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About us



A socially distanced staff picnic in August 2020

We want to hear from you!

At the ORC, we are always looking at ways to strengthen our communication and make sure you as a reader receive the most interesting and relevant information possible. We would be interested in your thoughts on both the ORC's paper bulletin and e-bulletin which will help to inform any changes to their content and design.

To access the survey, please scan the QR code below. You can do this by completing the following steps:

1. Make sure your mobile phone or tablet is connected to the internet, either via WIFI or a mobile network like 4G
2. Open the camera on your phone or tablet
3. Hover the camera over the QR code opposite and a link will appear at the top of your screen
4. Click on this link to enable the survey to open in an internet browser
5. You will then be able to access the survey, which should only take five minutes to complete

Alternatively, you can also access the survey by entering the following website address into an internet search bar:

<https://forms.gle/Qf6UBHijW7ydcw2v8>

If you would rather speak to someone regarding your feedback on the bulletin, please email the ORC's Communication Officer on the email address below:

vicky.s@organicresearchcentre.com

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Bulletin editor
Phil Sumption

The Organic Research Centre is a leading, independent, research charity working for better farming, food and health, promoting environmental sustainability, quality food and health and wellbeing for all. We work in the UK and internationally to: research and develop practical, sustainable land management and food production systems based on organic and agro-ecological principles; foster knowledge exchange with and between current and future producers, food businesses and related professionals; and influence policy and public debates on the future of food and farming based on sound evidence.

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VAT No. GB314668159

Registered address

Organic Research Centre
Trent Lodge,
Stroud Road,
Cirencester,
Gloucestershire GL7 6JN

T: +44 (0)1488 658298

F: +44 (0)1488 658503

hello@organicresearchcentre.com

Twitter: @OrgResCent

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Editorial: Reflections on 21 years at Elm Farm/Organic Research Centre



Bruce Pearce with the ORC Wakelyns Population, NOCC 2016

As I leave ORC I've been asked to write this editorial as a way of reflecting on what I feel are the highs and lows and what we have achieved after 21 years with EFRC/ORC and nearly 30 years of involvement with the organic movement.

The highs have been the people and the sense of purpose I find within the movement. As a pretty naïve Higher Scientific Officer with MAFF I set out to understand the sector better and undertook a tour of producers such as Jan and Tim Deane, Deborah and Alan Schofield, David Wilson, Iain Tolhurst, as well as talking to many of the movers and shakers such as Lawrence Woodward, Martin Wolfe and Mark Measures (and many more that I don't have room to mention here). These inspiring people taught me so much about organic farming practice but also what it really means and strives for. They rank as mentors and heroes to me to this day.

My time at ORC has seen the organisation change out of all recognition. With three Directors/CEOs in Lawrence, Nic and now Lucy; the changing importance of research over advisory and then advisory over research and now with research and the increasing importance of knowledge exchange. Where I have worked has changed too with the development of the offices and then the sale of the Elm Farm site and the move to Cirencester. It hasn't been a staid or boring ride – probably why I lasted so long.

If I look for lows it is the way we as a sector have never been able to break through, unlike so many of our European neighbours. Organic is still too often seen as elitist. I know that it doesn't need to be, and it really can and should be something for all. We are once again fighting battles that I thought we had won a decade or more ago, such as getting government to accept that an organic system delivers many public goods. It seems incredible now that I co-authored an annex on the environmental benefits of organic in the 2002 English Organic Action. The resurgence of the land sparing and land sharing debate is also something that I thought we had put to bed. Unfortunately, I feel this may have led to the current wariness of the 'O' word. We should and must not shy away from using the term organic as it has a clear and unique meaning. It has legal status that helps us define what we are all about. Terms like agroecology, regenerative or other descriptions are all useful but because of their lack of legal and clear definition can often mean anything to anybody.

What do I think we have achieved over the past 21 years and where were we really ahead of the curve? I think I am most proud of four things.

1. Working with Martin Wolfe to get an agroforestry programme off the ground and with the work of great researchers within ORC making it a signature programme where we lead in the UK and are highly thought of across the rest of Europe and the world. At the millennium agroforestry was seen as an obscure and unrealistic approach to land management. We now see agroforestry being an accepted and even desirable option that gets its own mention in the agriculture bill.
2. The development and use of cereal populations. This started as an unsuccessful proposal to the EU. We persevered and Defra agreed to fund our first project. This was no mean feat as it was the start of a time where GM, molecular biology and uniformity was king. We came with this hypothesis that diversity was king, and we had enough science to build on to prove it. What made this work so powerful is that we worked with scientists from the John Innes Centre to help us produce the populations and immediately engaged with government policy makers as it was clear that if we were successful that any marketing of populations would be illegal and we needed a change in the law. Now 20 years on we have a 'variety', the ORC Wakelyns Population (or YQ as it is known more frequently), but also thanks to the work of others in the value chain, notably Kimberley Bell and Hodmedod's, there is a market for the flour and products made from it. The work with the Defra officials resulted in the EU 'marketing experiment' where heterogeneous materials have been allowed to be marketed within the EU and they now are embedded in the new EU organic regulation.
3. Agricollogy. The speed of technological advances over two decades has been phenomenal but this had led to too much technology looking for a solution or too ahead of its time. I've worked on many information platforms that petered out once the initial funding stopped. Therefore, to see the success and growth of Agricollogy is so rewarding. It is taking on a life of its own and seems to be accepted as a robust and trustworthy repository of knowledge and provider of events rivalled by none.
4. The other overarching achievement that ORC or me personally cannot take full responsibility for but is an achievement none the less is the way in which where organic farmers and producers have led their non-organic peers have followed. If I look back to 1999 the concern and care for the soil, the use of rotations, crop diversity, legumes and diverse leys were the basis of organic and a rarity with non-organic systems. We now see so many organic techniques being implemented by many farmers and hopefully soon by all.

I have had the privilege of working with an amazing team of colleagues both within and without EFRC/ORC and I leave ORC at a time of great change, when there is an ever-increasing need for our work. Having worked with the current team and having met some of the new appointees I know that I leave the centre in good hands.

It's been a great 30 years and I look forward to working with you all for the next 30 as we really do need to change the world for the better.

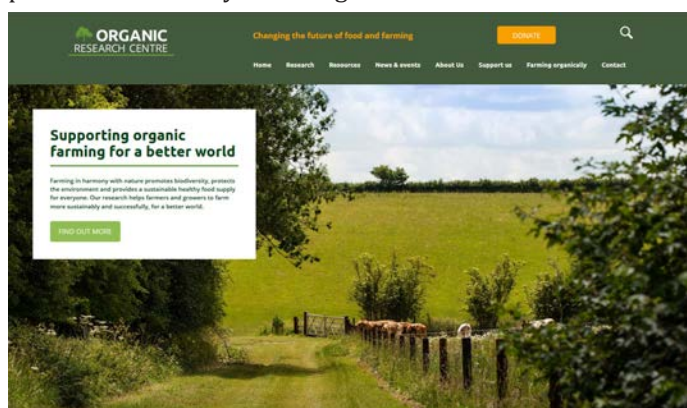
Bruce Pearce



News in Brief

New website for ORC

The big news is that we launched our new website in September. The aim was to create a site that feels modern, relevant and welcoming and to make the research and resources easier to access. It's been a massive collaborative effort, made possible as a result of the generous legacy from Mr & Mrs Leslie Pope. We still have work to do - the website will continue to evolve over the next few months - but please let us know your thoughts.



