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The BovINE project thanks all members of the Network for their collaboration and participation in all activities between 2020 and 2022. Project partners look forward to staying in contact and to developing further opportunities for collaboration.

*Outside covers caption:*

The Mertolenga breed has its origin in the south of Portugal, interior Alentejo, near the banks of the Guadiana River. It is raised in extensive production systems, remaining in pasture throughout the year. It has great adaptability and good maternal characteristics. In this photo, taken during the summer, we have a red spotted cow near Évora.

*Photo credit: Gonçalo Villaverde*





Professor Maeve Henchion, Project Co-ordinator, BovINE

**“It gives me great pleasure to welcome you to our BovINE magazine. The publication illustrates the concentrated efforts that European beef farmers, researchers, advisers and other stakeholders are making to identify solutions to the challenges facing their sector. It also demonstrates the value of having a coordinated framework, facilitated through the BovINE approach, to capture and enhance these proactive efforts.**

BovINE was established in 2019 to address the sustainability challenges – of which there are many – facing the beef sector. BovINE succeeded in engaging intensively with farmers across nine EU member states on an annual basis to identify their priority needs, and then, through nine dedicated country networks and four thematic working groups, identified multiple solutions to meet these needs. BovINE partners have captured these solutions in over 470 practice abstracts, 12 webinars, 8 animations, multiple videos and other materials, with much content available in multiple European languages on our website.

On behalf of the BovINE network, I am immensely proud to share our work including our solutions with you in the following pages, to indicate where further details are available in multiple formats, and to signpost you to the widest range of solutions available on the BovINE Knowledge Hub (BKH). BovINE partners look forward to staying in contact with all stakeholders and continuing to drive forward the sustainability of European beef farming.”

**Website: [www.bovine-eu.net](http://www.bovine-eu.net) BovINE Knowledge Hub: [hub.bovine-eu.net](http://hub.bovine-eu.net)**

## THEMATIC AREAS

**BovINE drew on the reservoir of knowledge that existed at the farm level on the four related key themes of Socio-Economic Resilience, Animal Health and Welfare, Production Efficiency & Quality and Environmental Sustainability. The scope of the four themes is described below.**

**Using these same themes, the project also identified research findings that still need to be widely adopted at the farm level and examined their feasibility on multiple demonstration beef farms across Europe.**

### Socioeconomic Resilience

Improving the economic sustainability of beef farmers in Europe through investigating opportunities to improve incomes and lifestyle through improved management, and looking at issues such as labour saving and thus work-life balance, farmer health and safety and complementary income streams.

### Animal Health & Welfare

Improving animal health and welfare amongst cattle in different beef production systems in Europe by identifying the main animal health and welfare concerns of farmers through bottom-up approaches, including future issues through analysing European and national regulations or recommendations.

### Production Efficiency & Meat Quality

Improving the production efficiency at the farm level in the European context while considering meat quality by identifying the main production efficiency and meat quality concerns of farmers through bottom-up approaches, including future issues through analysing European and national regulations or recommendations.

### Environmental Sustainability

Improving the environmental sustainability of the European beef cattle industry at the farm level, to reduce the carbon footprint of meat production (CO<sub>2</sub> eq/per kg meat production), to reduce volatile emissions (both greenhouse gasses and ammonia emissions) coming from the beef cattle industry and to reduce nutrient excretions (especially nitrogen and phosphorus P).



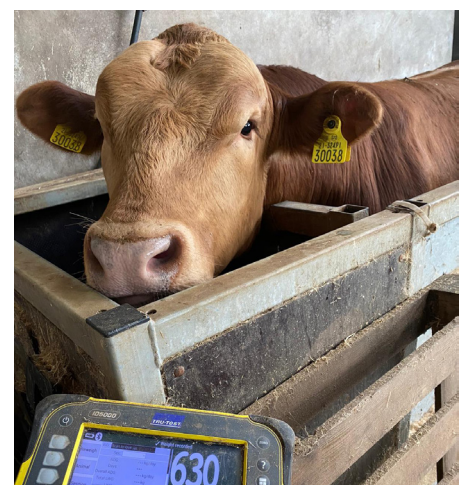
*BovINE Project Partners at Kick Off meeting in Dublin, Ireland - January 2020*

## PROJECT OBJECTIVES

The BovINE project aimed to stimulate and foster knowledge exchange and the integration of research and good practice into practical innovation at regional, national and international levels between the relevant actors within the European beef sector.

The specific objectives were to:

1. Establish a network of EU beef farmers, farming organisations, researchers, advisors, other agricultural professionals, and other relevant actors/players, driven by four sub-thematic (Socio-Economic Resilience, Animal Health & Welfare, Production Efficiency & Meat Quality and Environmental Sustainability) and nine national/regional sub-networks.
2. Identify and assess beef farmers' urgent knowledge needs, and evaluate dissemination channels and formats appropriate to share such knowledge, taking account of regional/national specificities.
3. Create an online archive (the BovINE Knowledge Hub (BKH)) of practice-ready research solutions and good practices previously analysed in terms of cost-benefit and ability to address beef farmers' needs, which is accessible to all players in the European beef industry.
4. Create and disseminate end-user material to demonstrate good practice and practice-ready research to the relevant audiences (beef farmers, advisors, policymakers).
5. Collate ideas from end-users for further innovation-driven research, and communicate this back to the EIP-AGRI network and policymakers.



# BovINE's Organisation

The aim of the BovINE project was to identify good practices and innovations that address specific needs of European beef farmers. These good practices and innovations have been created as posts on the BovINE Knowledge Hub and on the EIP-Agri website as Practice Abstracts (PAs).

To ensure BovINE's objective to meet beef farmers' needs and challenges, and to structure the multi-actor process, two core organisational structures were established:

**National Networks:** In the 9 BovINE countries a network of national, regional and local farming practitioners, innovation and business actors concerned with beef production have been established by each national Network Manager (NM). The NMs in each country led the collection of grassroots needs and good practices with the support of their organisations and other parties.

**Technical Working Groups (TWGs):** Four TWGs were created each to focus on one of BovINE's four themes: Socio-Economic Resilience, Animal Health and Welfare, Production Efficiency and Meat Quality, and Environmental Sustainability. Each TWG consists of a leader and relevant actors with an interest and or expertise in the topic. These groups have been responsible for the collection of research innovations and good practices through literature searches and discussion.

These two organisational bodies interacted during the course of the project thus ensuring beef farmers' needs were addressed through the integration of practice and research knowledge. National and regional multi-actor meetings organised by the NMs have provided insights into the needs of beef farmers in different regions. Annually all priority needs by thematic area were collected and priorities selected by practitioners (NMs) and researchers (TWGs). Once agreed, the TWGs started searching for solutions for these priority needs in academic and grey literature whilst NMs consulted with practitioners and drew on their own expertise.



