profitability of beef farms
- What KT and innovation measures farmers feel they require and what they would be willing to adopt at farm level

Background

- 100,000 herds involved in beef farming nationally (CSO, 2012)
- Irish beef sector accounts for 30% of value of Irish agricultural outputs (Bord Bia 2015)
- Proportion of economically viable dry stock farms remains low, at about 15% and 22% for cattle rearing farms and non breeding farms respectively (NFS, 2015)
- Huge variability in the level of profits made from beef farming (Teagasc, 2015)

Project objectives

- Identify the current economic performance levels on Galway/Clare beef farms and distinguish why performance on these beef farms varies
- Identify the relationship between KT uptake and overall profitability of the enterprise
- Identify farmer's attitudes towards change and adoption of new practices and what have been the barriers in adopting new practices in the past
- Determine across differing farm profitabilities what farmers feel they require to progress and what KT/innovation practices they would be willing to implement

Methodology

- Galway/Clare Advisory Region
- Mixed methods study
- Analyse of 2012 & 2013 ePM dataset
- Top 10 , Average 10 and Bottom 10 Farmers Selected on Gross margin
- Semi-structured one to one surveys (n=30)

Key Findings (2012 & 2013 ePM Data)

	Farmer Profitability Category (Av. 2012 & 2013 ePM)			
	Top 10	**Average 10**	**Bottom 10**	**Top v Bottom**
Stocking Rate LU/ha	1.66	1.238	1.11	**+ 0.58**
Gross Output €/ha	1513	761	554	**+ 959**
Total Variable Costs €/ha	696	552	745	**- 49**
Liveweight (kg LW/ha)	624	371	261	**+ 363**
Gross Margin €/ha	817	208	-191	**+ 1008**

Key Findings (One to One Survey)

- The number of good farming practices completed on farm are higher as you move from the bottom performers through to the top performers. Showing a direct relationship between KT uptake and profitability
- The main limitations in the adoption of new practices differed greatly within each group; land availability and farm infrastructure were seen as the biggest limitations in the top performers vs. motivation and lack of profitability in the bottom performing group
- Farmers have identified extension priorities they feel they need to improve profitability;
  - A separate KT model for each level of farmer
  - More one to one contact with advisors
  - Continuation of Better Farm Programme

References
- Bord Bia, 2015. Factsheet on the Irish Agriculture and Food & Drink Sector
- Central Statistics Office, 2012. Census of Agriculture 2010, Final Results.
- Department of Agriculture Fisher's and Food (DAFF) (2010), in Food Harvest 2020 A vision for Irish Agri-food and fisheries, Irish Department of Agriculture, Food and Fisher's.
- National farm survey, (2015). Available at:: http://www.teagasc.ie/publications/2015/3646/The_viability_of_the_Irish_farming_sector_in_2014_Teagasc.pdf
- Teagasc, 2015. e-Profit Monitor analysis Drystock Farms 2014.

This project is funded by Teagasc through its Walsh Fellowship Scheme

The UCD/Teagasc MAgrSc in Agricultural Innovation Support Programme.

[1] Joanne Masterson, [2]Dr. Bridget Lynch [3]James Keane
Teagasc Advisory Office, Longford. [1]
School of Agriculture and Food Science UCD, Belfield, Dublin 4. [2]
Teagasc Advisory Office, Mohill, Co. Leitrim [3]

Study Title: Review of advisory tools & methodologies to engage with 'hard to reach' drystock farmers

Study aim: To assess if advisory services are engaging with Teagasc 'club contract' clients in the Roscommon-Longford advisory region

Background

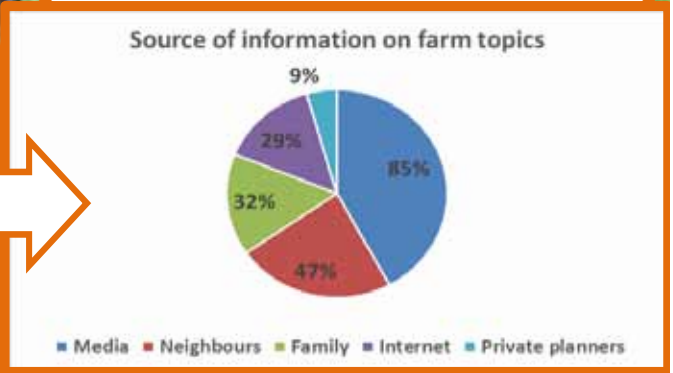
- Teagasc – 45,000 clients
- 14,000 Discussion Group members
- 18,733 'Club Contract' clients with minimal contact for Schemes
- Potential to increase profitability and efficiency on Irish farms
- BETTER Farm Programme as a key knowledge transfer tool.

Study objectives

- Identify if Teagasc advisory services are engaging with 'HTR' farmers
- Where are 'HTR' farmers sourcing information on farm topics
- What influence is the BETTER Farm Programme having in a local area
- Identify supports required by advisors to facilitate delivering K.T. programmes

Methods

- Longford/Roscommon Advisory Region
- Literature Review
- Teagasc 'Club Contract' Client Survey n=100
- Interviews with discussion group members n=30
- Focus group with beef and sheep advisors



Key Findings

Interviews: Influence of BETTER Farm

- High uptake of reseeding & drainage practices adopted by local beef discussion group & surrounding local area – improved silage quality due to this change
- Farmers learn & get advice from BETTER Farm participants
- Increased stocking rate – future target for beef farmers
- Improved grassland management – future target for sheep farmers
- Farmers benchmark themselves off BETTER Farm

Advisor needs

- Smaller client base – lack of time affecting service to clients
- More focus on technical role rather than scheme work duties
- Have a sense of loyalty to all clients, want to keep intact the advisor/client relationship

Comparing Forestry & Agricultural Returns "Apples with Oranges?"

Forest Investment Valuation Estimator- FIVE

John Casey, Forestry Development Department, Teagasc john.casey@teagasc.ie

Keywords:

Indicative financial returns, decision-support tool, annualised equivalent value

Abstract:

Forestry advisors require a means of expressing potential returns from forestry, in order to equivalise these intermittent forestry returns with annual agricultural returns and to make relative comparisons.

i.e. comparing Apples with Oranges, similar forms but not the same.

The Forest Investment Valuation Estimator (FIVE) is a decision-support tool for Teagasc forestry advisors, using Discounted Cash Flow (DCF) to model indicative financial returns for the forestry land-use option.

Methodology:

Potential timber revenues are generated by an MS Excel Model through the selection of crop characteristics & management regimes. Additional revenue streams & costs can also be inputted (see Fig. 1).

Model Outputs:

(a) Provides totals for (i) grants and premium payments; (ii) timber revenues - thinnings and clearfell; (iii) costs; and (iv) timber volume.

(b) Provides a breakdown of volume by product category together with an estimate of timber revenue & cash flow (see Fig. 2), using historical timber prices or future estimates.

(c) Provides the Net Present Value (NPV) per hectare for all costs and revenues.

Net Present Value (NPV) = Return per hectare over the lifetime of the crop (rotation),expressed in today's money.

(d) Converts the NPV to an Annual Equivalent Value (AEV) or annuity based on rotation, current age and discount rate.

$$AEV = \frac{r.NPV}{1-(1+r)^{-n}}$$

Source: Ryan (2016). Unpublished Thesis, NUIG

where *n* is the number of years into the future that the income amount will be received, or spent if the income amount is negative, *r* is the discount rate.

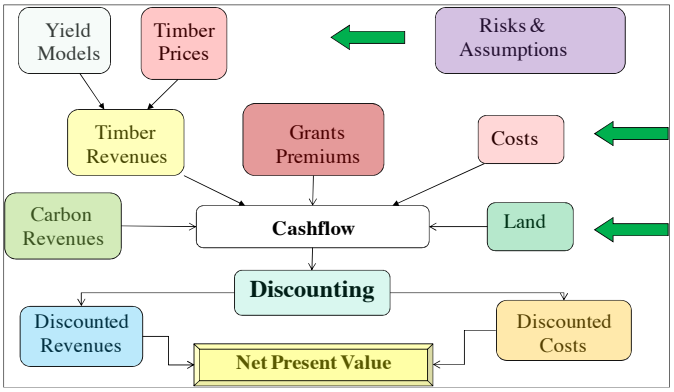
Annual Equivalent Value (AEV) = Annualised value of the timber crop in today's money.

Results:

The AEV figure (€/ha) can provide indicative comparisons with the gross margin (ex. BPS) per hectare (€/ha) per annum of other farming enterprises (see Fig. 3), when considering future land-use options.

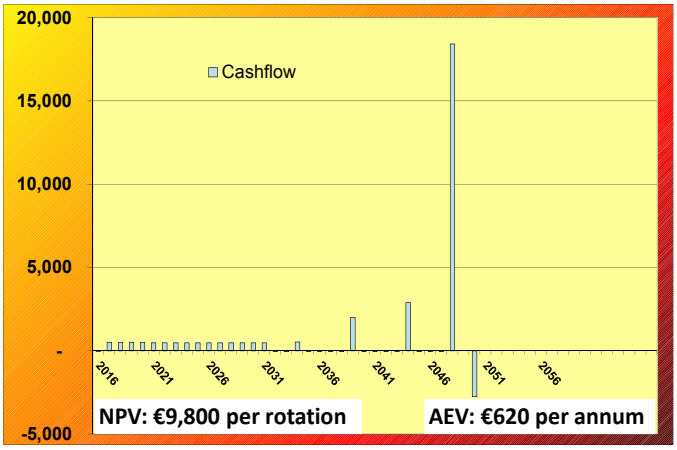
FIVE gives farmers choosing the forestry option a better understanding of the potential economic and environmental consequences of choosing different species, site types, costs, management and harvesting regimes.

Figure 1: Discounted Cash Flow pathway



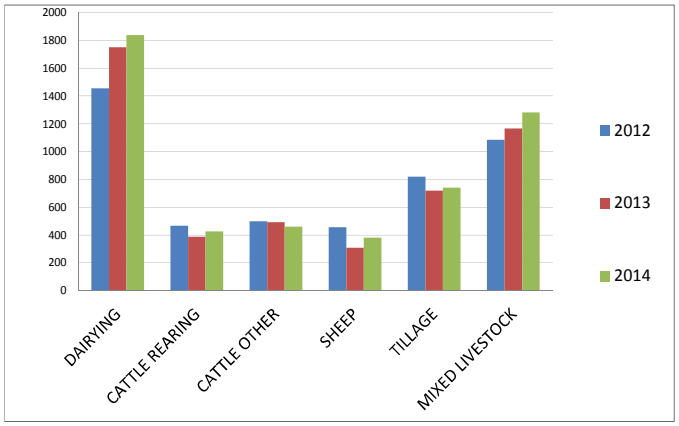
Source: Ryan et al., (2013). Modelling Inter-temporal Differential Returns to Agricultural and Forestry Land Use using the Forest Investment and Valuation Estimator (FIVE).

Figure 2: Indicative financial returns for a Sitka spruce conifer plantation, Yield Class 24 (€/ha)



Source: Teagasc FIVE Model

Figure 3: Average gross margin per hectare (ex. BPS) by farm system, 2012- 2014 (€/ha)



Source: A .Kinsella, Farm System Gross Margin Analysis, Teagasc National Farm Survey (various years)

Acknowledgements:

COFORD funding- the Programme of Competitive Forestry Research for Development

Mary Ryan, Rural Economy & Development Programme ,Teagasc

Henry Phillips, forestry consultant

An Analysis of the Use of Financial Planning Tools by Dairy Farmers and Advisors

John Greaney[2], Dr. Michael Wallace[1], Mr. Fintan Phelan
1.School of Agriculture and Food Science UCD, Belfield, Dublin 4.
2. Teagasc, Moorepark, Co.Cork
3. Teagasc Portlaoise, Co. Laois

Background / Context

There is a view that a significant number of recent entrants to dairying still do not appreciate fully the importance of managing risk around farm development planning and cash flow management. They need to be more aware of the impact of capital development and volatility on cash flow, as well as understanding the true cost of producing a litre of milk and how they can manage the factors that influence this cost.