Growing an organic partnership

The postgraduate Organic Farming course at Scotland's Rural College (SRUC) is celebrating its 20th year. The MSc programme, run in an online format since 2002, is delivered by SRUC in partnership with ORC. The two organisations have signed a further five-year term of their partnership agreement for teaching provision and MSc supervision. The course is the only specialised MSc in Organic Farming in the UK, with well over 100 students gaining a Masters qualification since the programme's inception in 2000, and many more getting postgraduate certificates and diplomas or studying specific modules suited to their particular interests.

ORC begins collaboration with the Royal Agricultural University (RAU)

The Royal Agricultural University (RAU) has agreed a collaborative partnership with the Organic Research Centre in Cirencester (ORC) to expand industry links and research and teaching opportunities. A Memorandum of Understanding (MOU) was signed in September by Jo Price, Vice-Chancellor of the RAU, and Professor Neil Ravenscroft, Pro Vice-Chancellor (International), together with Dr Bruce Pearce, Director of Research and Innovation from ORC and Lucy MacLennan, CEO. The partnership will provide both organisations with enhanced opportunities to attract new sources of collaborative research funding as well as the potential for increasing recruitment of postgraduate research students. With a larger pool of experienced researchers, the collaboration will also offer research students enhanced supervision, as well as students benefitting from the knowledge of ORC staff through specialist lectures and research seminars.

As part of this collaboration, the ORC will benefit from access to the University's extensive online library and associated resources, and key professional and research staff will be recognised as Visiting Fellows of the University.

Agroforestry in the UK



The Soil Association have created a short film promoting Agroforestry which features Eastbrook Farm, Shillingford Organics and the Dartington Estate, with a little input from ORC's Lindsay Whistance for the research angle. <https://youtu.be/tw0y-3tkDRY>

Factors affecting the use of organic seed

An open access paper on the 'Factors Affecting the Use of Organic Seed by Organic Farmers in Europe' arising out of the LIVESEED project has been published in *Sustainability*. Authors include ORC's Stefano Orsini, Ambrogio Costanzo and Susanne Padel. The study identified a number of structural and attitudinal factors affecting the use of organic seed by organic farmers in Europe through a survey with 749 organic farmers. <https://doi.org/10.3390/su12208540>

EU Regulation implementation postponed to 2022

The EU Commission has postponed the application of the new organic legislation by one year to January 1, 2022, to allow more time for Member States to finish work on secondary legislation. Jan Plagge, President of IFOAM Organics Europe and the German growers' association Bioland, expressed his relief: "The postponement will enable a smooth transition for the farms, companies, inspection bodies and authorities, allowing them to adapt to the changes appropriately and make the necessary preparations."

Organic equivalence post-Brexit

We understand that the six UK Organic Control Bodies will have their recognition for equivalence approved at the next EU Committee on Organic Production on the 1st and 2nd December (i.e. able to certify to the EU standard) so that UK businesses can continue to export organic products to the EU in the event of a 'no-deal'.

Chief Executive of OF&G Roger Kerr and ORC Trustee said: "This is important because if we don't negotiate a free trade agreement (FTA) with the EU or if an FTA doesn't cover organic then European markets will effectively be closed to UK organic products. While our exports to the EU only represent around 5% of the total UK market, the EU markets represent a seasonal outlet for UK raw materials and with many supply chains finely balanced in terms of supply and demand in the UK, the loss of these markets would have a significant negative impact on producer prices."



Agriculture Act and Environmental Land Management

On the 11th November, the Agriculture Bill received Royal Assent and the first Agriculture Act for more than half a century saw the light of day. OF&G policy adviser *Christopher Stopes* reports.

Photo: Lisa Arguile

There was much work by many groups and organisations – notably the Sustain Alliance and their members – to propose and lobby for vital amendments. We were successful with some, but not all, see the blog¹ from Vicki Hird (Head of Sustainable Farming and Food Policy at Sustain) for a comprehensive assessment of the highs and the lows.

From an organic perspective, it was clearly good to see agroecology get a mention, but organic, a coherent, well defined, legally binding working example of agroecology, is not on the face of the Act. Although it has brought the EU organic regulation into UK law, Government has yet to explicitly recognise that organic land management is relevant to the Environmental Land Management (ELM) scheme by ensuring the delivery of public goods. This would be supported by increasing numbers of consumers and the public.

With 485,000 hectares of organically managed land worked by more than 3,500 farmers in the UK organic is clearly working well and delivering the public goods that Defra and the Agriculture Act claim to be committed to. But at little over 3% organic land currently the opportunity is not being realised. This is less than one-eighth the area that we could aspire to – bear in mind that the *EU Farm to Fork Strategy – for a fair, healthy and environmentally-friendly food system*² proposes a target for Europe of 25% organically managed land.

With all this by way of background, the slowly emerging Environmental Land Management (ELM) scheme is getting tied up in complicated knots, trying to define standards and public good outcomes – but with a reluctance to grasp the nettle. It is becoming evident that there is a fear that anything too effective, any real departure would garner criticism from the farming industry. Defra is perhaps treading too carefully.

The English Organic Forum (EOF) has made specific policy proposals for how organic could fit within the ELM scheme³ – and thereby deliver the public goods that we urgently need. No longer should farming result in a denuded environment, and a crisis for climate and biodiversity – not to mention human health. Of course this is more than about what farmers and growers do on the land, it is about our consumption patterns, our reliance on imports of food that we can grow here, excessive waste and so on.

The rationale for the EOF proposals is that the synergies of the organic farming system add significantly to the public goods benefit that can be achieved. We envisage two elements for the Sustainable Farming Incentive

(formerly Tier 1): Firstly, an Organic Management (public good) Strand with rolling agreements and based on a defined bundle of standard ELM options. This would secure continued delivery of public goods. Secondly, an Organic Conversion Option which would involve a multi-year agreement based on a planned organic conversion. This could include recognition of the costs of planning and restructuring to achieve the organic system-synergy public goods benefit, and the costs of certification.

ELM is being re-branded, gone are Tiers 1, 2 and 3 (too many echoes of Covid-19). Now Defra is talking about the Sustainable Farming Incentive (formerly Tier 1); Local Nature Recovery (Tier 2); and Landscape Recovery (Tier 3). With these names, it seems that organic could offer one way forward – that is why the EOF has offered policy proposals to Defra for organic. An organic policy, as part of Environmental Land Management, would support diversity (a key to resilience) and be good value for money. Rather than the 1,200 individual measures currently being considered in ELM, we hope that Defra will seize the opportunity that organic farming presents. As a legally defined farming system, with good evidence for public good delivery, backed up by the organic certification and annual inspection, there is a track record of high standards of organic farm management.