Map of countries involved in the BovINE Project

## THEMATIC LEADERS TWGs

**Environmental Sustainability**  
Karen Goossens & Riet Desmet



**Animal Health & Welfare**  
Dr. Alexander Riek



**Socioeconomic Resilience**  
Kees de Roest



**Production Efficiency & Meat Quality**  
Virginia c. Resconi



## CROSS CUTTING THEMES

Although each solution or practice validated by BovINE addresses one particular Priority Topic in one Thematic Area, some practices can have an impact (either positively or negatively) on sustainability at a whole farm systems level. The potential of these combined effects was also studied in BovINE. Information regarding the trade-offs and win-wins of Priority Topics, Good Practices and Research Innovations across thematic areas were evaluated. This approach also led to the identification of further knowledge gaps. To discuss this a workshop was held during the 6th Project General Assembly in Germany including both internal consortium members and outside actors invited by different partners. These outside actors provided stakeholders' perspectives on these impacts, contributing valuable insights into the practical aspects of the implementation of such solutions. Below, four examples of identified cross-cutting effects are provided.

1. Long-term business planning tools to improve economic efficiency and socioeconomic resilience might also have an impact on animal health and welfare as a benchmark tool for veterinary costs. Improving technical and resource efficiency can also help meat quality and reduce waste of resources. However, the impact on crop and feed production may intensify land use and increase fertilizer use.
2. The implementation of solutions to improve the health and welfare of new-born calves on suckler farms, may also have positive effects on production efficiency, economic farm results and environmental sustainability due to reduced antibiotic use and lower residue volumes.
3. Automated animal monitoring or precision livestock farming tools developed for the fattening phase, to improve production efficiency and meat quality, can also reduce

the stress for weight scale and help detect sickness earlier. These methods can also show that animals were produced under high health and welfare standards, whilst lowering personnel costs and reducing carbon footprint.

4. With regard to environmental sustainability, methods to enhance biodiversity on beef cattle farms can also have 'cross- effects' in other thematic areas due to better quality grass through mixed cropping, more drones and better pollination, lower use of fertilizers thus also improving consumers' image of beef farms.



# BovINE and Policy Matters

## A BRIEFING FROM MAEVE HENCHION, PROJECT CO-ORDINATOR

While the primary aim of the BovINE network project has been to identify solutions to beef farmers' needs in relation to economic, environmental and social sustainability, it is also recognised that the beef sector has a role to play in addressing policy challenges beyond the agricultural sector.

These policy challenges include the environmental challenges of climate change and biodiversity, and social challenges such as ensuring a secure supply of safe, nutritious, affordable food whilst ensuring a fair return for primary producers. The BovINE consortium, with a membership of farmers, advisors, other agricultural professionals and researchers, believes that the agricultural research and innovation community has a responsibility to support the delivery of wider policies that seek to address these challenges. Such policies include Europe's Green Deal and Farm-to-Fork initiatives plus associated strategies. The thematic nature of the BovINE process means that the knowledge gathered within BovINE can help to identify solutions, inspire policy interventions and reveal possible trade-offs and synergies in and across solutions that address individual sustainability challenges.

### BovINE Policy Brief

BovINE has produced a Policy Brief for European and national policy-makers and other interested parties working to secure the sustainability of the European beef sector. Organised around six important domains, the document reflects the sustainability knowledge needs identified by European beef farmers, whilst simultaneously echoing topics of importance to policy-makers across Europe.

The six domains addressed in the document are: Reducing GHG emissions; Improving farm biodiversity; Increasing organic production; Improving animal health and welfare; Ensuring fair economic returns; and Communicating and promoting sustainable beef production. A key feature of the Policy Brief is that it highlights the role of farmers as innovators, and the need to look to farmers across Europe, as well as to the scientific community, for practical solutions to these sustainability challenges. It also highlights the value of demonstrating research innovations to farmers as a means of refining solutions and enhancing adoption. The importance of engaging with farmers to facilitate demand-driven innovation is also highlighted.

BovINE presented the Policy Brief to policy makers from DG Agri, DG Research, DG Santé and DG Environment, together with other policy influencers in Brussels on 1st December 2022. The Policy Brief is available to read and download on the BovINE website (<https://www.bovine-eu.net/>).

For more information on BovINE and policy matters email [maeve.henchion@teagasc.ie](mailto:maeve.henchion@teagasc.ie)

## SUSTAINABILITY OF THE PROJECT

BovINE has been proactive in establishing and linking with networks across Europe, in addition to establishing its own multi-actor networks in nine member states. BovINE has created links with related projects – from Horizon Europe projects to Operational Groups - and engaged with relevant pan-European organisations namely Copa Cogeca, EUFRRAS, and ERBS via its project advisory group.

These networks have established awareness of BovINE across the sector, but, most importantly, have enabled the project to engage with thousands of farmers across diverse beef production systems. Through this engagement BovINE has identified farmers' real needs, developed practical solutions for those needs, and produced accessible materials that link directly to farmers' interests.

These practical solutions are accessed on the BovINE Knowledge Hub (BKH) in visual and text formats, supported by materials including videos and webinars. Multi-lingual materials including animations with sub-titles in 9 languages and bespoke country magazines reduce the barriers to access to innovations and solutions.

Working with farmer member organisations and advisory bodies via our Network Managers, we have worked to embed BovINE links into websites, member newsletters, and social media to ensure on-going access. This is complemented by connections with on-going EU funded projects such as the EU FarmBook, and EIP AGRI.

BovINE has engaged with policy makers to exchange knowledge focused on aspects that link with wider EU policies particularly the Farm to Fork strategy. A dedicated policy session for DGs and appropriate agencies was organised as part of its final dissemination conference, supported by the BovINE Policy Brief available on the project website.

## COST BENEFIT ANALYSIS

The costs and benefits associated with selected good practices from the BovINE process have been assessed by Claudio Montanari and Kees de Roest, CRPA, Italy. Claudio Montanari summarises the approach below with details available on each of the selected practices available on the BovINE Knowledge Hub ([hub.bovine-eu.net](http://hub.bovine-eu.net)). Search for the title shown in the table below.

For the comparison of the costs and benefits of the research innovations and good practices, the typical farm approach has been used, which has been developed in the context of the Agribenchmark Beef & Sheep network (Agribenchmark, 2018). With beef cattle systems, a separation of the production stages into two - 'cow-calf' and 'finishing' - is common in beef producing countries. Typical farms of these two systems are defined here. Beef finishing is focused on beef as the final traded product, whereas cow-calf enterprises focus on the production of weaners as an intermediate product.

The outputs of the cow-calf and beef finishing enterprise are measured in total live weight sold and in total carcass weight produced or sold respectively and costs are expressed in terms of €/kg or €/head sold. Changes in costs and benefits determined by the innovation have been assessed against

the pre-intervention state, utilising the number of farms and the countries in which they are located shown below. The results of the analysis can be found on the BovINE Knowledge Hub in the posts concerning the practices listed here.