Objectives

- Review and evaluate existing farm planning tools and approaches that are available to farmers and advisors
- Determine the extent to which financial planning tools are used to assist in the farmer's decision making process
- Examine the attitudes of farmers and advisors towards business planning and to determine the key influences, external sources of advice and intra-family responsibilities in relation to financial recording and planning within farm businesses
- Make recommendations about the development of new modes and tools to assist advisors and farmers in preparing, reviewing and updating farm plans

Cash Plan Programme

- In 2014, the Department of Agriculture, Food and the Marine (DAFM) supported the 'Cash Plan Programme 2014', highlighting the importance of managing risk around farm development planning and cash flow management
- The aim was to support new entrants into dairy farming (i.e. those who commenced supplying milk on or after 1 April 2008) to become familiar with the impact of capital development and volatility in cash flow, as well as understanding the true cost of producing a litre of milk
- Eligible participants were entitled to a sum of €1,000 for satisfactory participation in the programme and completion of three relevant tasks:

1. Complete 'My Farm, My Plan- Planning for my Future' strategic planning workbook
2. Record the monthly cash flow for 2014
3. Prepare a monthly cash flow budget for 2015

Methodology

- Literature review
- Survey of 80 farmers in Cork East who took part in the 'Cash Plan Programme'. 55 of these farmers completed the course in full.
- Interviews with key industry stakeholders: Banks, Processors, Accountants, Feed Companies, Solicitors, Irish Farmers Journal, Bord Bia.

Farmer Questionnaire

- Questioned on a one to one basis
- 53 questions - both open and closed questions
- Structured around capturing a detailed account of the following:
  - Farm Details- general background
  - Workload- Employment details, day-day running of farm
  - Education- Qualifications or level of education received
  - Farm IT- level of competency with computers
  - Business Planning- familiarity with Bus. Tools
  - Development and Investment- Level of investment/debt
  - Financial Management Tools and Practices- who carries out the financial management e.g. spouse
  - Future Plans- Increasing cow numbers etc…

Some Key Findings

Farm Details:

- Average No. Cows 96
- Average Farm Size 147 acres
- Average age 35
- 40% farming in partnerships (family)
- Average Milking Platform - 119acres

Workload

- 30% also working off farm
- 85% of farms are a 'one man show'
- 41.25% rely on family members to carry out daily tasks

Education

- 28.75% went to 3rdLevel

Farm IT/Bus. Planning

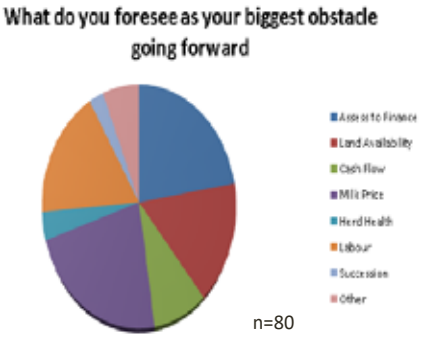
- Only 26.25% of farmers felt very comfortable using laptops/computers
- 51.25% found the Teagasc eProfit Monitor useful
- 32.5% of respondents thought the workbook tool- My Farm My Plan to be of benefit to their business

Financial Management

- 46.25% rely on their spouse to keep farm records.
- 50% have a farm office
- 80% calculate their costs of production
- Family proved to be the most influential factor when making major financial decisions on the farm

Future Plans

- 58.75% intend on expanding



Conclusions/Recommendations to Date

- 60% of farmers surveyed approached Teagasc for advice before investing money in their business
- 61.25% of the sample believed they benefitted from participating in the 'Cash Plan Programme'
- There is scope there to run courses in the future with 68% of farmers expressing an interest in attending a number of annual training days again to help with cash flow budgeting/understanding finance/business planning
- 31% of the farmers interested in additional training days would be wiling to pay for the training
- 87.5% farmers restructured their debt over the last 5 years but huge levels of debt exist on farms in East Cork
- For greater adoption of the Teagasc financial tools there must be further buy-in from the advisory staff

This project is funded by Teagasc through its Walsh Fellowship Scheme

A Study of Communication Methods for Teagasc to Engage with Agricultural College Graduates from Graduation to Farm Ownership

John W Kelly[1] Padraig Wims[2] Kevin Connolly[3]

1. Teagasc Ballyhaise Agricultural College ,Co. Cavan.
2.School of Agriculture and Food Science UCD, Belfield, Dublin 4.
3. Teagasc Coolshannagh, Co. Monaghan.

1. Background / Context

- Currently no existing method for Teagasc to keep in contact with Agricultural College Graduates.
- It is important that Teagasc maintain contact with them until they assume management of their home farms.

2. Objectives

1. Identify what communication methods agricultural graduates would like from an extension organisation.
2. Assess and identify the characteristics of recent agricultural college graduates and their experience of agricultural college.
3. Develop and evaluate methods of communication for agricultural advisors to engage with agricultural college graduates.
4. Evaluate contact between a Teagasc advisor and existing agricultural college students.

3. Methodology

Population

All Level 6 Ag College graduates since 2008

Sample

Graduates from Ballyhaise Agricultural College since 2008 (n=464)

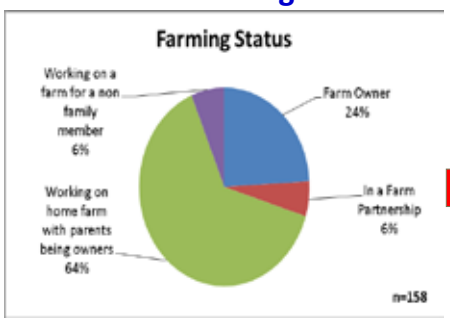
Research Methods

- A postal survey Ballyhaise Agricultural College graduates since 2008 (n=464)
- Identified methods of communication to be used between graduates and Teagasc advisors.
- Methods piloted with sample and evaluated to identify the most successful methods.
- Evaluations of contact between students and advisors by a farm walk and guest lecture.

4. Findings

Survey of Ballyhaise Graduates (n=166)

- 82% wanted to receive updates about the College farm
- 60% of respondents were users of Facebook.
- 77% wanted to engage with Teagasc
- 86% wanted to attend events for recent graduates.



Identified Methods of Communication

- Monthly newsletter from Ballyhaise College
- Text message updates to graduates about Ballyhaise College farm
- Facebook group page for graduates

Text Message

- All respondents read the text messages
- 93.6% had a smartphone.
- 97.3% of respondents said that they would like to continue to receive text messages

Newsletter

- Circulated via email, Teagasc Website and college Facebook Page
- Included farm management tips and enterprise performance from college farm
- All respondents found the content interesting and 94.3% wanted to continue receiving it.
- 73% used the newsletter to measure their farm performance
- 48.8% changed their farming practices as a result of its content

Facebook Page

- Received over 2000 likes during research
- Video of Autumn grass management had over 1200 hits.
- 43% of respondents checked into the Teagasc Ballyhaise Facebook page two – three times a week

5. Key Conclusions

Conclusions

- Graduates were very interested in college farm updates and in maintaining contact with Teagasc.
- Facebook proved to be the most efficient and interactive method.
- Most graduates prefer to use electronic methods of communication.
- Newsletter was found to be an excellent source of technical information.

Recommendations

- Teagasc advisors need to be introduced to students while in college.
- The advisory regions in Teagasc and advisors themselves with an interest in contacting graduates should also establish Facebook pages.
- Graduates could be integrated into existing discussion groups.
- Each college should consider developing their own newsletter.

This project is funded by Teagasc through its Walsh Fellowship Scheme

Teagasc eProfit Monitor (ePM)

- Farm Enterprise Financial Benchmarking System

Kevin Connolly & James McDonnell
Farm Management & Rural Development Department, REDP

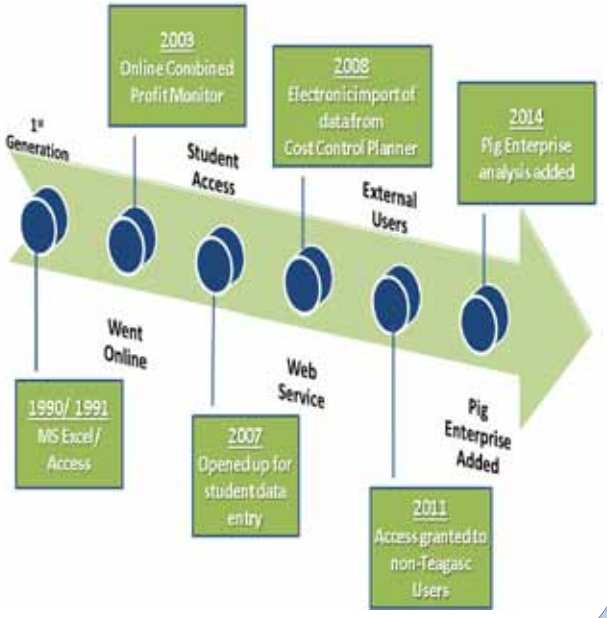
- **The Teagasc eProfit Monitor is an analysis tool used to prepare management accounts for the whole farm and each farm enterprise operating on the farm**
- **It can be used to evaluate the financial performance of a farm business by assessing each enterprise against a benchmark / standard.**
- **It facilitates open discussion of farm finances in public forums for the benefit of farmers**

- **Teagasc eProfit Monitor is used to prepare farm management financial statements**
  - **Profit And Loss; Balance Sheet**
- **Farm financial data is combined with selected physical data and analysed to produce Individual or Grouped farm reports**
- **Reports analyse performance of the Whole Farm or individual Farm Enterprise**
  - **Dairy, Cattle, Sheep, Tillage, Pigs**
- **Used to inform**
  - **Short term Cash Flow Budgets**
  - **Long term Business Planning**

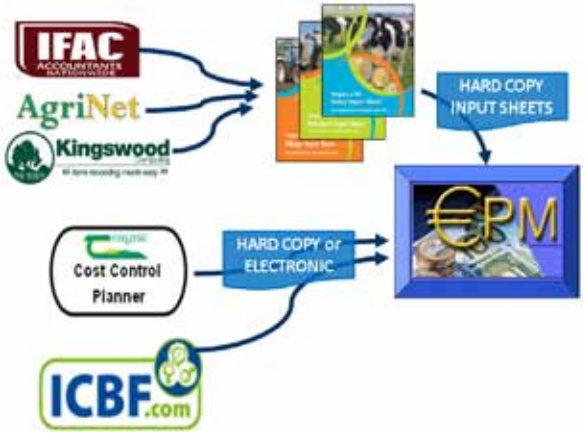
eProfit Monitor - Benchmarks Available

- **Previous year's performance on the same farm**
- **Teagasc targets – national or local**
- **Other members of discussion group**
- **Top 1/3 and average figures from bulk analysis**
- **Teagasc farm-walk host farmers**

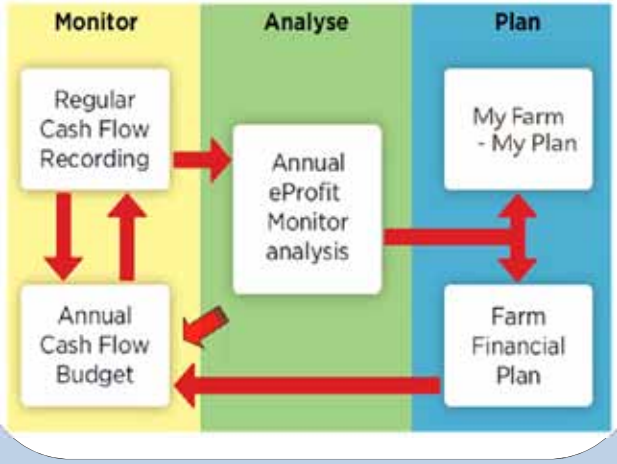
Development History



eProfit Monitor – Data Harvesting



Teagasc Farm Business Monitoring System



The Teagasc eProfit Monitor has Knowledge Transfer at its core -

- **It facilitates a review of "What happened" in the last production year and particularly addresses a farmer's key business question - "What are my costs of production?"**
- **Critically assessing past performance is a key step before planning forward for a farm business**
- **For advisers the eProfit Monitor reinforces technical work by affirming that technical improvements implemented are having the desired financial impacts at farm level.**

Record Keeping in Irish Pig Production: Factors Affecting Enrolment in Teagasc PigSys/ePM Recording Programmes

K. E. Glover[1,2*], J. Kinsella[1], and C. Carroll[2]

[1] School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland;
[2] Pig Development Department, Teagasc Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland;
*kaitlynn.glover@gmail.com

Context

Market factors and policy-driven regulations in the pig sector have significantly altered the profile of the typical Irish pig farm over the last decade. Production technology developments have made the sector more productive, but management technologies have failed to keep pace. Among them, record keeping technologies have undergone little amendment, prompting the necessity for significant review. Coupled with a renewed international interest in knowledge transfer (KT), this study seeks to examine the advisory role in management technology adoption and use, and other factors affecting on-farm adoption of recording tools.