References

1. <https://www.sustainweb.org/blogs/nov20-new-agriculture-act2020/>
2. EU Farm to Fork Strategy (2020) https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf
3. English Organic Forum (2020) Proposals to Defra for organic support through the Environmental Land Management Scheme. October 2020

ELM Test & Trials: Agroforestry

ORC are leading on a new Test and Trial on agroforestry as part of the development of Defra's new environmental land management (ELM) scheme. The project, which started at the beginning of November, is a partnership between ORC, the Woodland Trust, the Soil Association and Abacus Agriculture and will run for two and a half years. We will work with farmers across the UK to understand barriers and explore with farmers the help they need to adopt agroforestry, including advice and payment incentives based on the public goods that the trees would deliver.



Sustainable sheep and goat production – a holistic approach

As the iSAGE project comes to a close *Lisa Arguile* and *Dr Marion Johnson* summarise the work conducted over the past four years.

Photo: Lisa Arguile

Holistic sustainability assessment – on farm

The farming of sheep and goats across Europe equates to a third of global trade. With uncertainties in the permanence of subsidies and increased pressure to incorporate sustainable agricultural practices, particularly those that are also environmentally friendly, there was a desire to assess the sustainability of sheep and goat farming in Europe. iSAGE addressed these issues through the development of a focused holistic sustainability assessment, the iSAGE PG Tool, which introduced a broader range of indicators with a particular focus on governance, animal health and welfare, and socio-economic performance. Having classified European sheep and goat farms into ten typologies the assessment was conducted by seven partners across Europe and Turkey, providing 206 assessments to be analysed per sector and per typology, the process of which was coordinated by ORC. A further six farms that had recently introduced an innovation were evaluated and the effect on the enterprises' carbon footprint quantified. Beyond the sustainability assessments, ORC was tasked with the development of a toolbox that could aid farmers when making decisions around sustainable practices, which is available at sageguard.net

Holistic sustainability assessment - Socio-economic, demographic and consumer trends

The research conducted in this area focused on developing an in-depth understanding of the interaction between various environmental, market and policy issues affecting the sheep and goat sector in Europe. A critical component of this research was to understand the socio-economic aspects affecting the multi-dimensional sustainability of the sector, at the farm level as well as at supply chain level, including consumers' attitudes towards sheep and goat products. Reasons for the perceived and real declines in consumption of sheep and goat meat were identified, as well as factors that influence the acceptability of dairy products by consumers.

ORC led a survey with retailers and with supply chain market players to identify best practices to boost the market penetration of sheep and goat products – e.g. through labelling, shelf-space, and collaborative planning at the supply chain level. ORC also participated in qualitative and quantitative surveys with farmers and consumers.

Climate change assessment

It is no longer questionable that our climate is changing, whether that be anthropogenic or as part of Earth's natural cycles, the droughts during the summer of 2018 and 2019 and the flooding over the winter of 2019 are unusual events that have caused significant disruption to agricultural activities. Over the last four years, iSAGE has gathered the most up to date scientific information on the impact of climate change

Innovation for sustainable sheep and goat production in Europe (iSAGE)



One of ORC's largest ever research projects, iSAGE was funded by the EU's Research and Innovation programme, Horizon 2020. The project had a total budget exceeding £6 million split between 33 industry and research partners who have collaboratively worked together to answer 20 research objectives over the duration of the project. Based around sustainability and innovation, the project adapted ORC's Public Goods (PG) Tool sustainability assessment framework which then fed into several of the research objectives. After 48 months of research, knowledge exchange and dissemination the iSAGE project came to a close in February 2020 with a policy meeting in Brussels, during which all work completed was summarised and policy recommendations presented to support the future of the industry.

ORC led the work on adapting the PG Tool, completing holistic farm sustainability assessments across Europe, and developed the iSAGE Sustainability Toolbox. We also contributed to holistic sustainability assessments with respect to markets and consumers, leading several tasks, climate change, holistic production systems, innovative systems, managing sheep and goat resources and communication being involved in summer schools, training sessions and dissemination workshops.



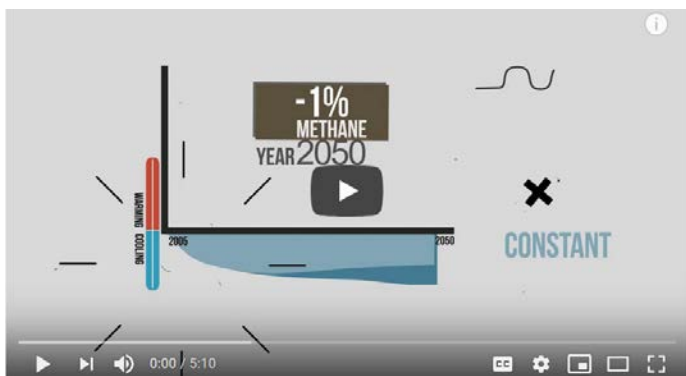
iSAGE has received funding from the European Union's Horizon 2020 research and innovation programme (grant agreement 679302).

www.isage.eu



on pasture and animal production related to sheep and goat farming systems. Research that – through models and holistic production systems – aims to find strategies that help sheep and goat farming systems adapt to climate change. ORC contributed to the review of existing project data and literature on climate change and small ruminants.

An infographic video which attempts to illustrate why ruminants are not to blame for climate change was produced by iSAGE partner BC3 as part of a contribution to the COP25 in Madrid (2019). The video can be found on the iSAGE website or at: <https://youtu.be/NbO4EEaH7YM>



*The role of ruminants on climate change mitigation.
"The good and the bad"*

SRUC PhD student Martha Dellar won a prize for her work on the prediction of the effects of climate change on animal and pasture productivity.

Holistic production systems

Holistic approaches to production are vital when aiming to achieve sustainability across the entirety of a business. This section is a collective area of research, collating research outcomes from across the project to design and test innovative management practices for sheep and goat farmers. Holistic farm modelling and case study farms were used to test and identify management solutions, addressing farmer and community changes and global issues such as food security, climate change, biodiversity, and socio-economic development. ORC contributed to testing and evaluating six farm-based innovations: the impact of Flock Health Clubs, the Savory Land to Market sustainability system, introducing grazing livestock into arable rotations, copper boluses for *Haemonchus* control, assessing for parasite resistance using Salivary IgA and the National Sheep Association's Young Ambassadors programme. Leaflets describing all the innovations tested by iSAGE can be found at: www.isage.eu/innovation-leaflets/.



Photo: Lisa Arguile

To complement the iSAGE sustainability Toolbox a Decision Support System (DSS) tool was generated for farmers in which they can predict how alterations in their inputs will influence their business's economic performance. The DSS was based upon the existing web application HappyGoatS and incorporated the key findings regarding challenges and sustainability issues of the small ruminant sector from the iSAGE project, providing a tool that could accommodate the needs of the diverse production systems within Europe.