Good Practices	BovINE Theme	Finishing Farm - Country locations	Cow-calf Farms Country locations	Number of Farms
Factors able to reduce losses in finishing farms	Animal Health & Welfare	Italy		2
Linseeds to reduce methane enteric emissions	Environmental Sustainability	France, Ireland, Italy		6
Rubber mats on concrete slatted floors	Animal Health & Welfare	Germany, Italy, Poland		8
Squeeze technique for dummy calves	Animal Health & Welfare		France, Ireland, Portugal	8
Slurry distribution with trailing shoe	Environmental Sustainability	Ireland	Ireland	6
Automatic feeding system (AUTOFEED project)	Production Efficiency & Meat Quality	Germany, Spain, Ireland, Italy		10
Automated weight system in finishing farms	Production Efficiency & Meat Quality	Germany, Spain, Ireland, Italy		11
Ceiling fans for reducing beef cattle thermal stress	Animal Health & Welfare	Spain, Italy		5
Managing a defined calving season	Production Efficiency & Meat Quality	Spain, France, Ireland, Poland, Portugal		11
Virtual fences	Production Efficiency & Meat Quality	Spain		2
			Total number Farms	69

# Listening to the Voices of Farmers

## COLLECTING FARMERS' GRASS ROOTS NEEDS (GRNs)

Farmers are willing agents of change to drive sustainability of beef farming across Europe but they need guidance, advice and support to identify the changes that work practically and commercially for their sector – and most importantly how they make those changes. The BovINE network project was designed to listen to farmers, identify and collect their views and needs, prioritise the common topics then find and share solutions.

## COLLECTING GRNs IN PRACTICE

The Grass Root Needs (GRNs) of beef farmers across Europe were collected and captured annually by each of the nine partner countries through a combination of national and regional meetings, workshops, webinars and a variety of events held online and in person.

The Network Manager (NM) from each country organised these events, the nature and number dependent on time and resources available, with one national meeting in the autumn of each year, three in total. NMs used their knowledge, experience and initiative to 'piggy-back' on existing events attended by farmers and their advisers to ensure that they would be able to access practitioners in appropriate numbers. NMs also used their initiative to time online meetings in particular to suit the daily needs of farmers, typically running such events early evening.

The national and regional meetings conducted in their own language were necessary to help overcome this potential barrier of any centrally organised events by the EU project which of necessity would be held in English. BovINE took additional care of this issue in two ways.

First by providing multi-language support at some of its meetings and inviting national farmer representatives to central workshops where they were supported by their own NMs providing translation. Additionally, time and resources were applied by the project centrally and across partners to translate and make available the core and customised materials in each of the nine languages of the project, with national language materials available via the country flags on the home page of the project website.



During these events farmers were asked directly about the challenges they faced in securing greater sustainability of their businesses and sector across the four BovINE themes – Animal Health & Welfare;

Socioeconomic Resilience; Production Efficiency & Meat Quality and Environmental Sustainability. Advisors and all other actors present at these meetings including vets and agribusiness suppliers were all actively encouraged to participate in the discussions.

At these meetings, providing examples of the GRNs already collected at previous meetings in their own country but also in other countries where BovINE has been active provided effective stimulus to the conversation, ensuring a rich collection of content. For some countries this was necessary to draw out the opinions of the farming community not used to sharing their experiences in this way. Estonia provided examples at their meetings from other partner countries to great effect.

Workshops where presenters and facilitators provided knowledge and 'food for thought' first such as those held in the Navarra region of Spain were another successful means of collecting GRNs. In Germany, Ireland and Poland, GRNs were also collected during farm visits, when conversations led to specific challenges and the need for solutions clearly identified.



Whilst the Covid pandemic restricted the ability to meet in person – that is during 2020 and 2021 - meetings and webinars were held online, with participants being invited to share their ideas or challenges via live input during the meeting, and afterwards by direct email.

These online activities did enable a larger number of different beef breeders and producers operating in different geographical areas of the country, or in different time zones, to contribute to these online discussions.

In addition, partners and NMs did find that a greater number and varied selection of expert speakers were able to make themselves available online to support BovINE activities – with their physical presence always being out of the question. So some benefit from the Covid pandemic!

## PRIORITISING FARMERS' GRNs

The full list of GRNs collected by the nine countries over the three years of the project were collated according to the four BovINE themes and by country. This full list is available to view and download on the Home Page of the BovINE website – [www.bovine-eu.net](http://www.bovine-eu.net).

Of course not all of the 200+ GRNs could be addressed by the Technical Working Groups (TWGs) seeking Research Innovations via literature that could be applied to address the issue, or by NMs speaking with advisers and practitioners to find solutions.

Therefore a method and process was devised by the project to ensure equitable and collaborative selection of the Priority Needs on an annual basis with as many held in common across all countries where possible.



# Listening to the Voices of Farmers

A process was established whereby all the GRNs collected each period were collated according to the four themes. Feedback was secured from internal stakeholders to prioritise these topics, taking into account the depth of need in each territory, combined with the feasibility of finding Research Innovations and Good Practices to address these needs. Care was taken to avoid duplication and general topics. Two priority topics per theme were chosen in Years 2 and 3 (see below) with Year 1 topics chosen by the four TWGs.



Year 1	Year 2	Year 3
Long term business planning approaches	Initiatives to improve beef image and to break with the current trend of consumption decline (transparency, raising awareness, short chain, etc.)	Methods to ensure a fairer distribution of the final price along the supply/food chain
Tools & strategies to manage price volatility and cash flow	Examining economically efficient housing systems for beef cattle	The use of alternative feedstuffs to reduce the high costs of raw material for feeding
Health & welfare of new born calves on suckler farms	Simple labour-saving tools/systems to measure and communicate high animal welfare standards on beef farms.	On farm health check of young stock prior to sale/purchase including vaccination status
Lameness of finisher bulls	Animal welfare indicators in rearing and finishing units (ADG, behaviour scores etc.)	Training in animal welfare for operators/farmers and stress-free drive systems during weighing and transport in beef cattle
Animal monitoring tools in the fattening phase	The effect of animal nutrition on meat quality	Tools to evaluate the carcass and meat quality prior to and in the slaughterhouse
Use of available data to improve carcass & meat quality	Optimising the interval between calvings in suckler beef herds	On-farm strategies to increase marbling/ tenderness/colour in beef meat
Reduction in C footprint	Reward schemes for farmers for meeting environmental deliverables such as carbon reduction, biodiversity, water, soil and air quality	Tools for calculating and improving environmental sustainability on beef cattle farms
Improvement in water quality & reduced water use	Carbon sequestration methods (grassland, simplified cropping techniques & potential role of agroforestry)	Methods to enhance biodiversity on beef cattle farms without the need for large investment

## BovINE Network Managers (NMs)

BovINE's Network Managers representing 9 EU countries have led the creation of national networks over the project's three years. In addition to arranging annual network meetings, online and in person, each Network Manager has been engaged in a range of outreach activities from demonstrations to media work. Contact details of all the NM's are available on the website.



**Dirk Audenaert** is an agricultural engineer (Ghent University) and cattle consultant at Boerenbond. He focuses on accounting as an important tool for the farmer to look for the factors affecting profitability on the farm. The beef sector in **Belgium** is unique due to the dominance of the Belgian Blue breed.



**Airi Kõlvet**, member of the board of MTÜ Liivimaa Lihaveise has been a grass cattle farmer in **Estonia** for 20 years. She has introduced sustainable and environmentally friendly farming methods and grazing methods to other beef cattle farmers. Airi is a member of the board of the Estonian Beef Cattle Breeders Association and a member of the Estonian Organic Co-operative.