1. Objectives

This study seeks to identify potential relationships between sociological and environmental factors and record keeping on Irish pig farms. The Teagasc PigSys recording system operates in an online platform (e-Profit Monitor) which stores and analyses quarterly data submitted by pig farmers to their Teagasc advisor. Utilising the Teagasc PigSys recording system as a basis of evaluation, three objectives are defined:

- Identify information sources affecting on-farm management of Irish pig units
- Assess information previously compiled through Teagasc PigSys system
- Identify factors influencing record keeping (RK) on pig farms
- Determine farmer-perceived outcomes of RK activities

2. Methodology

A.) Farm Visits

- Qualitative assessment of Teagasc advisor-producer interaction
  - » Standardised advisor questionnaire to assess farmer-advisor history and record keeping patterns
  - » Observation of farmer-advisor interaction and relationship

B.) Farmer Innovation Questionnaire (FIQ)

- 328 commercial pig farms in Ireland
  - » 189 active PigSys clients (c. 79,000 sows – 55%of Irish national herd)
- 302 farmers – distributed questionnaires by post
  - » 46% response rate (n=141)

C.) Questionnaire Follow-on Interviews

- Face-to-face interviews of 61 farmers who indicated willingness to participate with FIQ response
- Qualitative, narrative data collection through semi-structured queries based on FIQ responses

Empirical data and interviews with pig farm advisors assisted in the development of this study model, displaying factors which have the ability to affect on-farm RK activities.

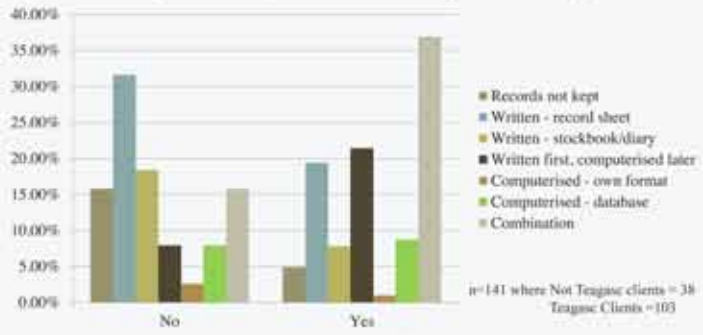
Figure 1: Irish Pig Production Record Keeping Study Model.

3. Preliminary Findings

Farm location and farmer age did **not** feature as significantly associated with RK, but were significantly associated with technology use (home computer) and unit size (# of sows).

- Average farmer age = 49 years
- Average number of sows = 588 sows

Figure 2: Relationship Between Teagasc Client Status and Type of Records Kept



Teagasc advisory services were widely used (77% farmers) while 'other' advisory services were used by just 23% farmers.

Teagasc client status was associated with the type of on-farm RK activities ($p=0.012$) with 58% of Teagasc clients reporting use of PigSys records.

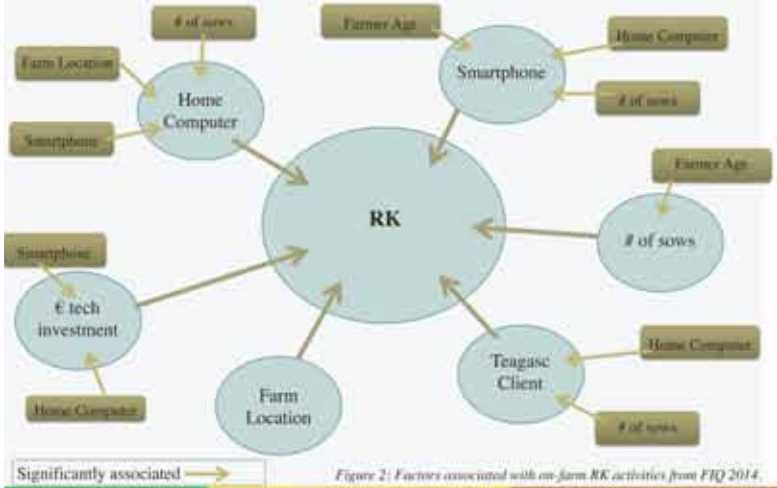


Figure 2: Factors associated with on-farm RK activities from FIQ 2014.

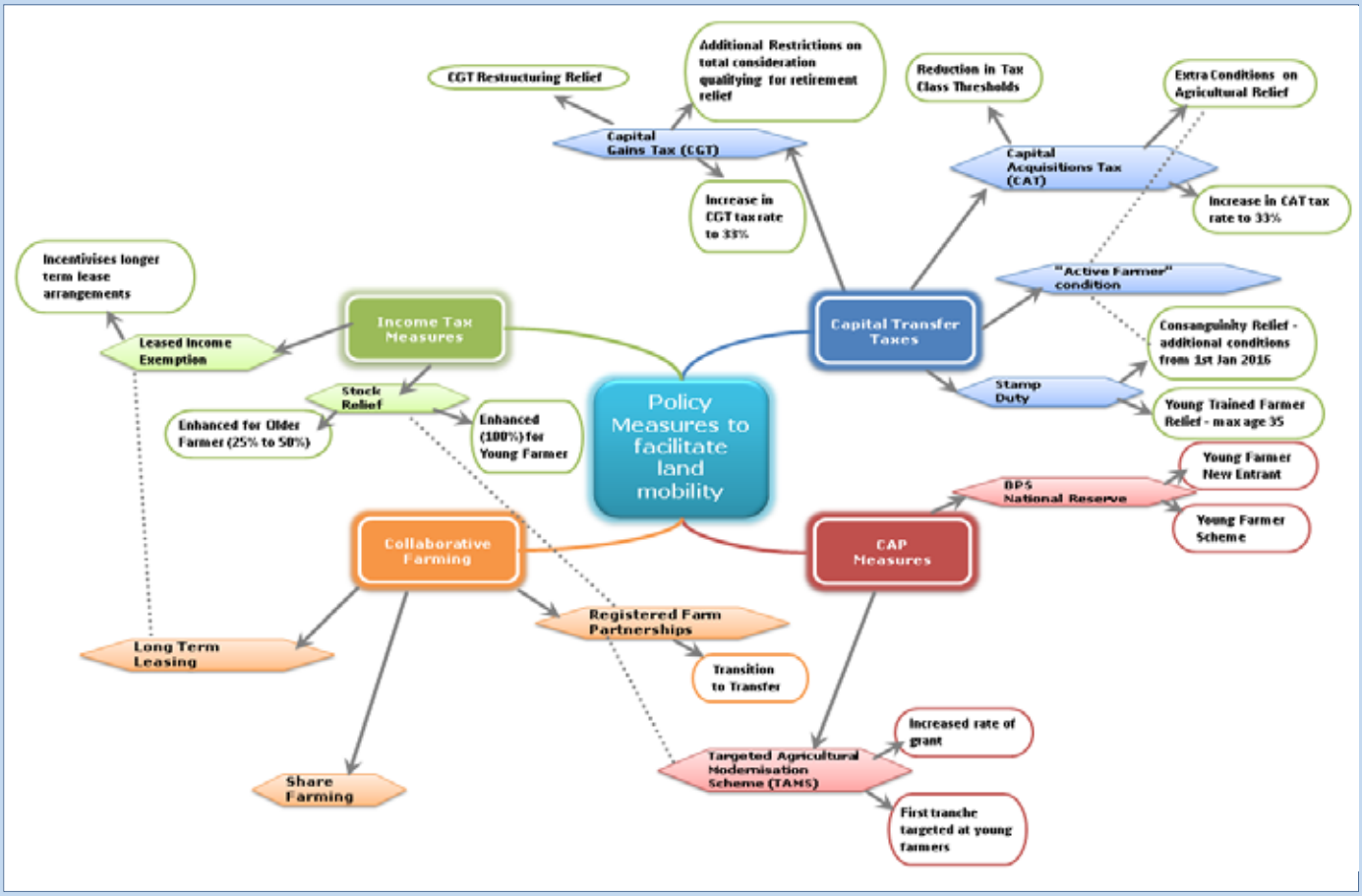
4. Conclusions

1. Advisor-producer interactions no longer fit within 'Top-Down' KT/advisory approach
   - » Collaborative KT involving all stakeholders is preferred approach of Irish pig farmers
   - » Farmer-advisor relationships valued highly, exhibit great trust and longevity for Teagasc advisors
2. Efficient Teagasc advisory services are important to success of farm management /RK regime
   - » Pig producers have little interaction with external advisory sources; just 1 in 4 utilised a non-Teagasc advisor
   - » Difference in RK type undertaken by Teagasc clients and non-clients
3. Personal technology use similar across most Irish farms
   - » Home computers more widespread than smartphones – reasons for technology use greatly varied
   - » Expansion and innovation in technology is increasingly demanded among current technology users
4. Varied motivations and influences to engage in on-farm RK
   - » Many factors significantly intertwined; change in RK paradigm requires multifaceted approach (see Figure 2)

This project is funded by Teagasc through the Walsh Fellowship Scheme.

Current Policy Measures to facilitate Land Mobility

K. Connolly, J. McDonnell, T. Curran
Farm Management & Rural Development Department, Teagasc



Key Age Triggers for Land Transfer Events

Agri-Taxation Review

- This review was conducted during 2014 with 46 submissions as part of the public consultation process. The final report was published October 2014
- There were three main policy objectives outlined in the report
  1. Increase the mobility and the productive use of land
  2. Assist Succession
  3. Complement wider agricultural policies and schemes
- Many of the recommendations were introduced in Budget 2015

Common Agricultural Policy Reform

- National Reserve priority category for Young Farmer New Entrants in addition to the Young Farmer Scheme top-up payments act as an incentive for young farmers (< 40 years old) to
  - Establish holdings in their own right
  - Join with older farmers in partnerships or joint-venture arrangements
- Funding under the TAMS capital grants scheme is to be targeted at new entrants young farmers

Summary

- Policy measures are multi-faceted and the measures are often inter-linked
- There has been significant recent change in this area as a result of the Agri-Taxation Review and the recent CAP Reform
- The Food Harvest 2020 strategy document was a key catalyst for land mobility policy change

Leopold Kirner and Andrea Payrhuber
University College for Agrarian and Environmental Pedagogy
Institute of Farm Business Management, Research and Innovation
Angermayergasse 1, A-1130 Vienna; www.agrarumweltpaedagogik.ac.at

Future requirements for consulting services in the field of farm business management in Austria from farmer perspectives

1) Objectives

Evaluation of existing consulting services and preferred sources of information

Analysis of future requirements for consulting services in this field

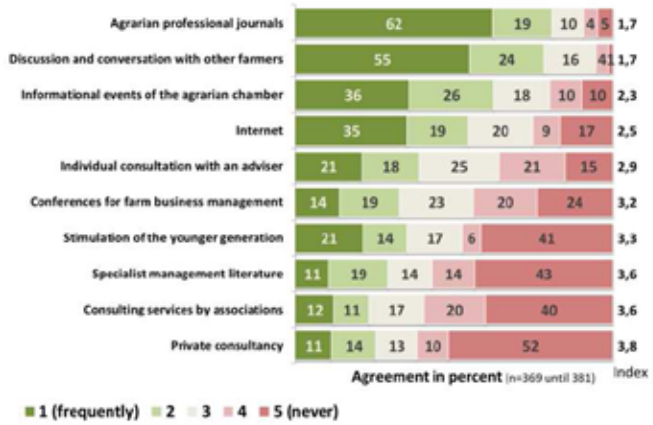
2) Applied methods

Five group-discussions with farmers

Computer assisted teleph. interviews (n=413)

Online survey (n=1,100 until 2,000 according to the item)

3) Key findings

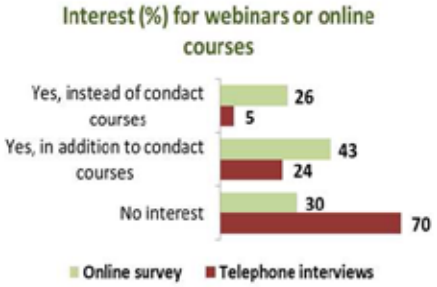


Farmers sources of information

- ✓ Important role of professional journals and exchanges with colleagues
- ✓ Young farmers rely on the Internet („quick information at the touch of a button“)
- ✓ Services by associations or private consulting agencies (not yet) hardly used
- ✓ Significant differences acc. size, farm type, ...

Favoured consulting topics

- ✓ Demand for many different issues
- ✓ Guidelines for government support and life quality at the very top
- ✓ Only in this place: legal aspects, management analysis, commercial assessments
- ✓ Strong desire for more advanced and professional advice (group discussions)
- ✓ Sign. differences acc. size, farm type, ...



4) Conclusion and outlook

Study reveals potential to optimise future consulting services in Austria.

Discussions on behalf of the most relevant findings are necessary to boost future packages.