Innovative system solutions - managing sheep and goat resources

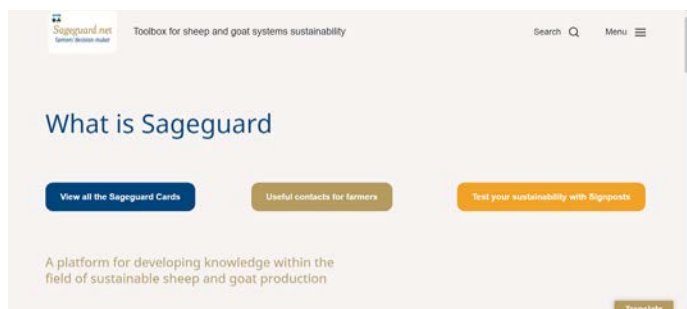
As the European sheep and goat industry tackles environmental, climatic and socio-economic (including demographic and market trends) challenges, research into innovative population-level genetic resource management and breeding solutions aims to help the industry cope and thrive in the future. The research assessed animal phenotypes and genotypes as indicators of resilience and adaptability to climatic challenge and their suitability for the future accounting for both environmental and socioeconomic factors. A second task was to develop breeding strategies and tools to enhance resilience and adaptability to future challenges. ORC contributed to the task assessing the capacity of local breeds to deliver resilience and sustainability with a study on the attitudes to, and preparedness of farmers for climate change and their use of local breeds.

Communication

With 37 partners and 18 industry stakeholders from across Europe, the consortium provides the perfect platform to disseminate the findings of the project. As part of the dissemination of project outputs, training and workshop sessions were held over the final six months in Morocco (September 2019), UK (December 2019), Spain (December 2019), and Greece (January 2020). ORC participated and presented in all of the sessions except the Morocco event, for which we contributed data. The workshop sessions provided the perfect opportunity to discuss the preliminary results with industry stakeholders whilst stakeholders and students were engaged during the training sessions.

iSAGE Case Study: Sageguard farmers' decision maker

The final output of the on farm holistic sustainability assessments was the development of 'a toolbox of recommendations regarding indicators (especially for social, economic and animal welfare) and tools suitable for practical decision-making'. The goal was to develop a platform to help farmers assess both their knowledge of sustainability and their practice. However, knowing where you are does not facilitate change; the other online section of the toolbox provides links to information on each aspect of sustainability covered by the assessment.



Sageguard homepage

The toolbox, known as Sageguard, builds upon previous outputs from across iSAGE but most specifically the iSAGE PG Tool. It comprises three sections:

1. Signposts to Sustainability – the sustainability knowledge and practice assessment
2. Sageguard itself – the toolbox of sustainability information,
3. Sageguard cards – an offline resource.

The toolbox aims to cater for a diversity of users, from students to practicing individuals and hobby farmers to large-scale producers, opening up the conversation of sustainability to a wider audience in the context of sheep and goat production.

Developing the toolbox – the concept

The Toolbox needed to be user friendly and accessible. *Signposts to Sustainability* simplifies the iSAGE PG Tool into a series of 'yes' or 'no' or 'not applicable' answers. Whilst the iSAGE PG Tool consists of 158 indicator questions covering a range of farming activities, within the toolbox the number of indicator questions had to be reduced to promote usability but still provide essential information. These were reviewed by consortium members and then by researchers, creating a narrowed down list of 145 indicators arranged into themes, situated under five over-arching sustainability dimensions of Livestock, Environmental Integrity, Economic Resilience, Social Well-being and Good Governance. The user progresses through the questions ticking the relevant boxes. The answers are then displayed as a series of red or green (or occasionally red and green or grey, question dependent) boxes, with red indicating that the farmer could improve this aspect of sustainability. The boxes then link through to the Sageguard section of the toolbox. In Sageguard the user finds links to articles and information on sustainability.

Livestock					
Flock	Breed	Body condition score	Replacements		
Health Plan	Health plan	Antibiotics	Parasites		
Disease Incidence	Flock / herd health	Quarantine	Proactive management		
Feeding Systems	Suitable diets	Concentrates	Forage		
Housing Characteristics	Condition of housing	Space	Water availability		
Expression of Natural Behaviours	Behaviour	Stress	Stocking densities		
Flock Productivity	Lambing success	Weaning success	Culling practices		
Genetic Selection	Genetic evaluation	Mating	Inbreeding		
Grazing	Permanent pasture	Diversity	Hay and silage		

Signposts to Sustainability results output

Each indicator question in Signposts has a corresponding section in Sageguard so a farmer with red in their assessment can always find information to help. Sageguard can of course be used independently and simply browsed for information.

Design

To ensure the final product was user friendly and accessible, the design aspect was vital, particularly as the uptake of decision support tools is known to vary depending on the platform. To cater for a greater audience an offline resource 'Sageguard Cards' was created. Although the content is linked, the Sageguard Cards provide a series of 'hints and nudges' towards improving sustainability performance that farmers can use in the field (they are water resistant) or back in the office as they please. By altering the indicator questions developed in Signposts, Sageguard Cards moves away from yes or no responses to more thought provoking, discussion-facilitating questions that encourage users to visit the website to find out more.



Sageguard Cards, designed by Chiara Tuoni

The Toolbox

Signposts is available in four languages, Sageguard in seven, although the links and Sageguard Cards are in English. All three outputs have been road tested on students, farmers, industry stakeholders and project partners during three iSAGE workshops in December 2019 (UK and Spain) and January 2020 (Greece). The Toolbox and Sageguard both received very positive feedback and requests for translation into further languages. The Sageguard Cards were also described as 'a thought of the day.'

<https://sageguard.net/>

Sageguard was created by an interdisciplinary team at ORC, incorporating expertise from Research (Dr Marion Johnson & Lisa Arguile), Design & Communication (Chiara Tuoni) and IT (Alan Carter, Validity).



Assessing Public Good delivery on farm with the PG Tool

One year in, one year to go

ORC researchers and advisors are now at the halfway point of one of their Environmental Land Management scheme's: Test & Trials (ELMs T&T). Led by the Soil Association, this project is looking at the capacity of the ORC Public Goods Tool for assessing public good delivery across two different landscape areas: The Clun, Shropshire, and the Exe Valley, Devon. *Lisa Arguile* reports.

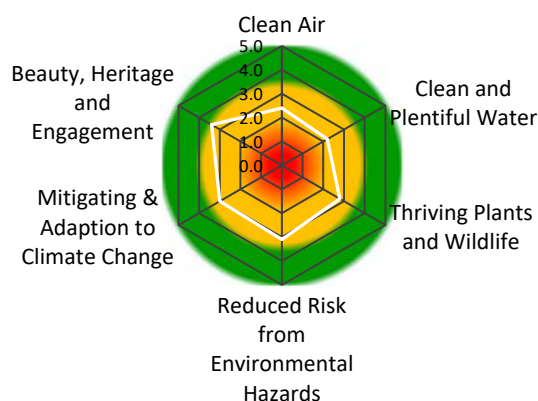
Photo: Lisa Arguile

The Public Goods (PG) Tool was originally developed as an advisory tool in 2010, supporting farmers interested in identifying the public goods their farming practices deliver in a holistic manner. Tried and tested through research projects, the tool can identify current strengths and weaknesses on farm. This ELMs T&T is trialling the PG Tool in a new way to see how well the tool can assess the delivery of six public goods identified by Defra as (1) clean air, (2) clean and plentiful water, (3) thriving plants and wildlife, (4) reduced risk from environmental hazards, (5) mitigating and adapting to climate change and (6) beauty, heritage and engagement.