**Dr Till Masthoff** is the Network Manager for the **German** BovINE network. He is a trained farmer and studied agriculture completing his doctoral thesis on animal welfare. He is a livestock scientist and expert in animal breeding and genetics at the German Cattle and Pig Association.



**Marie Penn** leads the **French** network for the BovINE project. She holds a Master's degree in advanced agronomy obtained in 2012, from Agro-campus Ouest (Angers, France). Marie previously worked in specialist insurance for agriculture and farmers with a particular interest in climate conditions. She has worked for FNB as a project officer since the summer 2017, in Paris.

**Alessandro Mazzenga (PhD)** has been responsible for systems of beef quality and traceability systems at Unicarve since 2009. He is responsible for the **Italian** BovINE network and comments "Thanks to the activities of BovINE, farmers have been able to express their real needs and receive concrete indications."



**Kevin Kinsella** represents the Irish Farmers' Association (IFA) in BovINE and is the Network Manager for **Ireland**. An agricultural science graduate from University College Dublin, Kevin has a great deal of experience working with farmers in the beef sector having served at National and EU level with the IFA for 28 years. He currently runs AgSpace Ltd., an agricultural and agri-business consultancy.



**Jerzy Wierzbicki** is President of the **Polish** Association of Meat Cattle Producers, President of the Polish Sustainable Beef Platform, Chairman of the COPA-COGECA Promotional Policy Working Group. Jerzy who leads BovINE's Polish network is an author and expert on CAP, policies and strategies related to beef breeding and beef production in the whole value chain.



**José Pais** is a Zootechnical Engineer and executive director of the ACBM, **Portugal**. He is responsible for the Genealogical Book of the Mertolenga breed, collaborates with PROMERT (Producers' Group) on beef production, and has contact with the main actors in the cattle sector. In BovINE he has been the Portuguese Network Manager since November 2020.



**Paola Eguinoa Ancho**, Director of the **Spanish** Network, is an agronomist with a PhD in agronomy. Born on a small cattle farm in the Pyrenees, she is currently working at INTIA and has 20 years of experience in R&D projects, mainly in ruminant research.



# BovINE's National Network Meetings

National meetings were held annually over the three years of the BovINE project and were organised by the Network Managers for each of the nine partner countries. Further information and material can be found on each of the country pages on the main BovINE website ([www.bovine-eu.net](http://www.bovine-eu.net)).

## BELGIUM

At the 2022 National Meeting Dirk Audenaert, Riet Desmet and Karen Goossens presented examples of good agricultural practices and innovations from the 8 other participating countries of the BovINE project. Every year, new themes are chosen regarding economy, animal health, environment and production efficiency. It is particularly interesting to exchange ideas and to find out



which themes are also very much alive in other countries. What challenges are the same and what solutions are being sought for them?

40 beef farmers plus researchers and feed consultants were present with the exchange of ideas and information being very instructive. Toon Rombouts from the University of Ghent gave an insight into meat quality. Different systems are in use worldwide to measure this. However, for example, the Australian system (AMS) cannot simply be transplanted to the Belgian situation because of the specific qualities of Belgian Blue Meat. Joris Coenen of VLAM painted a nice picture of beef trade in the world, Europe and Belgium with lowered beef consumption figures due to sharply rising inflation.

## DEMONSTRATIONS

A total of 79 demonstrations were carried out across the four main BovINE themes an example of each is provided here. The objective of these demonstrations which were held on farm, in person or online, was to present and validate knowledge not currently applied on farms.

All demonstrations can be found on the **BovINE Knowledge Hub** (<https://hub.bovine-eu.net/>).

## FRANCE

On October 13, 2022, the 3rd annual national meeting took place in Paris.

During the day, over fifty good practices and innovations identified by France and the 8 other countries participating in the BovINE project were presented on the four priority annual themes relating to Socioeconomic Resilience, Animal Health and Welfare, Environmental Sustainability and Production Efficiency and Meat Quality. Approximately ten farmers from across the various French regions attended the event which given the small numbers, enabled constructive and engaging discussions.

During the meeting, attendees recognised and agreed that across all the four main themes identified by the BovINE project, European countries seem to be working on the same issues, and are often building the tools, or reference systems to respond to them, but work independently. Attendees therefore considered it essential to standardise the work done in each country to ensure future success and recognition on a European and global scale, given the growing societal challenges in the beef sector.



## SPAIN

The BovINE meeting in September 2022 was held during the National Pyrenean Cattle Show, organised by the Confederation of Pyrenean Breed Cattle Associations) in Elizondo, Navarra. Beef herds not only from Navarre but also from other nearby regions participated in this event, as well as numerous visitors, bringing the BovINE project to a wider public.

During the event, Paola Eguinoa, manager of the Portuguese BovINE network, presented on the project, followed by a dedicated workshop with livestock farmers.

Good practices, innovations and demonstrations carried out by the BovINE project were presented. The needs of farmers were identified focused on the major challenge of promoting sustainable beef production, whilst remaining viable due to high and continually increasing input prices.



## PORTUGAL

The 2022 national meeting of BovINE took place in Évora, attended by 53 beef cattle producers and other stakeholders. Magda Fontes, coordinator of BovINE in Portugal, presented on BovINE's methods, actions, information and dissemination.

Bruno Dimas, Deputy Director of the Planning Office of the Ministry of Agriculture, presented on the 'CAP Strategic Plan' and beef farming for 2023-2030. Humberto Rocha, spoke about the importance of engaging all stakeholders, whilst José Pais identified good practices and innovations available on the BovINE Knowledge Hub (BKH). Attendees were shown how to access the wealth of information on and use of the BKH and the project's YouTube channel.

Coffee and lunch breaks allowed further development of the network and fruitful discussions.



## ITALY



The national event in 2022 was a webinar attended by 57 cattle breeders, consultants and stakeholders, first summarising BovINE activities and available knowledge. Kees De Roest of CRPA focused the discussion on the vaccination of imported beef cattle, supported by Dr. Eliana Schiavon from the Istituto Zooprofilattico delle Venezie. An Italian breeder from Alessandria, assisted by his company veterinarian, shared information on the agreements they have with French breeders for vaccination on their farms prior to importation. A comparison between research and application of vaccination in farmers' daily management followed. The final questionnaire confirmed that vaccination is a critical matter

## Environmental Sustainability - The use of extruded linseed to decrease CH4 emissions



In Belgium at the Fines cattle farm in Glabbeek, linseed is used in the feed to reduce methane emissions by decreasing ruminal organic matter fermentation and thus reducing the impact eventually on climate. The video of this demonstration can be found on the BKH.

## Animal Health & Welfare - Infrared thermography for diagnosis of lameness



Studies have suggested that elevated claw temperature, detected using infrared thermography, is a potentially useful technique for detecting lameness. This technique was used successfully in an 'on-farm' demonstration in Germany to diagnose lameness at an early stage.