Staff Qualification Development - LRATC

Objective: To provide the staff with necessary skills and high-quality knowledge

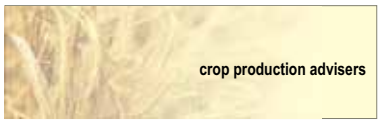
Participants: 33 economic advisers; 110 accounting advisers; 23 crop production advisers; 17 livestock advisers; 26 entrepreneurship advisers; 100 rural development advisers

The scheme of the qualification development:

Development of Staff qualification

- training of new staff
  - trainings
  - practice
- promotion of professional competencies
  - training for sector professionals
  - certification
- promotion of social competencies
  - studies
  - CECRA certification

Promotion of professional competence



crop production advisers

- Cross compliance advisor in the field of environmental, plant health and good agricultural and environmental conditions
- Crops forecasting and benchmarking (assessment)
- Establishment of fertilization plans
- Calculation of farm nutrients balance and impacts
- Organic farming

livestock advisers

- Cross compliance advisers in the field of animal identification and registration, public, animal health and animal welfare
- Herd Management Plan
- Calculation of farm nutrients balance and impacts
- Development of Feeding Plan
- Preparation of review on Milk recording data

economic advisers

- The basic production plan
- Full production plan
- The Complex analysis of company, including the resources and finances

Rural Development/Entrepreneurship advisers

- The basic production plan
- The basics in Agriculture
- Establishment of Company / registration

Accounting advisers

- Accounting services
- Tax planning

Promotion of social competence CECRA CERTIFICATION SYSTEM

MODULES

1. My Profile as a Consultant
2. Communication and Relationship Building in Advisory Work
3. Teamwork and Team Leadership
6. Project Management / Project Advisory Work
7. Shaping Advisory Processes
8. Handling Changes / Change Management

Annually Provided trainings for: crop production advisers – an average of 6 days per year; livestock advisers – 8 days per year; Economic advisors – 6 days per year; Accounting advisers – 8 days per year; Rural Development/ Entrepreneurship advisers - 8 days per year

EUFRAS is taking a coordinating role in rural advisor qualification and certification in Europe by joining the IALB qualification and competence development standard CECRA (Certificate for European Consultants in Rural Areas). Since June, 2015 Latvian Rural Advisory and Training Centre is hosting an EUFRAS-CECRA Office which functions as a contact point for all issues and questions concerning the rural advisor qualification and competence development program CECRA in Europe, outside the German speaking area.

LRATC was accredited by IALB CECRA-AG and since May, 2016 is running as an official Regional Certification Body and CECRA Module provider in Latvia.

Accreditation process for CECRA Regional Certification Bodies as described in the Cooperation and Usage Agreement between IALB and EUFRAS:

The interested institution applies for admission as Regional Certification Body to EUFRAS.

EUFRAS forwards the application to IALB CECRA-AG with the request to give its opinion.

EUFRAS-Board decides in consideration of the recommendations of IALB CECRA-AG and EUFRAS CECRA Office on the recognition as Regional Certification Body and, if positive, concludes a partnership agreement in coordination with IALB.

Details on CECRA are described at www.cecra.net

Assessing on farm Machinery Costs using the "Machinery Costs Calculator"

Michael Hennessy[1], Shay Phelan[1], Ciaran Hickey[2], James Irish[3],

[1]Teagasc, Oakpark, Carlow, [2]Teagasc, Enniscorthy, Co Wexford,
[3]Brett Brs, Kilkenny

1. Background

- Machinery costs up to 40% of "variable" costs

Difficult to assess costs due to
- Ownership patterns
- Allocation to enterprises
- Depreciation allowances

- Standard approach needed

- Link to Teagasc e-Profit Monitor needed

2. Assessment of needs

- Funded Masters program with UCD

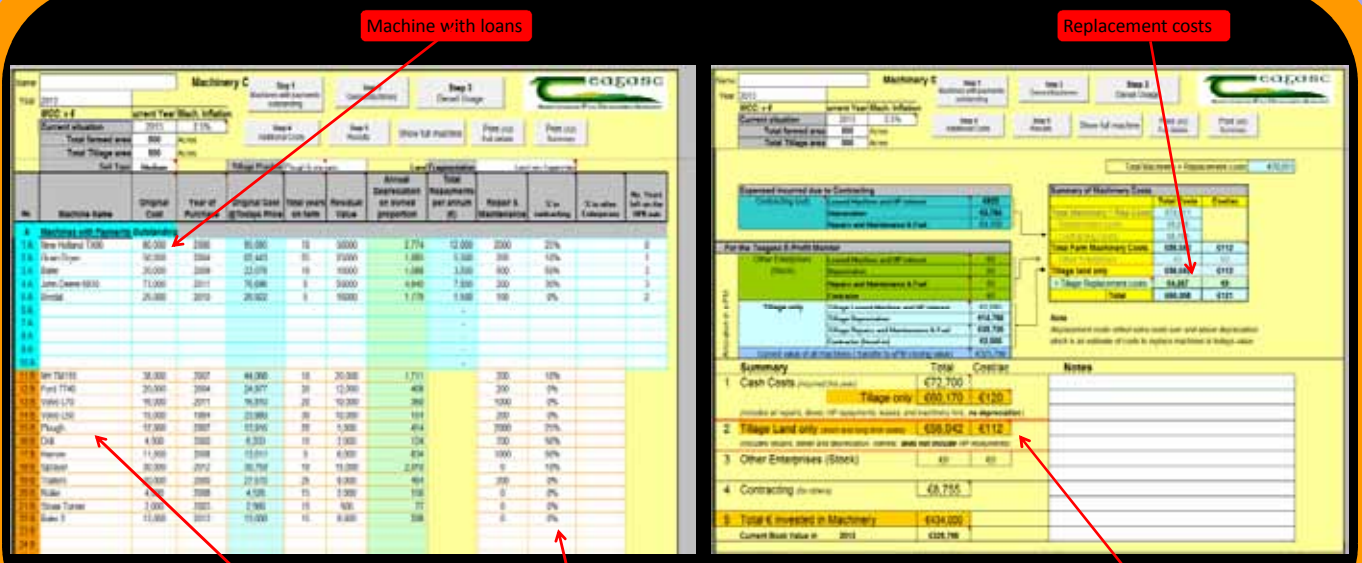
- Machinery identified as-
  - Attractive to entice farmers to financial analysis BUT
  - Consistent assessment of costs is difficult – but needed

3. Program development

Challenges
- Concepts easily understand by "non machinery" people
- User friendly to input/output
- Connect with Teagasc e-Profit Monitor

Opportunities
- Engage farmers with financial analysis
- Develop farmers financial understanding
- Hone advisors skills in the area
- Gather industry information

4. Machinery Cost Calculator - Output



6. Core Objectives

- Increase farmers engagement with Financial Analysis
- Standardise machinery costing methodology across the industry

Masters in Agricultural Innovation Support Programme 2010-2015

Monica Gorman and Jim Kinsella (UCD) and Tom Kelly (Teagasc)

- Joint Initiative between UCD and Teagasc
- Research topics proposed by front line advisory staff
- Students want to work as agricultural advisors and educators

AIM: To equip graduates with the skills and knowledge to be effective in building the capacity of farmers to adopt new practices and technologies

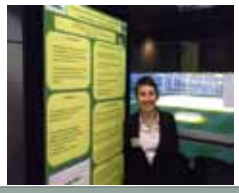
- *equip graduates for future roles in advisory services, technical consultancy & education delivery*
- *advance understanding of best extension approaches for modern and effective innovation support systems*

58 students to date (2010=4; 2011=10; 2012=12; 2013=10; 2014=11; 2015=11)

21 months with 3 phases:

1. First semester in UCD (Research Mtds/ Extension/ Innovation/ Statistics Modules)
2. Fifteen months placement in Teagasc Advisory Office or Agricultural College
3. Three months writing up of thesis

Phase	Schedule	Structure	Credits
1	Sept. 2014 to Dec. 2014	•Completion of modules at UCD •Participate in Roundtable Sessions (2) •*Based at UCD*	22.5
2	January 2015 to March 2016	•Field work on Research Project (50% time) •Support to Teagasc Advisory OR Education Service (50% time) •Participate in Roundtable Sessions (4) •*Based at assigned Teagasc Office*	90
3	March –June 2016	•Thesis write-up and submission •*Based at UCD*	



- Student learning from Benchmark farms
- Learning by students during practical periods
- Potential for on-line teaching in agric education
- Development of on-line modules in hort
- Social Media as an Aid to Advisory and Education Services in Teagasc
- Engaging with recent Agricultural College graduates to retain contact with them from graduation to farm ownership

Sample Research Topics

Capacity Building

Increasing Competitiveness

Environment

- Cross compliance farmer guidelines
- Evaluating advisory practices on nutrient management
- Advisory and training programme for better hill land management and environment/habitat maintenance
- Educational methods on agri-environment
- KT to support farmers reducing greenhouse gas emissions

- Effectiveness of Dairy Efficiency Programme
- Low cost grass based systems - attitudes of advisors & farmers
- Herd health planning and biosecurity
- Improving record keeping on pig farms
- Uptake of financial management tools on tillage farms and by new entrants to dairying
- Decision making by farmers in relation to Succession and Inheritance. Supports for the promotion and support of share farming.
- Inter-farm contract heifer rearing in Munster
- Success factors of farm partnerships with an emphasis on new entrants
- Use of local radio as Knowledge Transfer support

This MAIS Programme is funded by Teagasc

BETTER Farm Sheep Programme Focus Group-Assessment Knowledge and Practice Change

Martin Mulkerrins[1], Dr. Bridget Lynch[2], Michael Gottstein[3]

[1] Teagasc/UCD MAgrSc Innovation Support Programme (2015-2017)
[2] School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4
[3] Head of Sheep Programme, Knowledge Transfer Department, Teagasc, Codrum, Macroom, Co. Cork.

Project Aim

This study aims to assess the impact of the BETTER farm sheep programme as a knowledge transfer mechanism for practice change among the BETTER farmers and the farmers in their associated discussion groups.

Background

- The BETTER (Business, Environment and Technology through Training, Extension and Research) farm sheep programme was established by Teagasc in 2008 .
- These farms are similar to monitor farms/focus farms used in Scotland, Wales, New Zealand.
- The participating BETTER farms implement usable knowledge and technologies from research and act as a focal point for discussion groups/ open days/ farm walks which allows information to be transferred to other farmers through evidence-based learning.

Objectives

(1) To identify the impact of practice change in terms of sustainability, productivity and profitability on the BETTER Sheep Farms.

(2) To quantify the ease of adoption for various technologies on the BETTER farms and to identify, if any, the supports required to enhance the adoption of these technologies.

(3) To identify if the BETTER farm sheep programme has an impact on sheep farmers in discussion groups in terms of practice change.

(4) To assess advisors perspective regarding the BETTER farmer's influences on practice change and the supports the farmers require.

Methodologies:

1.Literature review and analysis of historical data

2. Semi Structured Interviews with the Lowland BETTER sheep farmers (n=8)

3. Survey of discussion groups associated with the BETTER farms (n=120)

4. Focus group with the advisors associated with the BETTER farm programme (n=8)

Locations of the BETTER Sheep Farms

Masters in Agricultural Innovation Support - This research has been funded under the Teagasc Walsh Fellowship Scheme

Assessing farmers perceptions of greenhouse gas emissions and developing effective knowledge transfer interventions to support practice change and emissions reductions

Méabh O'Hagan[1,2] James Breen[1] Pat Murphy[2]
1.School of Agriculture and Food Science UCD, Belfield, Dublin 4.
2. Teagasc, Johnstown Castle, Co. Wexford.

Background

Concern regarding global warming and climate change has led to an increase in focus on greenhouse gas(GHG) emissions in recent years. Agriculture accounts for nearly 30% of Irelands GHG emissions. Food Harvest 2020 has set out a number of targets focusing on smart, green and sustainable growth in the production of food in Ireland which, if met, would lead to a further increase in emissions. However, EU leaders have set out ambitious targets for all EU member states to reduce GHG emissions by 40% versus 1990 levels by 2030. In order for Ireland to reach Food Harvest 2020 targets and the EUs emissions targets, there must be a significant uptake of GHG mitigating technologies in agriculture.

Objectives

1. To assess the current level of knowledge among Irish beef and dairy farmers with regards to agricultural GHG emissions.

2. To identify which GHG mitigating technologies are most likely, and least likely to be adopted by Irish beef and dairy farmers.

3. To identify the most effective method of roll-out for the Carbon Navigator tool, and provide Teagasc with recommendations on how to proceed with the roll-out.

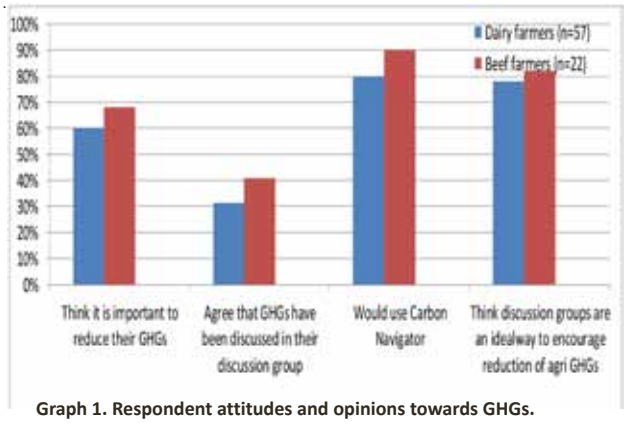
Methodology

- Structured questionnaires were carried out with beef and dairy discussion group members to assess knowledge about GHG emissions.
- A list of 11 mitigating technologies was provided and farmers were asked to rate these in order of preference.
- Potential methods for roll-out of the Carbon Navigator tool will be evaluated through the use of focus groups.