Throughout March, six introductory meetings introduced the project to 70 farmers in the chosen landscape areas. During these meetings, an initial survey helped identify beneficial management practices already present in the area and whether these were undertaken voluntarily. This was followed by the circulation of the PG Tool to those interested in participating at the start of June.

The PG Tool assessments aimed to identify a) the public good delivery in each area and b) the useability of the current PG Tool as a method for assessing the delivery of public goods. We had hoped this phase would take more of a participatory approach with on farm visits. However, due to the unexpected coronavirus pandemic this stage was moved online, and participating farmers were supported via email and telephone.

Of the PG Tools circulated 18% were returned, either partially complete or complete by the end of August. The move online and timing of the trial, coinciding with the pandemic preventing on farm visits, a stretch of very good weather and then harvest were likely to be influential factors in the low return rate. Despite this, engagement was



high, with 62% of participants responding to team members about the process. This phase of the project, whilst not face to face as originally intended, has provided us with useful feedback on the PG Tool and how participating farmers felt about using it. Our second round of PG Tool assessments will incorporate these changes suggested by farmers and address the level of complexity required of the monitoring questions to encourage farmer engagement yet

provide sufficient detail to facilitate the monitoring of public good delivery within future ELM schemes. Alongside the PG Tool assessments, an investigation was conducted into how organic monitoring processes and other certification schemes could provide a useful resource for Defra and ELMs to monitor output delivery, and this will feed into the final output of this test and trial.

Over the next 12 months this project will continue work into the development of a suite of practices selected to provide optimal delivery of public goods, an outlined action plan for each landscape that could be rolled out as part of ELMs, and another round of PG Tool assessments.

Defra's Environmental Land Management Scheme is set to be rolled out from 2024, with a national pilot starting next year. Defra envisage that the scheme will reward farmers for the delivery of public goods and ecosystem services, replacing current BPS and Countryside Stewardship Schemes. They hope uptake will be on par with current BPS participation of 85,000, as they aim to make it as accessible as possible. If you are interested in hearing more, listen to Defra's Director General Food, Farming and Biosecurity answer questions from farmers:

<https://www.youtube.com/watch?v=DQxjKD65VNI>



Is crop diversification a burden for farmers?



The Business and Markets Team of Organic Research Centre (ORC), started a new task in January 2020 to examine the relationships of social aspects of crop diversification. As part of the DiverIMPACTS project, ORC will look at factors that impact (positive or negative) on the workload and quality of life of farmers that embrace these activities. Abel Villa explains the thinking behind the work.

Why focus on workload and quality of life?

Farming and agriculture are both dangerous and stressful occupations. The personal life of people who are dedicated to agriculture or farming is physically intertwined with the farm. The occupation and the life of people cannot be disentangled. In this regard, embracing crop diversification could mean an increase in activities that farmers previously did not have to perform. As a result, the carrying out of diversification activities could potentially increase the number of hours spent on the farm. It could also create a temporary or prolonged disruption to the leisure activities of farmers and their families. As result, farmers could face a great many changes that could be difficult to cope with and affect family and business relationships.

However, there is research on organic agriculture indicating that although organic farmers found it difficult at the beginning of the transition, they found a sense of reward by taking up agricultural practices that have a positive impact on the environment. There is also evidence that when farmers are learning new techniques and skills, new collaborations are created and enhanced. Therefore, the Workload and Quality of Life Assessment (WQLA) tool that we are using aims to identify factors that affect farmers (positive and negative) when embracing crop diversification at the value chain level. The goal is to gain insights about the sustainability of value chains, rather than the sustainability of single farms or businesses. ORC will collect data from three cases studies in the UK and form part of a wider list of case studies ORC works on in other tasks of the DiverIMPACTS project.

To examine crop diversification at value chain level, our research focus is on the three case studies. These case studies clearly indicate successful business models, networks, consumer relations and marketing. As crop diversification, in almost all cases, is accompanied by an increase in system complexity, the resulting higher workload, stress and various risk factors are serious concerns for farmers, growers, processors, and other actors in the value chain. These issues play a crucial role in decision-making on the ground.

The existing and available monitoring tools from the DiverIMPACTS project are mainly focusing on the farm level, and they examine in detail mostly the agronomic aspects of crop diversification. However, sustainability issues exist that emerge from a consumer's perspectives. These perspectives have been gaining importance over the past decade. Often farmers as well as consumers tend to look at sustainability from different perspectives.

Furthermore, much attention has been paid to farms alone with research focused on agronomic, cropping, landscape and sectoral aspects. In this task, using WQLA, a value chain perspective has been included. Notwithstanding the importance of farm level analysis, there are tools that will provide data at this level. Therefore, ORC's team will

DiverIMPACTS

Diversification through Rotation, Intercropping, Multiple cropping, Promoted with Actors and value-Chains Towards Sustainability (DiverIMPACTS).



DiverIMPACTS is funded by the EU's Research and Innovation programme, Horizon 2020. The objective of this project is to achieve the full potential of diversification of cropping systems for improved productivity, delivery of ecosystem services and resource-efficient and sustainable value chains. In addition, DiverIMPACTS aims to achieving full potential diversification by providing rural areas actors with those key enablers and innovations that would remove existing barriers and ensure actual uptake of benefits of crop diversification at farm, value chain and territory levels. In line with this objective, ORC will propose a range of technical and organisational recommendations to remove lock-ins from farmers to consumers as well as strategies and recommendations to sustain crop diversification.



This project has received funding from the European Union's Horizon 2020 research and innovation programme (grant agreement 727482).



Growing beyond monoculture

address the need for indicators that provide explanatory power about the nature and dynamics of a successful and sustainable value chain in relation to crop diversification. Such indicators relate primarily to the sustainability of the value chain. Part of the aim is to provide explanations and evidence-based alternatives to the excessive specialisation and intensification of farming systems in Europe.

What ORC is expecting to accomplish with WQLA?

With this Workload and Quality of Life Assessment Tool (WQLA) ORC expects to achieve two things. First, to identify factors that affect (positive and negative) crop diversification at the value chain level. Particularly as government, civil society and special interest groups are holding businesses and value chains accountable for their sustainability i.e. impact on environment and society. In summary, to understand how sustainable practices change the quality of life of farmers in value chains.

Secondly ORC hopes to further develop this tool and begin a line of research which focuses on the relationships between social impact, workload, and quality of life of actors in value chains. WQAT is still under development through feedback from participant actors of value chains of three case studies in the UK. This participatory design of the tool will help to narrow down the factors that need to be included and as such, farmers and other actors in the value chains collaborate with us to design the tool.