# BovINE's National Network Meetings

## ESTONIA

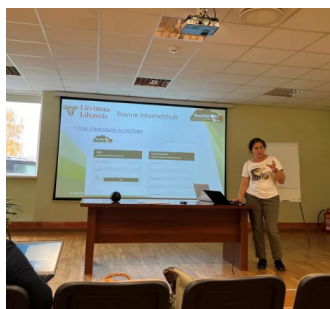
The Estonian BovINE national meeting was held on 18 October 2022 in Tartu at the Estonian Breeders' Association. Thirty-three people attended the event, which included farmers, beef cattle advisors, veterinarians and research partners.



Airi Külvet, Director of the NGO Livonia Meat Cattle and BovINE Estonia Network Manager, opened the meeting, presenting a cross-section of good practices and research innovations collected over the three years of the BovINE project. Of particular interest to attendees was the presentation on the farmer's

reward on meat labels, the "Remunera score" and the scientific innovation on the effect of vitamin A on the formation of marble. Guest speakers Jane Mättik, chair of the Estonian Beef Cattle Breeders' Association and Arne Tuhkuri, sales manager from AS AS Dimedium, Veterinary Surgeon, also gave presentations during the day.

The presentations focused on the latest support measures available for Estonian beef cattle farmers and a secure cattle pheromone product with samples being distributed amongst attendees.



He also gave a preview of the soon to be published Bovine Magazine. He appealed to the participants to actively use the Knowledge Hub and to spread the word about the Bovine Magazine once it is published.

The response to the two and a half hour online event was very positive, especially the presentations on animal health apps by Lena Lindau and the possibilities of disease prevention by Mr Sebastian Hofsommer which were met with great interest.



## GERMANY

At the 2022 National Meeting, network manager Dr Till Masthoff (BRS) introduced BovINE and gave an overview of the work done so far. This was followed by a presentation by Sebastian Hofsommer (Boehringer-Ingelheim), who spoke about disease prevention in cattle farms. Lena Lindau (BRS) then presented selected good practices and research innovations to the audience.

Martina Wutke (BRS) presented the BRS project "Rinderfakten" (Cattle Facts) to give suggestions for public relations work. Then Lena Lindau, who got to know these apps while working on the BovINE demonstrations, presented two apps for animal health assessment. Dr Till Masthoff closed the event by presenting the use of the Knowledge Hub.

## Production Efficiency & Meat Quality - Feeding in the first third of pregnancy



The benefits of feeding in the first third of pregnancy to optimize the cow-calf performance was presented to farmers and other guests on 12th of May 2022 during a visit to La Garcipollera Experimental Farm, Bescós Spain. Poor nutrition is common in beef cattle production systems.

## POLAND

The Polish BovINE national meeting was held on 24 October 2022 at a farm in Winniki (Mazowieckie Voivodeship). The main objectives of the meeting were to present the current status of the BovINE project and its results, to present how Bovine knowledge can be used in daily work, and to present and discuss examples of good practices and European innovative solutions that have already been incorporated into the Bovine Knowledge Hub by all partners.

The meeting was attended by 27 people representing actors from across the beef value chain. The meeting was chaired by Jerzy Wierzbicki, President of the Polish Association of Meat Cattle Producers and National Bovine Manager. He also presented the current status of project implementation and results. It was also presented how to use the Bovine Knowledge Hub knowledge base most effectively. duction was discussed in the context of regulatory and market changes.

This was followed by Professor Marcin Gołębiewski from the Warsaw University of Life Sciences, who presented good practices and innovative solutions to overcome problems and challenges faced by Polish breeders. During an open discussion, the future of Polish beef production was discussed in the context of regulatory and market changes.



## IRELAND



Innovations for beef farmers such as the use of agro forestry in organic farming, health protocols and beef price transparency were key issues discussed by BovINE at the Irish Network meeting held October 2022. Attended by over 90 farmers and other stakeholders, Dr Maeve Henchion, Project Co-ordinator presented on the results of the BovINE project over the last 3 years.

Pearse Kelly, Teagasc Head of Drystock presented on the importance of innovation on beef farms, highlighting the increased uptake by beef farmers in recent years of technologies such as genotyping and LESS (Low emission slurry spreading). Clive Bright, an Irish organic beef farmer gave an overview of his 100% grass-fed beef production system. Buyers of Irish weanlings, Italian brothers, Alessandro and Paolo Vigna, told their story of finishing Irish born cattle in Italy. Helen Fuchey from the French Livestock Institute, IDELE explained the 'Remunera Score label' just rolled out on beef products for sale on French supermarket shelves.

Kevin Kinsella, BovINE network manager, moderated lively discussion with many questions and comments from farmers.

## Socioeconomic Resilience – Compost Barn for beef cattle



A German farmer who has a compost barn system, an interesting cattle housing solution to emerge in recent years. shared his experiences and knowledge of such a system, via zoom, with interested farmers of a working group. Images and video material were shared with the group.

## DEMONSTRATIONS

2022, BovINE's last year, was full of activity with the delivery of 79 demonstrations across all 9 BovINE countries many on-farm, but also in the form of round table workshops and on-line discussions.

The final annual national meetings in 2022 ensured that all network members were familiar with how to access the considerable body of BovINE knowledge now available.

The 'On Farm' Practice Abstracts, solutions validated by the BovINE process, are all available on the BovINE Knowledge Hub organised via the project's four themes. Here, to provide a 'taster' of the content available, is a selection of eight solutions, two for each of the four themes.

*"The good practices and innovations on the BovINE Knowledge Hub are great practical examples of how individual farmers can find solutions to the challenges they face and benefit from the project."*

**Brendan Golden, National Livestock Chairman, IFA, Ireland**

## ENVIRONMENTAL SUSTAINABILITY

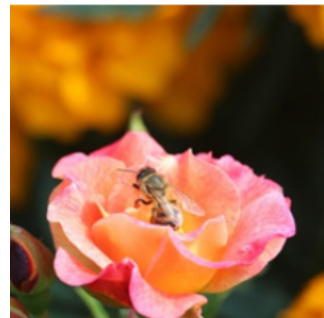
The goal of the Environmental Sustainability (ES) theme within the BovINE project was to improve the environmental sustainability of the European beef cattle industry at the farm level. Here are two examples from the BovINE Knowledge Hub.



### CAP2ER tool for measuring environmental sustainability

A new tool developed by the French Livestock Institute, IDELE, aims to carry out a rapid assessment of environmental performance on beef farms. Through a decision support tool advisors /consultants carry out a detailed assessment of the environmental footprint, identify areas for improvement and build action plans.

The tool is unique in that it has over 170 indicators and includes not only GHG intensity of the unit and the effect on biodiversity and carbon storage. All three pillars of sustainability - economic, social and environmental - are taken into account.



### Pollinating insects & biodiversity

The presence of wild pollinating insects on livestock farms, associated with the maintenance of areas with spontaneous vegetation and hedgerows improves biodiversity and pollination activity, enhancing better production and variety of pastures and quality of crop harvests. Strategies such as insect hotels, creation of flower or unmown vegetation strips, increasing of auxiliaries like birds and bats, can enhance farm biodiversity without the large investment. Most plants, including grasslands, depend on pollinating insects for their production. Favouring pollinating insects is part of good agricultural practice. Maintaining their populations improves productivity and reduces the use of chemicals. A balanced pollinator population drives resilience to climate change and maintains a rich seed bank.