Carbon Navigator

- A tool developed by Teagasc and Bord Bia to reduce greenhouse gas emissions from livestock production systems.
- Online decision support system which evaluates the adoption of GHG mitigating technologies on a farm.
- Rates farmer adoption of technologies against other farmers in the area.
- Allows farmers to set targets and displays the resulting reduction in GHG emissions and the financial benefit to the farmer.

Key Findings To Date



Graph 1. Respondent attitudes and opinions towards GHGs.

Most popular mitigation technologies

Dairy: - Extending of grazing season length

Beef: - Improve live-weight gain
- Slurry application in spring and in suitable weather conditions

Least popular mitigation technologies

Dairy: - Dietary additives to reduce methane emissions
- Planting of forestry/coppicing of trees, planting of hedgerows

Beef: - Use of urea treated to reduce emissions and losses to air.
- Planting of forestry/coppicing of trees, planting of hedgerows

Next Steps

1. Identify discussion groups to test methods of Carbon Navigator roll-out and assign methods to each.

2. Identify farmers from these groups to participate in focus groups.

3. Hold focus groups to assess the effectiveness of each roll-out method.

4. Analyse the data gathered from these focus groups to identify most effective roll-out method.

Key Conclusions to Date

Conclusions

- GHG emissions isn't being included as a topic in many discussion groups.
- Both dairy and beef farmers would be willing to use a tool like the Carbon Navigator.
- More information may need to be made available on some of the less popular or less known mitigation technologies.

Recommendations

- Include agricultural GHG emissions as a topic in all beef and dairy discussion groups.
- Promote adoption of most popular mitigation technologies immediately.
- Provide more information and support for least popular and lesser known mitigation technologies.

This project is funded by Teagasc through its Walsh Fellowship Scheme

Understanding Key Characteristics of Hard to Reach Farmers in Relation to Knowledge Transfer (KT) for Soil Fertility Management Practices: The Case of Dairy Farmers in Co. Kerry

Oisín Coakley [1], Doris Laepple [2], Tom O Dwyer [3]
[1] *Teagasc/UCD MAgrSc Innovation Support Student (2014-16)*
[2] *School of Agriculture and Food Science, UCD, Belfield, Dublin 4*
[3] *Animal & Grassland Research and Innovation Centre Teagasc Moorepark*

Research Aim : Categorisation of hard-to-reach (HTR) dairy farmers (HTRDF) in the Kerry region

Categorisation of farmers in groups has proven successful in previous research (Garforth and Rehman, 2006. Jansen et al 2010. Vanclay, 2004. Wales Rural Observatory, 2011)

Background

- The agri-food sector is central to the economic and social vitality of rural communities, (Teagasc Foresight, 2009)
- FH2020 targets - future milk output depends on the rate of structural change & productivity growth. Relative to other regions, the south (of Ireland) has the greatest expansion capacity (Laepple and Hennessy, 2012).
- As the costs of production continue to increase it is essential to identify factors influencing farmers & advisors attitudes to new technologies (Egan *et al*., 2014)
- Doherty *et al*. (2013) - 14% of farms (n= 365) have never conducted soil analysis
- "*We (Irish farmers) are only applying between 30-50 % of our annual lime requirement, which is needed to maintain an adequate soil pH level throughout Ireland"* (Plunkett, 2013).

2. Methods

- Informed definition & criteria of a HTRDF
- Two stage sampling –
  - Adviser & Industry Survey (n=8)
  - In-depth Qualitative Interview (n=15)
- Explore findings – identifying main themes & sensitizing concepts
- Further categorise - into segments based on how HTRDF's (a) receive & (b) implement (trust) information on soil fertility

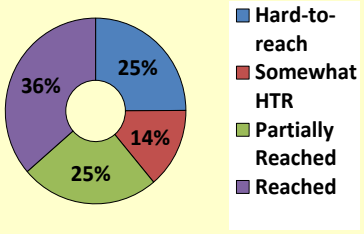
< Literature Review >

3. Research Objectives

1. Definition of a HTRDF - framework for the purpose of the current study
2. Segment HTRDF's into categories based on their views of engagement with services & current knowledge
3. Identify where the HTR dairy farmer acquires the information that they possess relating to soil fertility management practices (SFMP)

4. Key Findings to date

Classification of clients (n=815) by adviser on a Scale of HTR (1) – (4) reached regarding Soil Fertility info

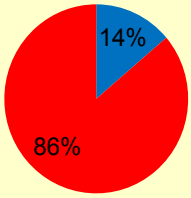


25% of farmers were identified by advisers as fitting into the target group (HTR) for current study

In-depth Interviews

- HTRDF's: broadly well versed in the 'how' to improve soil fertility & SFMP (correlating with Jansen *et al*. (2010) findings on HTR farmers in the Nederland's on mastitis control
- Some feel it may not be financially viable to invest a lot of money in their particular soils – new research released from the **Teagasc Heavy Soils programme** is influencing opinions (results perceived as locally applicable to soil type)

Age Classification of HTR farmer clients (n=203) identified by Advisers



86% of the HTRDF's identified are over 40, this is similar to the % of farm holders estimated as >40 in the 2010 Census of Agriculture (CSO, 2012)

- Good soil fertility seen by HTRDF's as very important to their farm business, however most are conservatively applied
- Barriers: Poor soil (low agronomic potential) & weather conditions, ownership/lease issues, lack of finance or stress
- Incentive by initiative to conduct soil analysis jointly by **Teagasc/Kerry-Agribusiness** viewed positively
- Those with experience of discussion groups had a preference to attend **public events** or settings which involve less exposure of their individual circumstances to their peers e.g. **workshops**
- Almost all (n=14) of the farmers were <u>not</u> aware of how many tonnes per hectare a year of grass their farm grew. Therefore less explicit to these HTR farmers of under performing paddocks in comparison to farmers whom have adopted grass measuring/budgeting

This project is funded through Teagasc Walsh Fellowship Programme: MAgrSc Agricultural Innovation Support 2014-2016

The Use of Local Radio in Knowledge Transfer

Owen Keogh[1,2] Monica Gorman [1] Pat Clarke[2]
1.School of Agriculture and Food Science UCD, Belfield, Dublin 4.
2.Teagasc, Athenry

Radio, as a mass media communicator, is one of the most effective in Ireland. Teagasc in Mayo has a well established relationship with Mid-West Radio on which it broadcasts a daily 5 minute programme (Farming Scene) and a weekly 10 minute programme (Farming Matters) each Wednesday evening. Recognising the need for research and advisory services to stimulate farm innovation and technology adoption, can the potential of radio be further exploited?

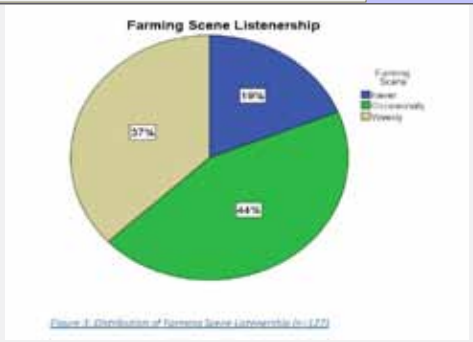
Objectives

- To identify characteristics for effective agricultural radio
- To profile & analyse the listenership and attitudes of farmers in Mayo for Teagasc radio programmes broadcast by Midwest Radio.
- To investigate and map the potential for increased agricultural radio in other regions.
- To assess the interest & potential for increased use of podcasts as a means of KT support.

Methodology

A mixed methodology approach was used with triangulation to validate the results. This included:

- Literature Review
- Face to face listenership survey of farmers in Mayo
- Discussion Group meetings
- Internal Focus Groups with Teagasc radio staff
- Mapping agricultural radio countrywide
- Elite Interviews with key informants in the research area
- Podcasting the Teagasc newsletter and monitoring downloads



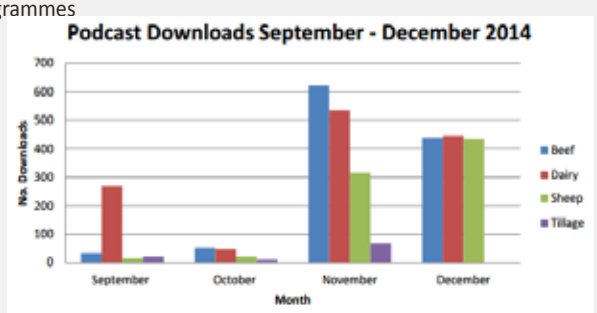
Key Findings

Farmer Survey Findings (N=127)

- 81% of farmers surveyed listen to the 'Farming Scene'
- 72% of the respondents listen to 'Farming Matters' with 23% listening every week.
- Details and deadlines for Events/schemes were the most popular subject with rural development next
- < 12% of farmers under 30 listened to the Farming Scene weekly while 43% of farmers over 50 listened weekly
- Almost 70% of respondents said they would like to see a stronger focus on the experience of local farmers in the programmes

Podcast of the Teagasc Newsletter

- September 14 – May 15 total podcast hits = 6,322
- Dairy podcasts were the most popular podcasts with 1,300 hits over the test period (September – December)
- Podcast listenership increased hugely when coupled with social media promotion
- 75% of farmers surveyed would welcome podcasts on the Teagasc website



Other Research Findings

- Farmer discussion group members said that radio would not have a direct influence on decisions but would trigger certain actions e.g. selling livestock, event attendance or farm scheme deadlines.
- There is scope to develop agri-radio further – building on current agri programmes across local radio stations and with enthusiasm from Teagasc regional managers and staff.
- A checklist of criteria for effective agricultural broadcasting was developed by Teagasc radio staff. Being well prepared and structured and knowing the audience were two of the key criteria.

Conclusions:

- There is a high awareness and a wide listenership to the farming programmes in Co Mayo, that extends beyond Teagasc clients.
- Farmers use the information from radio programmes in a specific way – usually as a prompt for further research or a reminder for action.
- Farmers appreciate information and news that are specific to their own local area and relate experiences of farmers in similar situations to theirs.
- Radio could be further utilized in the specific area of promoting knowledge transfer events
- The Teagasc Podcast experiment showed farming based podcasts as popular downloads particularly when promoted through social media.

This project is funded by Teagasc through its Walsh Fellowship Scheme

Using the innovation-decision process to understand reasons for the low uptake of grassland measurement technology on Irish dairy farms

Paul Newman[1], M. Moore[1] & D. O'Connor[2]
[1]Teagasc Headquarters Oak Park, Co. Carlow
[2]UCD, Belfield, Dublin 4

Background

Grazed grass is the cheapest feed source for milk production in Ireland (Teagasc, 2011). Ireland's competitive advantage is that its pastures are able to grow up to 16 t of grass DM/ha (O'Donovan et al. 2010). An increase in grass utilisation by 1 t/ha can increase net profit by €161/ha (Teagasc, 2015). Growth rates are seasonal with considerable variation observed between regions (Ramsbottom et al. 2015). Computer programmes are available to farmers as a grassland management support tool. However only a minority of farmers use such technologies.

Aim

The aim of the research is to identify a dairy farmer's stage within the innovation-decision process and to assess his/her reasons for adoption or non-adoption of grassland measurement technology.

Objectives

- Identify the personal and farm characteristics associated with adoption and non-adoption of grassland measurement technology.
- Identify dairy farmers stage within the innovation-decision process.
- Identify barriers preventing dairy farmers adopting grassland measurement technology.
- Identify effective extension methodologies used to increase adoption of grassland measurement technology.

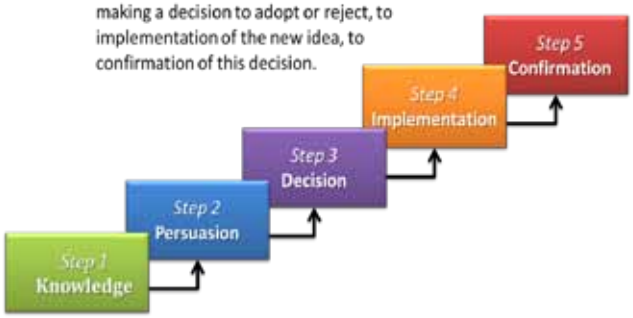
Methodology

Sources of Data
Population: 121 (specialist dairy farms)
Sample size: 99 (specialist dairy farms)
Location: County Carlow
Methods: Mixed methods (quantitative and qualitative)

Methods of Data Collection
- The use of a telephone survey to collect data for the study
- Case studies

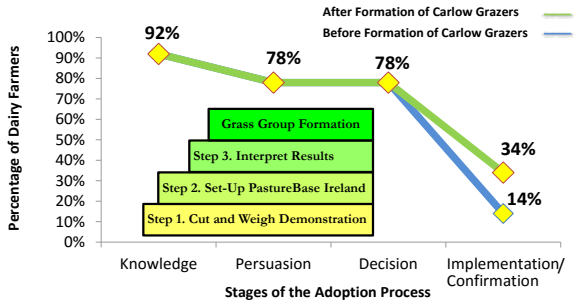
Innovation-Decision Process

The process by which an individual passes from gaining initial knowledge of an innovation, to forming an attitude towards the innovation, to making a decision to adopt or reject, to implementation of the new idea, to confirmation of this decision.