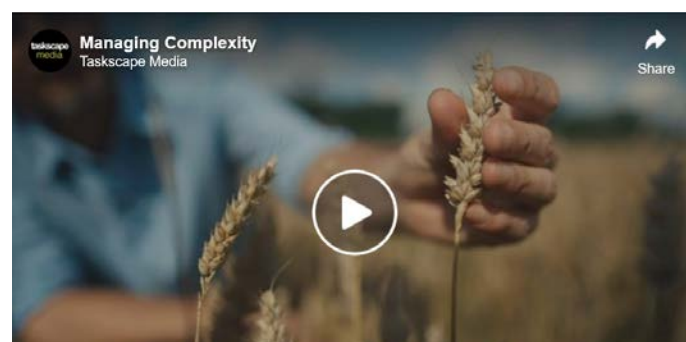
The DIVERSify project has produced a web video series about various aspects of intercropping. Three episodes are now online covering the subjects of ecosystem services, tools and techniques, and innovation and gaps.

Episode 1: From the ground up



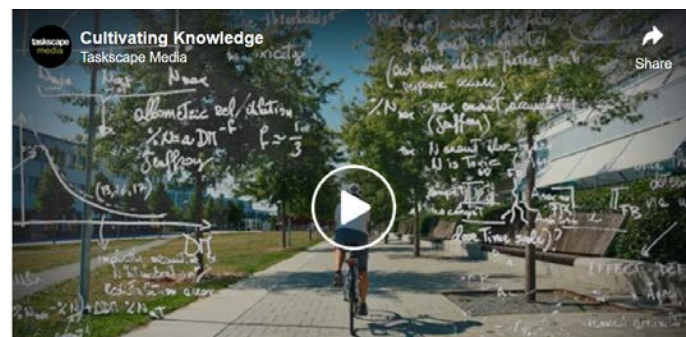
A look at the networked benefits mixed cropping offers - from agricultural productivity and resilience to conserving ecosystem services, the life support systems of our living planet.

Episode 2: Managing complexity



If plant teams have benefits, why isn't everyone using them? This episode, dedicated to the late Prof. Martin Wolfe, explores the complexities plant teams introduce into the processes of growing food.

Episode 3: Cultivating knowledge



Can we work through mixed cropping's complexities? Farmers, scientists and industry stakeholders are innovating and narrowing knowledge gaps.

www.plant-teams.eu/watch



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Organic beekeeping in Ireland

Karin Stierle is a 2019 graduate student from the SRUC postgraduate course in Organic Farming. Karin wanted to combine her practice as a beekeeper with her interest in organic agriculture. Her thesis was supervised by ORC.



Photo: Agricollogy

Many of the Irish beekeepers I meet are passionate about keeping bees in a natural and environmentally friendly way yet it is a common belief among Irish beekeepers that the shortage of organic bee forage is the reason for the lack of certified organic beekeeping in Ireland.

The regulations for certification of organic honey are difficult to achieve, honeybees' forage behaviour changes with the seasons, the weather, and the needs of the hive. Certification requires, 'apiaries to be placed in areas which ensure nectar and pollen sources consisting of organically produced crops for a radius of 3km from the site of the hives'. This is almost impossible to achieve in a country with so little organic agriculture. However, the regulations go on to say that 'apiaries may be placed in areas of spontaneous vegetation or non-organically managed forests or crops that are treated with low environmental impact methods'. There are several areas in Ireland that would fulfil this requirement, such as uplands and national parklands. What seemed interesting to me was that many beekeepers already use these lands to produce excellent 'heather honey'. I felt there must be other reasons why Irish beekeepers are not engaging with organic principles. Therefore, I decided to examine Irish beekeepers' attitudes to organic practice as a first step in understanding how organic beekeeping might be developed in Ireland.

The main objective of the study was to understand the factors which affect the lack of certified organic honey in Ireland and to argue that there is more than one factor affecting organic honey production in Ireland.

The results of the study can be broadly divided into two sections, factors or conditions that support the development of organic beekeeping in Ireland and factors that are inhibiting or restricting its development.

Overall, the study found that Irish beekeepers have a favourable attitude to organic beekeeping. There was a sense among beekeepers that 'they would like to be organic' and a few felt they already were! Two reasons emerged for this positive attitude: most viewed 'organic' as a good thing and almost all noted that organic honey achieves a higher price.

Varroa destructor is one of the biggest threats to Irish bees; when asked about treatments for varroa nearly all Irish beekeepers in this study used organic acids, stating a brand name or chemical designation. The widespread acceptance of the use of treatments permitted under organic certification either knowingly or not, suggests that

Irish beekeepers can and do manage this disease threat effectively in a manner consistent with organic principles.

Beekeepers who expressed a willingness to convert to organic beekeeping practice were found to have little knowledge of organic beekeeping methods. In all cases the willingness to convert was driven by an expectation of a higher price or return.

The research identified a lack of knowledge of organic beekeeping and an absence of any information about the practice to be the most limiting factors to the development of organic beekeeping. The study also found that Irish beekeepers' environmental concerns are particular to beekeeping. Other studies suggest strong environmental concerns influence farmers' intent to engage in organic practice; in Ireland environmental concerns would not seem to be a motivator for conversion to organic practice for beekeepers.

Irish beekeepers' knowledge of organic beekeeping regulations was mostly limited to the forage regulation of 3km and there was a general sense that organic beekeeping means the elimination of chemicals from hives. The only source of information about organic beekeeping methods for Irish beekeepers who had an interest was the internet.

The study revealed several positive factors for the development of organic beekeeping in Ireland. Irish beekeepers have a positive attitude to organic beekeeping and that is a good place to start. Most Irish beekeepers practice methods of disease control that are consistent with organic regulations and there are beekeepers willing to consider conversion to organic methods. The lack of organic beekeeping knowledge and information could be addressed with education, support, and the development of a dialogue between stakeholders. Recent research has shown Irish heather honey to have similar qualities to Manuka honey; heather honey produced on upland areas might satisfy organic certification requirements and be a starting point for the development of organic beekeeping in Ireland.

There was a serious information deficit about organic beekeeping methods among the Irish beekeepers I spoke to for this study. Organic honey is a growing market worldwide and represents an opportunity for Irish beekeepers to develop and diversify the honey sector in Ireland. The first step in the development of the organic beekeeping sector in Ireland would be to address the knowledge deficit and increase the awareness of organic beekeeping methods.