## ANIMAL HEALTH & WELFARE

The goal of the Animal Health and Welfare (AHW) theme within the BovINE project was to improve animal health and welfare amongst cattle in different beef production systems in Europe. Here are two examples from the BovINE Knowledge Hub.

### The Madigan Squeeze technique for dummy-calves

The Madigan Squeeze technique is used in newborn calves with neonatal maladjustment syndrome (dummy calves). The calves are subjected to physical compression around the chest and abdomen with a soft cotton rope (approximately 3 cm wide), for about 20 minutes. This compression induces a slow wave sleep and hormone changes similar to what occurs during delivery when there is a neonatal transition from neuroinhibition to neuroactivation. The calves are then awakened, and the rope removed. They get up after a few seconds and walk towards the dam to suckle. They then behave like a normal new-born animal.



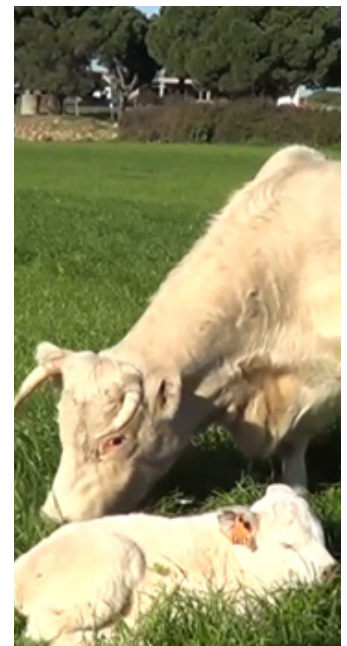
### Scoring vitality in newborn calves

It is difficult for beef farmers to ensure that newborn calves are receiving adequate and sufficient quality colostrum and care.

Proposed parameters for scoring the vitality in newborn calves are respiration rate, hair coat appearance, no peripheral edema, mucous membranes, response to reflex stimulation, muscle tone, heart rate, rectal temperature.

There are also parameters that can be assessed without touching the calf such as time until head lift, sternal recumbence and after 20 minutes there should be the first attempts to stand. Calves that deviate from these values need help.

Similar tests of newborn vigor have been developed for other species.



*"Promoting and ensuring animal health and welfare is not only an economic asset, but also an ethical requirement. It is now very clear that the implementation of good practice is essential for the public acceptance of animal production"*

**George Stilwell, Associate Professor at FMV-UL - Portugal**

**Cédric Mandin, a farmer in the Vendée, France is aware of the issue of climate change and water and notes BovINE's environment theme on water use and quality.**

*"I think that the BovINE project is an opportunity to share innovative solutions, especially with countries that are more advanced than us on these issues, such as Spain, Italy or Portugal."*



The Bovine Knowledge Hub (BKH) houses 477 posts, related to 340 separate research innovation and good practice topics. The range of topics covered has ensured that the numbers visiting the BKH increased during the funded period. To boost awareness, Minerva initiated the BKH Awareness Month (September 2022) which resulted in over 1,100 new visitors. That growth has continued as, at March 2023, there have been 5,345 unique visitors, breaking through the internally set target

of 4,000. Hub analytics reveal that the average time spent by visitors is over 5.5 minutes, accessing 6 pages each demonstrating that the site is being explored, supported by its easy navigation and user interface. Whilst the BovINE project has ended, the BKH and BovINE website remain open and accessible for a number of years. The knowledge contained is also available via partner websites, farming membership organisations, EIP Agri website and other online portals.

## PRODUCTION EFFICIENCY & MEAT QUALITY

The goal of the Production Efficiency and Meat Quality (PEMQ) theme within the BovINE project was to improve the production efficiency at the farm level in the European context while considering meat quality. Here are two examples from the BovINE Knowledge Hub.

### Meat@ppli – a smartphone application to determine the fat content of beef in real time

Marbling contributes to the economic value of carcasses and meat in some countries, where high scores is usually related to higher values. In Europe, the mandatory classification of carcasses implies conformation and fatness scores, but not marbling. In recent years, however, interest in marbling is growing. From 2017 to 2021, the Meat@ppli project aimed to develop an application for smartphones for fat measurement in a piece of meat at the carcass stage, in real time, in a reliable, economical and non-destructive way. The automatic image analysis algorithms were integrated into the Meat@ppli

application which estimates in real time the fat content of the 6th rib of a beef carcass from its photo. As result, the correlation coefficients were 0.91 and 0.79, respectively, for the prediction of marbling and rib fat, in relation with the gold standards measurements.



### Individual temperament evaluation in young bulls by an exit score from the squeeze chute

The occurrence of dark, firm, and dry (DFD) meat causes significant financial losses globally in the fresh meat market. In young animals, dark cutting is usually associated with the depletion of glycogen from muscle stores prior to slaughter.

This has been related to a multitude of factors, including animal temperament and aggressiveness (Ponnampalam et al, 2017). To face this issue, a simple system for the identification of problem animals was implemented on a beef cattle farm located in the south of Portugal.

This method is conducted during the performance test of young bulls that are candidates for future breeders, with the aim to select animals that are less susceptible to stress.

The individual assessment consists in a measure of the animal gait from the squeeze chute where it was weighed and identified based on the method described in Veters et al., 2013. The animal can exit walking, trotting, or running, conditioned by their temperament and reaction to handling.



## SOCIOECONOMIC RESILIENCE

The goal of the Socioeconomic Resilience (SR) theme within the BovINE project was to improve the economic sustainability of beef farmers in Europe. Here are two examples from the BovINE Knowledge Hub.

### Contracts between beef producer and buyer based on the market and controlled by a third actor

The idea for contracts came from the awareness of the difficult relations between producers and buyers, the instability of market, the idea to share the profit or the loss, and as way to program the activities of both operators. It was planned by the farmers' association, agreed with farmers and some slaughter operators, and presented to all operators in open meetings and already applied on few occasions. The association Unicarve acts as a third body to monitor the activity during the contract period and the compliance with the agreements laid down in the contract.

The contract takes into account the market trend of prices of the major feeding ingredients during the period of the contract, and the market prices of animals at the end of finishing. The aim of the contracts is to share the profit or loss between the operators involved.



### Automatic Feeding System (AFS) for beef cattle farm

Labour shortage, the optimisation of energy use and the need for precision feeding to reduce feed waste are major challenges for beef cattle farms. The usage of automatic feeding systems in cattle offers multiple advantages, primarily due to the possibility of an increased feeding frequency. Initially it is a substantial investment, but the economic benefits in terms of a higher feed efficiency, less energy use (no more diesel fuel to run the mixing wagon) and a lower labour input are significant.

A further benefit is that during the administering of the feed by the AFS much less noise is produced. Animals are therefore less stressed. Furthermore, the better feed efficiency has a positive impact on the carbon footprint of the farm.