Finding to Date

Adoption of Grassland Measurement Technology

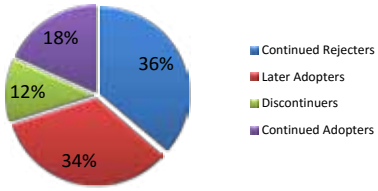


- **92%** of dairy farmers indicated they had knowledge of grassland measurement technology. However, just 14% measured grass on their farms.
- The formation of a grass budgeting group **increased** adoption of grassland measurement technology from 14% to 34%.
- **56%** of respondents thought grassland measurement technology was difficult to understand and use.
- **Three key steps** were identified in supporting a grassland discussion group.

At the **Decision Stage** a person rejects or adopts grassland measurement technology. Respondents had two options regarding both the adoption and rejection of the technology.

	Decision Stage	
	Adoption	**Rejection**
Option 1	Continued adoption	Later adoption
Option 2	Discontinuance	Continued rejection

Decision Stage (N=77)



Conclusions

- The formation of grass budgeting groups is one method to increase the adoption rate of grassland measurement technology on Irish dairy farms while also improving farmer skills and offering continued support.
- A grass budgeting group educates farmers in groups of how to measure grass, use the software program and interpret the data to make grassland management decisions on their farm.

This project is funded by Teagasc through its Walsh Fellowship Scheme

Grassland production and profitability variables of Irish BETTER beef farms and the factors that influence these variables.

P. Varley[1], P. Foley[1], P. Crosson[3], A. Woods[3], M. O'Donovan[4] and B. Lynch[2]

[1]Irish Farmers Journal, Irish Farm Centre, Bluebell, Dublin 12; [2]UCD School of Agriculture and Food Science, Belfield, Dublin 4; [3]Animal and Grassland Research and Innovation Centre, Teagasc, Dunsany, Co Meath; [4]Animal and Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Co Cork.

Introduction

- Grazed grass is the cheapest and most widely used feed source in Ireland for livestock.
- Irish farms have the potential to grow between 12t and 16t DM/ha of grass over a growing season of 250 to 330 days which is a clear competitive advantage.
- On average, grazed grass constitutes 51% of the total feed budget on Irish suckler beef farms.
- Total herbage utilised is less than 5t DM/ha on average.
- An increase in utilisation of grazed grass will lead to improved farm profitability for beef enterprises.

Objective

The objective of this study is to quantify the grassland production and profitability of Irish BETTER beef farms and in turn evaluate the factors that influence grass production and profitability variables.

Methodology

- Thirteen farms were selected from the Irish Farmers Journal/Teagasc BETTER farm programme who completed > 25 farm grass covers on PastureBase Ireland throughout 2014.
- Climatological data was generated from Met Eireann climatological stations nationwide.
- Soil samples were taken at each of the farms in 2013.
- Linear regression analysis was carried out through the statistical software package R.

Results

Grassland performance

	Mean (kg DM/ha)	Max (kg DM/ha)	Min (kg DM/ha)	Standard Deviation ±
Total DM production	11,034	16,696	6,273	3,377
Grazing DM production	10,038	15,614	6,273	3,262
Spring DM production	900	1,732	158	446
Opening cover	515	1,023	92	279
Closing cover	709	1,077	130	256

	Mean	Max	Min	Standard Deviation ±
Number of covers completed	29	34	25	2.9
Annual number of grazings	4.4	6.4	1	1.6
Mean SR (LU/ha) for grazing area	2.66	3.4	2.04	0.41

Climatological data

	Mean	Max	Min	Standard Deviation ±
Total annual rainfall (mm)	1183.9	1264.3	1023.4	66.3
Mean air temperature (°C)	10.5	11.2	9.7	0.4
Mean 10cm soil temperature (°C)	11.6	12.0	11.2	0.2

Soil fertility

	Mean	Max	Min	Standard Deviation ±
Soil pH	6.27	6.59	5.84	0.22
P index	2.63	4.00	1.45	0.81
K index	2.8	3.67	1.89	0.57

Linear regression analysis

- Spring DM production was found to have a significant relationship with total DM production on the BETTER farms (R^2 = 0.61, P = 0.001).
- The total annual rainfall, the mean temperature and mean soil temperature did not have a significant effect on total DM production.
- There was a positive but weak correlation between soil pH and total grass growth (R^2 = 0.27, P = 0.065).

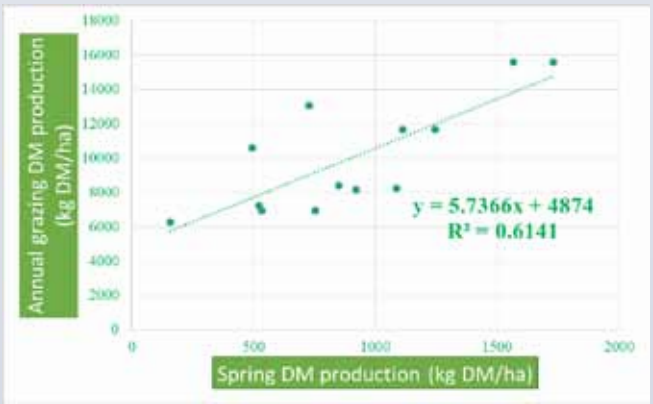


Figure 1: The relationship between spring DM production (up to April 10th) and annual grazing DM production in 2014.

Conclusions

- The total grass DM production varied substantially in the BETTER beef farms of this study.
- A farms spring DM production (Figure 1), total number of grazings achieved in the year and opening grass covers at the beginning of the year had a significant effect on the total DM production and grazing DM production.
- The number of grazings achieved in 2014 were low given the high grass DM production and this is an area the farms can improve on in the future.

This project was funded by: Irish Research Council

STUDENT
Claire Bambrick,
Ballyhaise Agricultural College,
Ballyhaise, Co. Cavan

Supervisor: Dr Aoife Osborne, School of Agriculture and Food Science UCD, Belfield, Dublin 4

Supervisor: Dr Joe Patton, Teagasc Grange, Dunsany, Co. Meath

STUDY TITLE

Evaluate the communication methods used to disseminate the findings of a dairy research farm for extension purposes.

1) AIM

To evaluate the dissemination of the findings of a dairy research farm for extension purposes

2) OBJECTIVES

- Explore and evaluate current communication methods used to disseminate findings of a dairy research farm and identify how these communication methods can be improved.
- Investigate if farmers are engaging with research findings and establish how this relationship can be improved.
- Establish if the students on a research farm are at an advantage compared to those who are not.

3) BACKGROUND

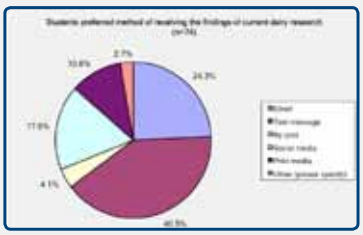
Irelands well developed agricultural research structure is well placed to supply the results required to underpin enhancement of the sector in order to meet the growth targets set out by the Food Harvest 2020 report (Department of Agriculture, Food and the Marine, 2011). However, there is a feeling that good research can be often lowered by poor communication of the findings to clients (Sulaiman V et al., 2012). This transferring of research findings to suitable end users is important and should not be underestimated (Department of Agriculture, Food and the Marine, 2011).

4) METHODOLOGY

- Survey with Advanced Certificate in Dairy Herd Management Students
- Survey with farmers participating and not participating in joint Teagasc/Lakelands project
- Semi-structured interviews with farmers following on from survey

5) KEY FINDINGS TO DATE

- Students most preferred method of receiving research findings was via text message with 40.5% choosing this method (n=74)
- When asked about the current research topic in their college, no student from Ballyhaise knew the exact research topic, however five mentioned either "crossbreeding" or "breeding" in their answer (n=24)



NEXT STEPS

- Further analysis of student survey
- Evaluating current communication methods
- Farmer survey
- Farmer interviews

This research has been funded through the Teagasc Walsh Fellowship Scheme.

Ballyhaise Dairy Twitter account

Teagasc NMP Online

An integrated tool for Nutrient Management Planning

Pat Murphy, Tim Hyde, Louis Kilcoyne & Avril Rothwell
Crops, Environment & Land Use Programme (CELUP)

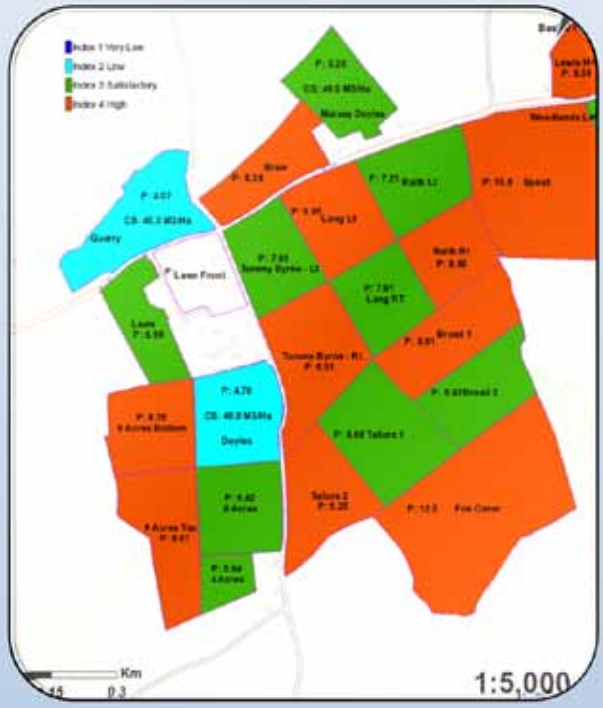
Nutrient management planning has become a key skill for farmers, one which is essential in the achievement of a balance between achieving high levels of output and protection of the environment. Environmental regulation and the increase in price of fertiliser have become important factors for change in Nutrient Management Planning (NMP). An effective nutrient management planning tool is needed which meets both regulatory requirements of the Water Framework and the Nitrates Directive and facilitates farmers in implementing those plans at farm and field levels. NMP Online has been developed to meet this need.

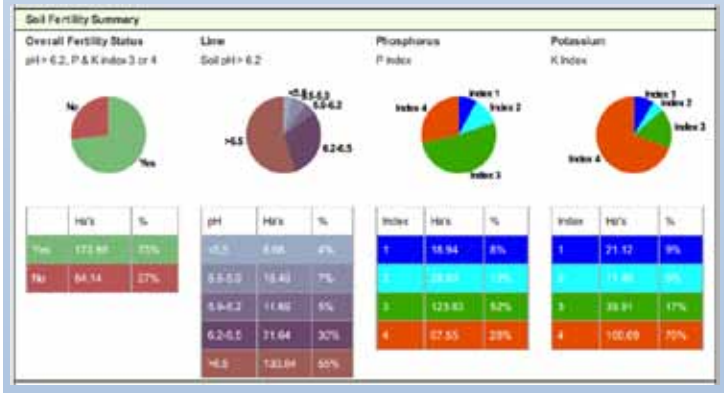
The Water Framework and Nitrates Directives set strict limits on the amounts and timings of nutrient applications. This shifted the focus from a field by field approach to nutrient management recommendations proofed against an overall farm nutrient balance. This created the need for complex computational systems and outputs.

This resulted in:-

- Soil nutrient levels falling below optimum
- A significant proportion of farmers were not utilising their fertiliser allocation
- Plans were not fit for purpose. They did not communicate key messages to farmers.

Teagasc NMP Online was developed to overcome these shortcomings.

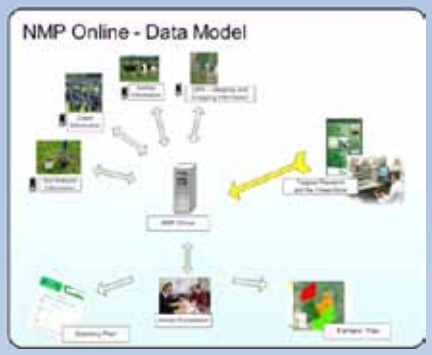




Teagasc engaged with farmers in a requirement study using existing tools and learning from the Agricultural Catchments Programme. Farmers requested map based outputs to improve their understanding and ability to implement NMP plans. Based on this feedback Teagasc undertook the development of NMP Online.