Crop mixtures

Crop mixtures (growing of two or more crops together) have been found to have beneficial impacts on weed control, standing ability, pest and disease control, and to contribute to increased or more stable yield per land area. This virtual field day held in collaboration with the James Hutton Institute and the SEAMS and DIVERSify projects featured Rob Brooker and Ali Karley (James Hutton Institute) giving an overview of crop mixtures in research and practice, Andrew Gilchrist (Scottish Agronomy) talking about experiences of trialling seven different cereal-legume mixtures, Gordon Cairns (Stracathro Estates) on growing beans and rye for whole crop (AD) and Charlotte Bickler (Organic Research Centre) on selecting mixtures and what to do with the end product.

www.agricology.co.uk/resources/virtual-field-day-crop-mixtures

Intercropping in arable systems

Intercropping offers the potential for more efficient resource utilisation, reduced pest and disease pressure and better competition with weeds. This online event, co-ordinated by Agricology, Innovative Farmers (IF) and ORC, provided an opportunity for farmers and researchers to share their experiences, practical insights and questions in an informal discussion. Members of the IF Field Lab on Intercropping in Arable systems have been experimenting with a range of intercropping and companion crop mixtures including wheat-beans (weed suppression), OSR-peas and oats (pest resilience) and triticale-beans (scaffolding and weed suppression). David Casebow, at Sonning Farm (Crops Research Unit of Reading University), took us on a 'virtual farm tour' of the trials at Sonning (with the help of his father David who was out in the fields!) and shared insights from previous years. Other farmers and researchers also shared experiences from on-farm trials including farmer and Nuffield Scholar Andy Howard (Bockhanger Farms), Adrian Hares, organic beef and arable farmer at Roundhill Farm in Wiltshire, and researcher Lenora Ditzler - who talked about strip cropping in horticulture and pixel cropping in the Netherlands.

<https://www.agricology.co.uk/resources/virtual-field-day-intercropping-arable-systems>

Cover crops, living mulch and leys: Cereals LIVE 2020

This was part of Cereals LIVE 2020. It was a collaboration between Agricology, CFE and the NIAB team that came partly live from the NIAB Innovation Farm - digging mini soil pits to look at the impact of different leys and covers. It explored what has been learnt about integrating cover crops and the next steps to integrating a longer term cover using living mulches and integrating leys. It also covered the benefits of more diverse herbal leys in arable rotations and opportunities for both integrating livestock/collaborating with livestock farmers as well as the potential in stockless systems, sharing some of the insights from the SARIC project. It features Nathan Morris (NIAB) - Cover crops and living mulches; George Crane (NIAB) - Mycorrhizal associations; Dr Lydia Smith and Patrick McKenna (NIAB) - Herbal leys; and Emily Cooledge (Bangor University) - Benefits of livestock integration/collaboration. It also featured James

Alexander of Litchfield Farm, who shared his experiences in both organic and conventional systems.

<https://www.agricology.co.uk/resources/virtual-field-day-cover-crops-living-mulch-and-leys-cereals-live-2020>

Herbal leys

Multi-species herbal leys combine complementary grass, legume and herb species. A more diverse sward can provide greater resilience to climate extremes, benefits for animal health, soil quality and biodiversity. This two-part series was a collaboration between Agricology, Soil Association, Innovative Farmers, FABulous Farmers, Duchy College, AgriTech Cornwall, FWAGSW and Rothamsted Research. These events provided an opportunity to share the latest findings and practical experiences, bringing together farmers, advisors and researchers in the virtual field to share ideas and experiences.

www.agricology.co.uk/resources/herbal-leys-virtual-field-day-parts-1-2

Getting started with agroecological farming

There is increasing recognition of the benefits of integrated agroecological farming systems but where to start? Farmers David Rose and George Young share their experiences of moving towards an agroecological approach. They talk about joint enterprises, integrating livestock and a diversity of crops into the rotation, establishing an agroforestry system; sharing some of the practicalities and rewards. This recording was hosted by Agricology as an open online discussion.

<https://soundcloud.com/agricology/1-getting-started-with-agroecology>

Land sharing and sparing

In this Agricology podcast, ideas around land sharing and sparing are explored - considering how to balance the need for sustainable food production with the need to protect the environment and wild spaces in the future. It features a discussion that was hosted by Charlotte Smith and recorded as part of NOCC online in partnership with OFandG. Featuring Sue Pritchard from the Food, Farming and Countryside Commission, Roger Kerr from OFandG, Bruce Pearce from the Organic Research Centre, and Vicki Hird from Sustain: The Alliance for Better Food and Farming.

<https://www.agricology.co.uk/resources/land-sharing-and-sparing>

Agricology in the Field - Wendy Seel

Wendy Seel runs "organic, grown with nature, small scale and local" Vital Veg at North Tillydaff farm near Aberdeen. She describes the design of their growing system, ways in which they build soil fertility, attract pollinators and pest predators, increase biodiversity, and get as much diversity and variation in time, space and variety as they can. She particularly focuses on the way in which trees have been integrated and the many beneficial functions they serve. View the full farmer profile and listen to the podcast on the Agricology website.

<https://www.agricology.co.uk/field/farmer-profiles/wendy-seel>



Staff news at ORC

Welcomes

Will Simonson

We are delighted to announce the appointment of Dr Will Simonson as ORC's new Head of Research. Dr Simonson replaces Dr Bruce Pearce, who stepped down from the role in October after 21 years at ORC. Previously working as Senior Programme Officer, Climate Change and Biodiversity for the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) on agricultural, forest and coastal ecosystems and with experience researching agroforestry, Dr Simonson brings a wealth of knowledge to the ORC. Commenting on the position, Dr Simonson said:

"It's a privilege to be taking up my position as Head of Research at ORC and be part of the fantastic work that has been going on for the last 40 years. I look forward to working with ORC's team and many partners to help meet current and future challenges in sustainable farming."

Lucy MacLennan, CEO at ORC, added: "I am delighted to welcome Dr Will Simonson to ORC. His knowledge and experience will ensure that we continue to develop our research to improve the uptake, efficiency and development of organic farming as well as leading our Agroforestry research theme."

Vicky Smith

We welcome Vicky Smith, who joined us in October as Central Communications Officer. Vicky's role centres around ensuring clear internal and external lines of communication, whilst also making sure the ORC's message and logo are recognisable and consistent. Vicky is a Harper Adams Agriculture and Environmental Management graduate.

Anthony Wilson

Anthony Wilson joined ORC in the Summer as Research Coordination Officer. Anthony's role focuses on the oversight and coordination of project management and staff resources, including project reporting, project bidding and quality assurance. He also has responsibilities in relation to health and safety issues.

Tamasin Connett

Tamasin Connett also joined ORC in the Summer as head of Finance. Tamasin's role and responsibilities include heading up the finance team, preparing management accounts, budgets and forecasts, and working as part of the leadership team.



Farewells

Bruce Pearce

In October we bade farewell to Dr Bruce Pearce, who left ORC to relocate to Scotland, after more than 21 years at the centre of

our work. Bruce joined Elm Farm Research Centre, as it was then, in 1999 and has had many roles, most recently as our Director of Research and Innovation, responsible for the management of ORC research, knowledge exchange and policy programmes.

Lucy MacLennan, CEO at the ORC, said: "I would like to thank Bruce for everything that he has delivered for the ORC over his long career at the organisation."

Bruce has set up as a freelance consultant in sustainable and organic gardening, food and farming, and will continue to work with ORC as an Associate.