**Luca Pengo**, a farmer from the province of Padua, Italy, commenting on the sharing of information on new technology and techniques via BovINE, says: "Automatic devices that are able to record the animals' weight gain and feed intake would help me a lot to monitor the efficiency of my farm and intervene quickly where necessary."

**Tomasz Rasinski**, Cattle Producer, Mazovia region Poland. "The BovINE knowledge hub is something very useful because I can find answers to my problems and questions. The BovINE project is really important for the whole beef sector in Europe, but also for me personally. I've had some really great experiences so far... some of them have helped me with my production."



The BovINE Knowledge Hub (BKH) contains all the 'solutions' (Practice Abstracts PAs) identified via the process set up for partners to explore both research innovations (RIs) and good practices (GPs) with reports about 'on farm' demonstrations set up to further validate selected practices. The BKH (hub.bovine-eu.net) is connected directly to and from the main website at a number of points ensuring that all website visitors are 'nudged' and enabled to visit the BKH thus ensuring that both the website and BKH build visitor numbers.

The BKH now houses 477 posts, related to 340 separate topics covering all the good practice abstracts, guidelines, first-hand experiences from farmers in both written and video documentary style case studies, photos, infographics, data sets and links to key websites with further information on topics such as regulations.



## CATALOGUE OF PRACTICE ABSTRACTS

<https://www.bovine-eu.net/themes/catalogue-of-abstracts/>

The Catalogue of Practice Abstracts (PAs) document provides a mirror copy of all PAs on the BKH, with over 470 items.

It can be viewed and accessed from the BovINE Knowledge Hub and website. Between 2020-2022, BovINE partners identified and validated innovations and good practices for direct use by beef farmers across Europe and beyond, and these are all listed in the catalogue.

The PAs included in the catalogue are a 'mirror copy' of the entries in the BovINE Knowledge Hub (BKH). The main aim of the catalogue is to ensure a separate record of the titles and content generated by BovINE in order to share it offline.

Organised according to the four key themes utilised by the BovINE project – **Environmental Sustainability, Production Efficiency and Meat Quality, Socioeconomic Resilience, Animal Health and Welfare** - the catalogue provides a comprehensive overview of the project's work.

<https://hub.bovine-eu.net/>

BovINE ON FARM PRACTICE ABSTRACTS



### BovINE ON FARM PRACTICE ABSTRACTS (PAs)

The PAs listed in this document are the innovations and good practices identified and validated by BovINE partners 2020-2022 for direct use by beef farmers across Europe and beyond. The listings of the PAs contained here are a 'mirror copy' of the entries contained in the BovINE Knowledge Hub (BKH) accessed at <https://hub.bovine-eu.net/>. The aim of this document is to ensure a separate record of the titles and content generated by BovINE. It is available as a stand-alone document on the BovINE website [www.bovine-eu.net](http://www.bovine-eu.net).

#### How to use this document

This document is organised according to the four key themes utilised by the BovINE project – Environmental Sustainability, Production Efficiency and Meat Quality, Socioeconomic Resilience, Animal Health and Welfare.

Each theme is organised by topic area and then alphabetically, according to the first word of the title of the 'on farm' PA as it appears on the BKH. All of the PAs are annotated with extra information provided by a 'Key' explained on page number 2 to show the characteristics of each PA. Each listing of the PAs provides a direct link to the online BovINE Knowledge Hub where the full abstract can be viewed.



Front cover of the BovINE magazine to be published early 2023



This project has received funding from the European Union's Horizon 2020 rural renaissance programme Project No: 862590 under call H2020-RUR-2019-15

Furthermore, 96 PAs were sent to EIP-Agri for upload to their online portal and are identified in the Catalogue. The Catalogue also includes BovINE webinars with linked content and other relevant materials.

Overall, the Catalogue of Practice Abstracts (PAs) is a comprehensive resource for beef farmers looking to enhance their knowledge and improve their practices in line with the themes of the BovINE project.

Catalogue of Practice Abstracts document can be viewed online and also downloaded as a pdf and shared offline.

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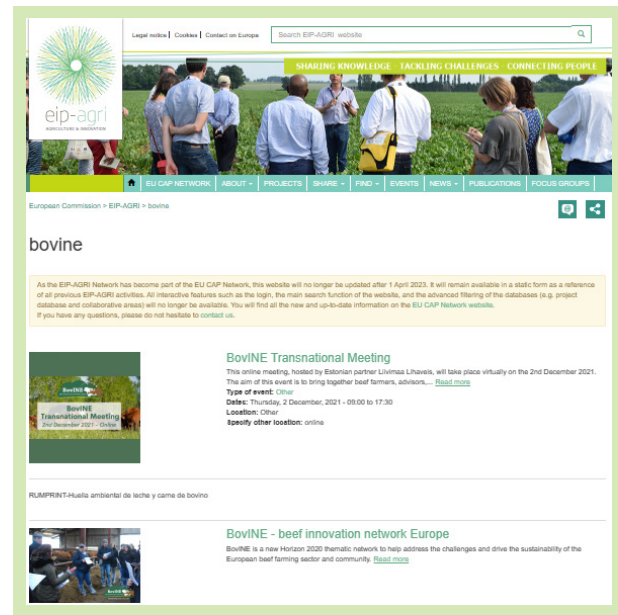
EIP AGRI

<https://ec.europa.eu/eip/agriculture/en/find-connect/projects/bovine-beef-innovation-network-europe>

Of the 477 individual practice abstracts (PAs) created by BovINE covering 340 individual topics, 96 were selected for submission to the EU's EIP AGRI service point, more than the 88 agreed in the project's contract and description of work. 24 PAs were selected from each of the four themes, ensuring a representative cross-

section of the topics addressed. These were submitted to EIP Agri in three phases in years 2 and 3 of the project and once agreed were uploaded to the dedicated BovINE page on the EIP AGRI website. In addition, BovINE has been featured in a number of EIP AGRI's newsletters focused on sustainability.

*Note that the EIP AGRI website is no longer updated as it has been merged with the EU CAP Network. All information remains available. [https://eu-cap-network.ec.europa.eu/index\\_en](https://eu-cap-network.ec.europa.eu/index_en)*



BOVINE WEBINARS

[www.bovine-eu.net](http://www.bovine-eu.net)