The key development criteria included:-

- Ease of use
- Nutrient advice from the Teagasc Green Book
- Import from available databases, land, animals, soil analysis
- Flexible plans - Agri-environmental schemes and agronomic
- A fertiliser record system
- Farm facilities computation and mapping
- Map based and graphical outputs for farmers



NMP Online has been launched for use by Teagasc advisers and will be used exclusively for the preparation of >40,000 NMP plans for 2017. The map based outputs will enable farmers to interpret their nutrient management plan and utilise the fertiliser more efficiently.

MINISTRY OF AGRICULTURE AND FOOD

National Agricultural Advisory Service (NAAS)

IDENTIFICATION OF FARMERS NEEDS: NAAS EXAMPLE

NON OFFICIAL FARMERS' CONSULTATIVE COUNCILS TO EVERY NAAS OFFICE are set up as non-official group for discussing between NAAS advisors, farmers, industry organizations and local government structures representatives on the NAAS territorial district office activities. The purpose of discussion is greater degree the office to meet the needs of farmers and even better service farmers.

Members

- Active farmers from the district;
- Farmers who use NAAS advisory services of many years;
- Regional farmers' associations representatives;
- Regional research institutes and organizations representatives.

Tasks

- Discussion of farmers' advisory service needs;
- Discussion of farmers' problems;
- Discussion of common activities.

FARMERS CIRCLES TO EVERY NAAS OFFICE are set up as non-official forum for spreading useful information among farmers and for promotion the best practices in application and implementation of projects under the Rural Development Program (RDP) as well as increasing the efficiency of advisory services provided by NAAS for a larger number of farmers.

Members

- Active farmers from the district;
- Farmers engaged in livestock sector;
- Farmers engaged in plant production;
- Farmers engaged in livestock sector and plant production.

Tasks

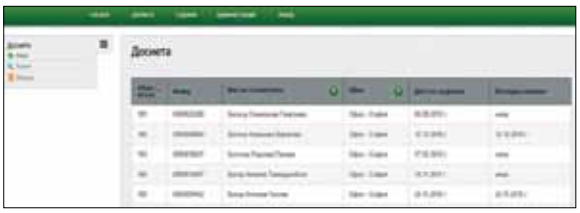
- Dissemination of information;
- Discussion of problems;
- Collect and asking different questions;
- Proposal for organizing various events.

MINISTRY OF AGRICULTURE AND FOOD

National Agricultural Advisory Service (NAAS)

Advisory ICT based tool: NAAS INFORMATION SYSTEM Web-based system with data about every farmer who was received advice by NAAS?

National Agricultural Advisory Service develops the information system (IS) for management of advisory service in the structure of NAAS, which is a Web-based platform with three modules, connecting all offices of NAAS and Headquarter into a single environment under strictly defined rules for access, data sharing and security.



Module "Consultations" provides information for:

- Number of farmers and consultations;
- Types of consultations; Consultations related to climate change, keeping land in good agricultural and environmental condition, Water Framework Directive;
- Farm visits; Size of farms;
- Prepared business plans and provided advisory service under Rural Development Program (RDP);

Module "Trainings":

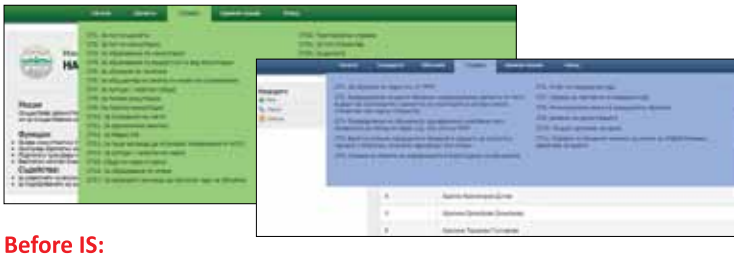
- Conducted trainings;
- Number of trained farmers;
- Detailed report for conducted training incl. the content of the training and a list of students trained;

Module "Administrative"

- Participation in media events;
- Participation in information events and seminars;
- Prepared information materials.

Data includes:

- Farmer name; Address; Education; Farm specialization;
- Farm location (less-favoured area, NATURA 2000, Nitrate vulnerable zones, etc);
- Cultivated land; Type of cultivated crops; Breeding animals;
- Data about application under different supporting schemes;
- Equipment and building;
- Received consultations including their type;
- Trainings and education of farmers;
- Visits on the farm;
- Different types of reports in different time when you needed.



Before IS:

- no correct information for type of consultations;
- manually gathering information;
- difficulty to analyze the information;
- difficulty to monitor and to control the advisory service process.

After IS:

- detailed information for consultations;
- all information in one place;
- easy and timely data processing;
- ability to analyze different periods;
- evaluation, monitoring, control of the advisory service process.

Benefits for our advisors:

- all information about their farmers in one place;
- get information any time for any period when you need;
- do not report monthly, weekly and daily what have you done;
- monitoring and evaluation of the advisory process;

The role and value of Teagasc-Industry Joint Programmes for KT – lessons from the Tipperary Co-Op Joint Programme

Redmond McEvoy[1,2] ,Anne Markey[1], Donal Mullane[2]
[1]UCD, Belfield, Dublin 4
[2]Teagasc Advisory Office, Clonmel, Co.Tipperary

Joint Programmes have been in operation since the early 1990's and were first introduced due to increased scheme work pressure on advisors from changes in the EU common agricultural policy (Kelly et al. 2004).

How Joint Programmes work

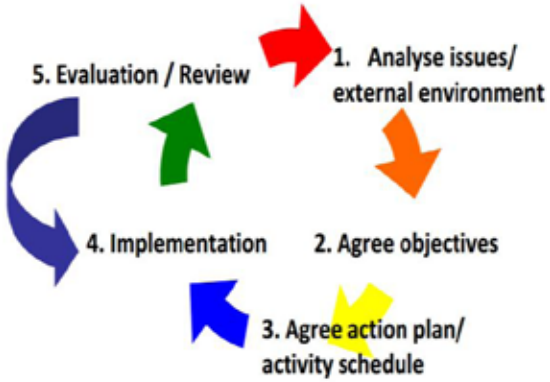


Fig 1. How Joint Programmes work(Tom O'Dwyer 2011)

Teagasc/Tipperary Co-Op Joint Programme

Currently in its 5th programme

Current programme focusing on five key areas based on research on local farms by Teagasc:

1. Heifer numbers and target weights
2. Soils & soil fertility
3. Calving rates & fertility
4. Land use change
5. Animal health

Variety of advisory methods used including:

- Discussion Groups
- Monitor farms
- Workshops
- Farm Walks
- Clinics
- Individual farm plans
- Heifer weighing's
- Soil analysis
- Local research farm

Objectives of Study

- Document the development of Teagasc-Industry programmes
- Identify Teagasc's, the industry's and farmers' attitudes to joint programmes
- Identify the impact of farmer participation in joint programmes on the adoption of new farming practices and on efficiency and productivity
- Complete a SWOT analysis of joint Teagasc-Industry programmes

Methodology

Design – Quasi-experimental

Baseline – Secondary data and previous study

3 group stakeholders	Method	Sample
Farmers	Questionnaire (adoption)	100, Strat X Size
Co-Op Staff	Interview	All members involved
Teagasc	Interview	Advisors involved

This project is funded by Teagasc through the Walsh Fellowship Scheme

Key ingredients for effective farmer learning through knowledge transfer events

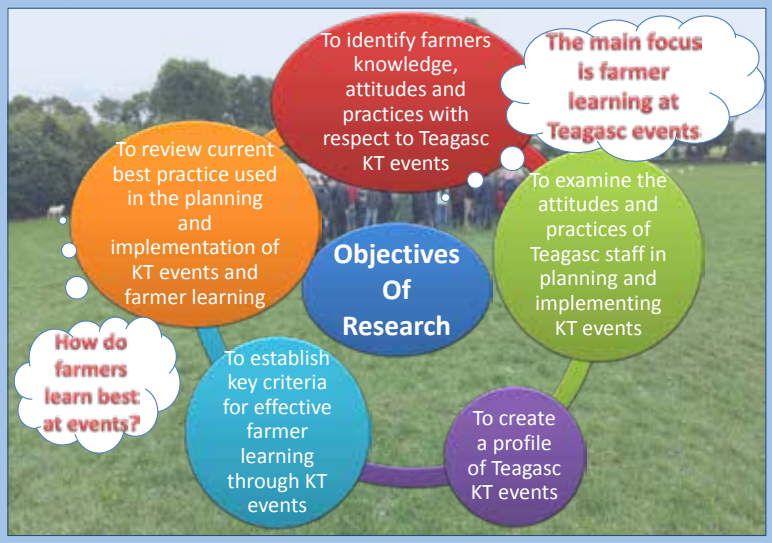
Sean Mannion[1], Anne Markey[2], Mark Gibson[3]
1 Teagasc/UCD MAgrSc Innovation Support Student (2014-2016)
2 School of Agriculture and Food Science, Agriculture and Food Science Centre University College Dublin Belfield, Dublin 4
3 Knowledge Management & Communications Specialist Teagasc, Mellows Campus, Athenry, Co. Galway

Project Aim

- To determine the key ingredients for effective farmer learning through knowledge transfer events organised by Teagasc

Background

- In 2014 Teagasc carried out 991 Knowledge Transfer (KT) events, categorised as open days/Farm Walks/ Demonstrations (42%) and Meetings/Seminars (58%)
- The challenge and future direction of Teagasc is to improve and innovate knowledge transfer systems
- There is a lot of research conducted by Teagasc with some 500 research staff, however technical research must be complemented by research into effective knowledge transfer systems



Exit-poll surveys & follow up interviews

- **Major Sheep Event (National)** (N=181) Att.= 12,000
- **Major Dairy Event (National)** (N=228) Att.= 15,000
- **Regional Sheep Events** (N=71) Att.= 750
- **Regional Beef Events** (N=49) Att.= 400
- **Regional Dairy Events** (TBC)

Study Location

Methodology

Mixed method approach

Expected Outputs:

- Assist Teagasc building best practice for KT events within Sheep, Dairy and Beef enterprises
- Provide insights for event organisers and presenters on how farmers learn best at KT events
- Identify barriers for effective learning

Key findings from event attendees:

(529 surveys & 10 Interviews)

Profile of attendees

- From 30 Counties
- 85% are the main decision makers on their farm
- 66% are/have been in a discussion group
- 79 Ha is the average farm size
- 71% are full time farming
- 87% of attendees were <65 years of age
- There was 9% more young farmers (<35 yrs.) at major events
- Attendees at the regional events had smaller farm holdings

Key Findings

- 97.7% stated that the event **met** or **exceeded** their expectations
- Farmers who are **not part** of a discussion group learn more at events
- 67% stated that there were **no improvements** that they would recommend to the way information was presented
- Visually seeing a **practice in action** and being able to **ask questions** was regarded as being very important, and the preference for many farmers
- According to respondents **peer to peer communication** is very important for learning
- Greater attendance at discussion group approved events

Masters in Agricultural Innovation Support - This research has been funded under the Teagasc Walsh Fellowship Scheme

Analysis Of Ag Teachers/Education Officers Experience Of Their Role As Educators And Identification Of Improvements To Better Prepare Them For Their Role

Sinéad Flannery[1] Dr. Karen Keaveney[2] Frank Murphy[3]

[1]*Teagasc Kildalton College, Piltown, Co. Kilkenny*

[2]*School of Agriculture & Food Science UCD, Belfield, Dublin 4*

[3]*Teagasc Curriculum Development & Standards Unit, Kildalton College, Piltown, Co. Kilkenny*

Rationale

- Teagasc is the main provider of further education in agriculture, food, horticulture and equine studies.
- Agricultural education assists farmers in accessing and utilising information more efficiently, adopting new technologies, enhancing problem solving and helping them make more efficient use of their farm resources.
- As agri-food exports are to increase by 85% to €19 billion by 2025, Teagasc has a key role to play in terms of developing the necessary skillsets and knowledge base of future graduates entering the agricultural industry.
- The way in which a teacher defines their role as an educator may have an impact on their manner within the classroom.

Aim

To analyse Agricultural Teachers' experience in their role as educators and identify possible improvements to better prepare them for their role

Objectives

1. To understand the knowledge and attitudes of agricultural educators towards teaching and learning.
2. To critically assess current In-Service Training received by agricultural educators.
3. To identify current teaching methodologies used by agricultural educators.
4. To identify best practice guidelines in teaching and learning.