Anja Vieweger

October also saw us saying goodbye to Anja Vieweger, who has moved back to Switzerland to take up a post at FiBL. Anja joined ORC in 2011 as a researcher, working primarily on horticulture and soils with a major focus on health concepts in organic agriculture. Always passionate about co-innovation and building a sustainable food system for all, she has worked closely with a number of leading organic farmers to develop best practice networks and guides on healthy farm systems.



Bruce Pearce launches the ORC Wakelyns Population at NOCC 2015



New Project: AGROMIX

ORC is one of 28 partners from 13 countries exploring methods to implement agroforestry and mixed farming across Europe as part of AGROMIX (AGROforestry and MIXed farming systems). Funded by the European Union's Horizon 2020 programme AGROMIX is a participatory research project which aims to drive the transition to a resilient and efficient land use in Europe. It focuses on practical agroecological solutions for farm and land management and related value chains.

ORC is leading a task on value chain in the socio-economic work package, and also contributing data from one of the six core research sites that form part of the key project objective to quantify biophysical indicators of agroecosystem resilience at the plot scale. The project will make use of data from the fully replicated agroforestry trial at Elm Farm, which combined short rotation coppice with silage and beef production. ORC also is also managing one of the six core sites, an agroforestry farm in SE England, that will be used for detailed analysis of mixed farming and agroforestry.

The project leader is the Centre for Agroecology, Water & Resilience at Coventry University.



Ramial woodchip production and use on farm

Woodchip can increase soil organic matter, water holding capacity and nutrient levels of soils. Senior Agroforestry Researcher Sally Westaway reflects on the conclusions and outputs of the WOODchip for Fertile Soils (WOOFS) project.

Ramial Chipped Wood (RCW) is fresh un-composted woodchip made from smaller diameter younger tree branches. Nutritionally these are the richest parts of trees, with young tree branches containing as much as 75% of the minerals, amino acids, proteins, phytohormones and enzymes found in the tree. Can RCW produced on farm from the management of trees and hedges be used as a sustainable source of fertility and organic matter for arable and horticultural production? The WOODchip for Fertile Soils (WOOFS) EIP Operational Group have investigated this innovative technique, linking tree and hedge management with annual cropping, through on-farm trials run over a three-year period.

Logistics and economics

There are many factors that may make RCW an attractive alternative to using green waste compost. These include the lack of availability of compost, lack of space for storage or production of own compost and a wish to be self-sufficient in inputs.

The relative costs of different methods will vary between systems and farms, but RCW is likely to make the most economic sense:

- when coppicing to rejuvenate an old hedgerow,
- where local woodchip supply is limited, costly and/or the quality cannot be guaranteed,
- where hedge or tree management for logs produces brash that will not otherwise be used.

It should also be considered that RCW and compost although both adding organic matter will have different actions on the soil and could be used in a complementary way.

There are economies of scale to consider in the production of RCW, and coppicing and chipping becomes cheaper per unit as the volume increases and contracting in larger more efficient machines becomes viable. However, larger farming enterprises often also have less flexibility to change and adapt as their scale (field sizes, business turnover required) means that doing things by hand or with smaller machinery is prohibitive.

Trial results

Results from the trials suggest that, when applied to a legume ley or with fertiliser, RCW has a minimal or a positive impact on crop yields and may increase crop resilience to pests and diseases and extreme weather events. The addition of RCW increased P availability across all the trial farms and if as a farm you have low P both RCW and compost might be worth considering.

The trial results suggest that RCW may have many of the same beneficial effects as compost and hence could offer

an option for farmers where livestock are scarce or the raw materials for composting are unavailable. RCW also provides a potential use for brash from tree and hedge management activities and a useful alternative to burning this material in the field, keeping the fertility on the farm and helping move fertility from the hedges and edges out into the field. The introduction of active management to farm hedges and trees has additional benefits, improving their structure, function and viability and ensuring that the full range of potential ecosystem services can be realised.

In conclusion, RCW is not a panacea, but has the potential to offer some significant benefits in terms of carbon capture and storage, overall soil and crop health as well as helping farms move towards self sufficiency in inputs and closed system farming.

Project outputs

We have produced three short technical guides outlining observations and results from the trials.

Technical Guide 1: Ramial Woodchip production and use

This guide focuses on the logistics and economics of using RCW.

Technical Guide 2: Ramial Woodchip in agricultural production

This guide outlines key results from the project's on-farm trials.

Technical Guide 3: Using ramial woodchip as part of a whole farm system

This guide puts the use of RCW in a whole farm context, considers the wider ecosystem service benefits of RCW, barriers to adoption, support available and regulations that farmers and growers should be aware of.

Find the reports and more at:
<https://www.agricology.co.uk/woodchip-fertile-soils-woofs>



Events and announcements - details at www.organicresearchcentre.com

Events

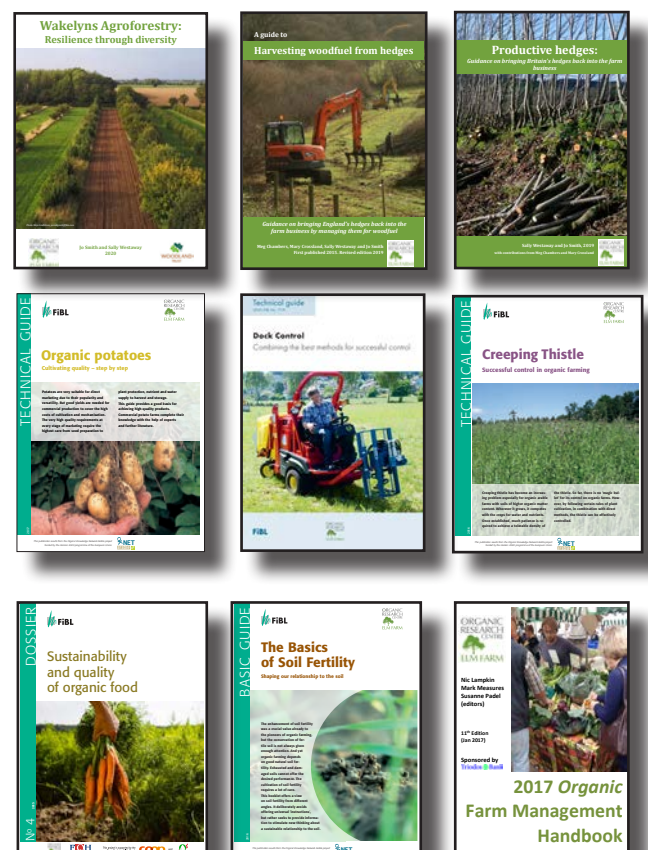
7-13 January 2021: ORFC Global <https://orfc.org.uk/>

19-21 January 2021: Intercropping for sustainability - Research developments and their application
DIVERSify and ReMIX team up with the Association of Applied Biologists to host this joint event via Zoom.

25-26 January 2021: Improving sustainability and welfare in organic poultry and pig production

OK-Net EcoFeed final project online conference bringing together four Horizon 2020 projects: OK-Net EcoFeed, PPILOW, Freebirds and POWER. <https://ok-net-ecofeed.eu/>

Technical guides/publications



Download only at present! <https://tinyurl.com/ORC-pubs>