Methodology

Immersion Period
Compilation of a reflective journal based on my own experiences

National Survey
Including all Agricultural Teachers within Irish Agricultural Colleges

Focus Group
Consisting of a cohort of Agricultural Teachers

Elite Interviews
Conducted with Agricultural Teachers who have completed pedagogy courses

Key Informant Interviews
Conducted with Education Specialists

Preliminary Findings to Date

- Overall, teachers are satisfied with the level of technical In-Service Training they receive.
- However, in general, teachers do not feel they have received sufficient training in teaching and learning skills and strategies.
- Teachers are unhappy with the current student:teacher ratio and believe it has effected their ability to use different teaching methodologies e.g. active learning strategies.

Next Steps

1. Complete survey administration
2. Analyse results from survey of Ag Teachers
3. Focus group and Elite Interviews (3-4) with Ag Teachers
4. Key Informant Interviews (2-3) with education specialists
5. Disseminate research findings

This research has been funded through the Teagasc Walsh Fellowship Scheme

The Development of a Producer Group model within the Bioenergy Sector

Stephen Robb[1], Barry Caslin[2], Dr. Deirdre O'Connor[3]

[1] Teagasc, Oak Park, Carlow, Ireland
[2] Teagasc, Oak Park, Carlow, Ireland
[3] University College Dublin, Belfield Dublin 4, Ireland
Stephen.robb@teagasc.ie

Background

In 2009, the Renewable Energy Directive (2009/28/EC) was published which set out mandatory renewable energy targets for each EU member state. Ireland's target is for 16% of its gross final energy consumption to be generated from renewable energy sources by 2020. This target of 16% was divided into three subcategories: 40% renewables for the electricity sector, 10% renewables for the transport sector and 12% renewables for the heat sector. This project will focus on the renewable energy target for heat and cooling of 12%. The study will explore the development of a producer group model within the bioenergy heat supply chain as a means of contributing to the 2020 renewable heat targets. Three bioenergy feedstocks have been selected: Short Rotation Coppice (SRC) Willow, Miscanthus and Cereal Straw.

Objectives

1) Determine existing markets for SRC willow, miscanthus and cereal straw
2) Determine producer's interest in developing a producer group model and end-users' willingness to cooperate with these models
3) Identify the optimal internal organisational structure of a producer group
4) Determine the initial actions which must be taken when forming a bioenergy producer group to service the heat sector
5) Identify the current role of extension providers in facilitating the formation of a bioenergy producer group in order to further develop their services

Table 1. Sampling Strategy

Method	N=Sample Size	Sampling Strategy
SRC Willow/Miscanthus Producer Survey	100	Purposive Sampling Strategy
Cereal Straw Producer Survey	150	Cluster Sampling Strategy
End Users Survey	20	Snowball Sampling Strategy
Elite Interviews	20	Purposive Sampling Strategy
Case Studies	3	Purposive Sampling Strategy

Methods

A mixed methodology approach will be used for this research project. The project is divided into two phases, a qualitative phase and a quantitative phase. Each phase is furthermore divided into two stages, each of which address a number of objectives, which are summarised in Table 2 below .

Table 2. Research Design and Methods

Phase	Stage	Objective	Method
Phase 1: Quantitative Data	Stage 1: Existing Markets	Determine Existing markets	Producer Survey
	Stage 2: Collaborative Interest	Determine Interest in Producer Collaboration	
		Criteria and Specifications	End User Survey
Phase 2: Qualitative Data	Stage 3: Group Structure and Establishment	Structure of bioenergy producer group	Case Studies
		Initial Actions in Group Formation	Elite Interviews
	Stage 4: Development and Sustainability	Extension Providers' Role	

Key Supply Chain Considerations for Bioenergy Producer Group

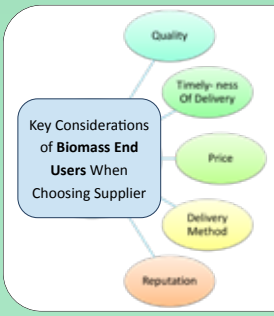
Producer Group Model

Producer groups are a collaborative arrangement involving small groups of primary producers generally located in one geographical area. Producer groups facilitate cooperation between members on a number of aspects which in turn provide a number of benefits:

- Increased revenue through the ability to achieve scale at a lower capital cost and risk sharing
- The possibility of sharing best farming and business management practice
- Help to address the social challenge of the 'one man farm' model and encourage new entrants

Next Steps

1. Finish development of surveys and begin piloting and undertaking of any necessary revision
2. Distribute survey to selected sample of producers, as well as biomass end users
3. Identify three bioenergy producer groups on which to conduct a case study
4. Use survey and case study data to develop and inform the design of semi structured elite interviews



Key Findings to Date

- Quality of locally sourced biomass must meet specifications of imported materials in order to entice end users to enter local supply contacts
- Groups must be established with like minded individuals i.e. those who want to be there and possess the ability to self lead
- Members must be within close proximity to the storage facility and/or end-user in order for a bioenergy producer group model to be viable: maximum 80km
- Ireland has a theoretical excess straw resource of between 350,000-420,000 tonnes which could be used for energy generation purposes

This project is funded by Teagasc through its Walsh Fellowship Scheme

Improving farmer engagement in herd health planning and biosecurity on beef farms through the BETTER farm programme

Teri Acheson Alan Renwick[1] Adam Woods[2]
1.School of Agriculture and Food Science UCD, Belfield, Dublin 4.
2.Teagasc Ballyhaise, Co. Cavan.

Background / Context: **Prevention and control of animal disease at farm level is of major importance in agriculture. Previous studies show deficiencies in herd health and biosecurity on Irish farms. This study offers the chance to increase farmers awareness to key methods that will help improve understanding and participation in this area. Working with the Teagasc/Irish farmers journal BETTER farm beef programme provides the best transfer tool for these improvements in the sector.**

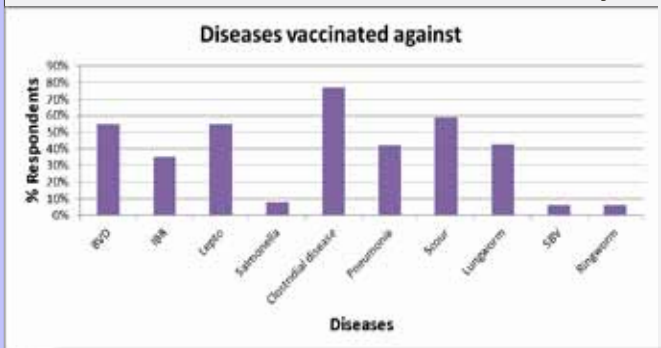
Objectives

- **Establish current uptake of bio-containment (BC) and herd health (HH) practices at farm level**
- **Explore the effectiveness of technology transfer through the BETTER farm programme**
- **Identify ways to improve uptake of main BC and HH practices**
- **Tailor make a method/model to improve knowledge transfer and thus provide recommendations to key stakeholders**

Methodology

		BETTER farm discussion groups (Study group)	Non BETTER farm discussion groups (Control group)
Sources of data		18 groups (N=180)	18 groups (N=180)
		10 people selected (1 BETTER farm + 9 others)	10 people selected
Methods of data collection	Survey	Bio-containment and Vaccination	
	Booklet created	Vaccination & Bio-containment practices booklet	-
	Survey	Based on views of protocol	Identify any changes since previous survey

Key Findings (N=167)

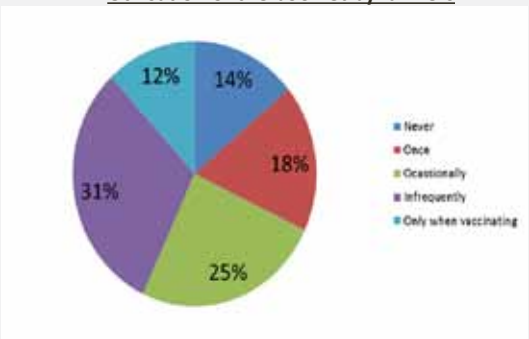


- 85% of respondents agreed that biosecurity and bio-containment are important in preventing disease outbreak at farm level.
- 63% respondents have no HH plan in place currently.
- "Unnecessary as no previous cases", is the main reason for not vaccinating: e.g. 42% respondents reported this for Lepto
- Skills such as booster vaccinations, correct timing and use of the correct equipment were identified as 'poor' by respondents
- Farmers with a HH plan had more BC practices in place.
- 'Good hygiene' and 'buying from herds with high HH status' were identified as the most useful BC practices.

Booklet (n=49):

- 86% consulted the booklet at some stage during the study.
- Fluke & Worm (51%), clostridial diseases (43%) and calf pneumonia (41%) were selected as the top three sections of the booklet to be used.
- A positive outcome to the booklet was achieved, as moderate (40%) to large (24%) increase in awareness of BC and vaccinations was documented by farmers who used the booklet.
- 32% felt it had increased their understanding of vaccines and simplified vaccination practice. .

Utilisation of the booklet by farmers



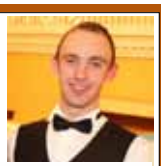
Key Conclusions

- Overall there is a positive approach to HH on beef farms in Ireland, however current practices in place did not match the optimal level that is needed to control and prevent disease spread.
- No significant difference in HH was found between the BETTER and non-BETTER farm groups, this indicated that although HH was a key component of the BETTER farm programme it had no impact on the level of uptake.
- A gap in the use of vaccination as a control method for disease spread was identified. This was principally due to a lack of clinical cases identified at farm level.
- Those with a HH plan in place were more pro-active with BC practices and vaccinations at farm level.
- The booklet was considered a beneficial knowledge transfer tool to have for sourcing information and for guidance when carrying out vaccinations. Overall it increased awareness of vaccinations and BC practices and encouraged uptake of practices at farm level.

Masters in Agriculture Innovation Support - This project is funded by Teagasc under the Walsh Fellowship Scheme

Decision Making by Farmers on Succession & Inheritance

T. Russell[1,2], J. Breen[2], J. McDonnell[3], K. Heanue[3], M. Gorman[2] & P. Wims[2]
[1]*Teagasc, Advisory & Training Office, Tullamore, Co. Offaly*
[2]*UCD, Belfield, Dublin 4*
[3] Farm Management & Rural Development Department, Teagasc, Oakpark, Carlow
[4]*Rural Economy & Development Programme, Teagasc Athenry, Galway*



Development of a Guide to Succession & Farm Transfer

Rationale

- Currently in Ireland only 6.2% of farm holders under the age of 35 (CSO, 2012)
- Succession & Inheritance are the main mechanisms for increasing the number of young farmers
- Lack of information & support for agricultural advisors, farmers & successors on succession and inheritance (Results from this study to date)
- One of the main issues is the lack of communication and starting the conversation

Aim

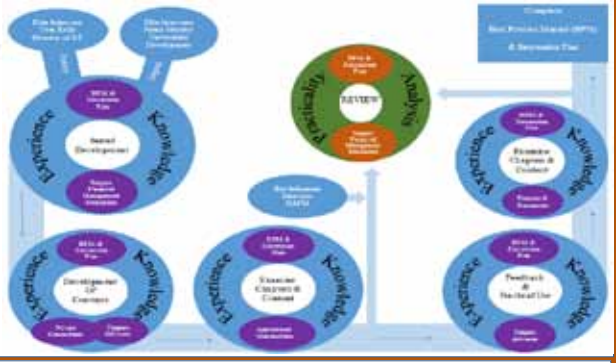
Develop a tool in the form of a book to support farmers in making decisions on succession and inheritance

Objectives

- Light, user friendly, graphical book
- Self complete workbook
- Deal with the emotional and interpersonal issues
- Focus on succession

Method

- Co-creation/Co-Design The practice of developing systems, products, or services through collaboration with end users, managers, facilitators, and other stakeholders
- Facilitated interactive consultation sessions
- Experience & Knowledge of Stakeholders, Providers and End Users



Result

Through 8 chapters with information & self complete exercises this guide:

1. Outlines the processes of Succession and Farm Transfer
2. Outlines the profile of the farm
3. Defines the profile of the farm family
4. The steps of communicating with the family about the future of the farm
5. Defines and takes the farmer through the steps in sharing management responsibility on the farm
6. Outlines the next steps for the farmer to take when they have started the conversation and if they cant reach a decision
7. Identifies the key professionals involved in the transfer of the farm and their key roles and responsibilities
8. Provides a formal Succession Plan document for use by the farmer to outline the future plans for the farm business

Acknowledgements

This research has been funded through the Teagasc Walsh Fellowship Scheme

References

Central Statistics Office. (2012). *Census of Agriculture 2010 – Final Results*. Dublin: Stationary Office.

Notes

Notes

Notes

Modern Printers 056 7721739

Contact Details:

Teagasc
Head Office
Oak Park
Carlow
Tel: +353 (0) 59170200
Email: eufras-ialbconference2016@teagasc.ie
Website: www.teagasc.ie

Agriculture and Food Development Authority