WEBINAR	THEME	SPEAKER
Risks factors associated with beef cattle losses on intensive fattening farms	Socioeconomic Resilience	Kees de Roest, CRPA, Marta Brscic, University of Padova
Methods of assessing the vitality of new-born calves and the benefits for suckler farms	Animal Health and Welfare	Frank Zerber, Dr John F. Mee, Teagasc and Anna-Lena Lindau, BRS
Strategies to reduce enteric emission from beef production	Environmental Sustainability	Riet Desmet, ILVO, Karen Goossens, ILVO, Gemma Miller, and Joni Van Mullem, ILVO
Virtual fence to manage beef cattle	Production Efficiency and Meat Quality	Virginia Resconi, University of Zaragoza, Prof. Alfonso Abecia, University of Zaragoza and Russ Carrington, Knepp Estate
Tools to measure & communicate high welfare standards on beef farms.	Animal Health & Welfare	Kornel Cimer, Beatrice Mounaix & George Stilwell
Future and Forward Contracts. What if we could guess the future?	Socioeconomic Resilience	Pedro Rino Vieira & Tomás Machado
Why feed Efficiency Matters	Production Efficiency and Meat Quality	Virginia Resconi, Jakeline Romero, José Pais, Lisa Rumsfeld, Pablo Guarnido, Paul Smith & Sinead Waters
Carbon Sequestration	Environmental Sustainability	Riet Desmet, Paul Pardon, Helene Chambaut & Ennio Facq
Automatic Feeding Systems - AUTOFEED	Socioeconomic Resilience	Massimo Brambilla, Ambra Motta
Training in Animal Welfare	Animal Health and Welfare	George Stilwell, Luar Reis Nel, Isa Kernberger-Fischer, Beatrice Mounaix, Melissa Naldo & Diana Valente
Marbling in European Beef Cattle	Production Efficiency and Meat Quality	Ryan Law, Aubert Nicolazode de Barmon, Isabelle Legrand & Jean-Francois Hocquette
Biodiversity & Agriculture	Environmental Sustainability	Robbert Scheepers, Jose Pereira & Jane Debode

Webinars, purposefully planned into BovINE's work programme by Minerva Communications UK, proved extremely successful and popular in 2021 and 2022 in terms of extending the project's reach to stakeholders and securing engagement.

12 webinars, three for each of the four BovINE themes, were produced by Minerva with the theme leaders choosing topics and recommending speakers. Promotion of the webinars direct to the project's growing database of engaged actors and stakeholders (c. 2,200), supported by social media posts and partners' communications, secured an average of 60 attendees at each of the 'live' presentations. The 1,500+ individuals who registered for the webinars each received a follow-up email and direct access to the recording of the webinars of interest.

Particularly popular webinars were all those covering animal welfare, carbon sequestration, marbling of beef meat, encouraging agricultural biodiversity and feed efficiency. All BovINE webinars are available to view via the project's website and on BovINE's YouTube channel, with total views to date exceeding 88,000.

<https://www.youtube.com/@bovine6973>

ANIMATIONS

[www.bovine-eu.net](http://www.bovine-eu.net)

To enhance access to BovINE's knowledge a range of visual materials has been created. Eight animations have been created on topics selected to cover the priority needs and concerns as expressed by farmers across the 9 European countries.

- 1.Improving on-farm biodiversity
- 2.Improving the quality of beef meat

- 3.Economically efficient beef housing Systems
- 4.Animal health and welfare checks
- 5.Long term financial planning approaches
- 6.Reducing lameness in beef cattle
- 7.Optimising the number of calves/cow per year
- 8.Methods to reduce nutrient leaching on Beef farms



# BovINE's Outreach Activities

BovINE has used a wide variety of activities and channels to extend the project's reach to targeted stakeholders not only in regions and countries but also pan-Europe and beyond. The aim? To ensure that the knowledge and practical solutions generated is reaching the farmers, advisers and specialists most in need of that knowledge. After a successful kick-off meeting, BovINE partners adjusted actions to accommodate the challenges of Covid 19, reverting to more 'in person' actions in 2022. A selection of activities are featured below from social media successes to farm visits.

## Estonia - Network manager featured by EIP AGRI

In July 2022, Airi Klvet, head of the Estonian network, was featured in an EIP AGRI press article focusing on her work on transforming grassland grazing into a climate solution. "Airi manages a 300 hectare organic livestock farm with mainly grassland. Her livestock are 100% grass-fed. The farm's grazing system helps to restore soil, increase biodiversity..."



## LINKED PROJECTS

BovINE Network partners have been active in creating and managing links with many other projects working in livestock farming and sustainability. Reciprocal links have been established with many ensuring knowledge exchange is sustained. The list below records many of these established links.

AUTOFEED	
InnovaBioZoo	
COPA COPEGA	
European Round Table for Beef Sustainability	
EUFRAS	
IALB	
DAWN MEATS Sustainability Programme	
Teagasc Signpost Programme	
Inishowen Upland Farmers	
Devenish Heartlands	
IFA Smart Farming	
Teagasc Future Beef	
Farm Zero C	
Nefertiti H2020 Project	
Life Carbon Farming	
Automated Weight project in Navarra	
GOBOV+	
Ploutos	
ILVO Rundveeloket	

## Spain - International Fair

The Spanish BovINE team was present at the 15th International Fair for Animal for Animal Production (FIGAN) in Zaragoza september 2021. At this fair, the European projects BovINE and Dietapyr2 (Poctefa144\_16) organised "Innovations in beef cattle production", with the participation of guests from Unizar, the University of Cordoba, the company Gepisa and CONASPI. Finally, in the Dietapyr2 session, the researcher linked to this project presented the results obtained.



## Ireland - Farmers Journal Tullamore Farm



Over 5,000 farmers attended the Irish Farmers' Journal Tullamore Farm Open Day on July 26th 2022 and many engaged directly with the BovINE team discussing the challenges and opportunities facing the beef sector. There was a keen interest in the BovINE Knowledge Hub and how Irish farmers could find practical solutions from fellow farmers in other EU countries.

## Germany - Young Breeders Competition of Beef Cattle

At the Bauernmarkt of the agricultural research centre of Haus Dsse on 11 September, participants of the Federal Young Breeders Competition of Beef Cattle were informed about the BovINE project by the veterinarian Anna Lena Lindau in the context of a barn aisle talk. In particular, veterinary topics such as the "Gentle Touch Technique" and the Madigan Squeeze Technique were of interest to the young farmers. The farmers' market was attended by a total of about 11,000 people.



## Poland - Media coverage

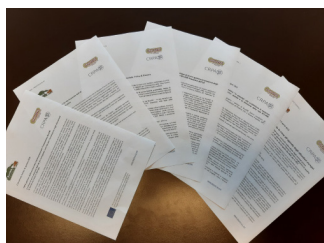
During the implementation of the project, the Polish BovINE network gained significant popularity in the media, and articles appeared in, among others, TopAgar, Agronomist, Agrarlex Polska, Świat Rolnika and Agro Profil.



## Italy - Published Articles

Thanks to national media partner *Informativa Zootecnica*, five technical articles were published, all available on the BovINE project page of the CRPA website (www.crpa.it):

1. Rubber mats improve performance
2. Beef cattle, fats to reduce methane emissions
3. Cattle, networked research and innovation
4. BovINE project, support to cattle breeding
5. Two new beef cattle breeding projects launched by CRPA



## Portugal - Evento Temple Grandin

Temple Grandin is a world renowned expert on cattle behaviour and welfare. BovINE together with a scientific dissemination company (FarmIn) organized two sessions to hear and talk to Temple Grandin (june 2022). The first meeting had an assistance of more than 70 farmers and technicians. George Stilwell, from BovINE, gave a talk presenting Grandin's work. On the next day 30 beef farmers joined Temple Grandin to discuss husbandry and cattle management topics. This was followed by a visit to an Angus suckler beef herd.



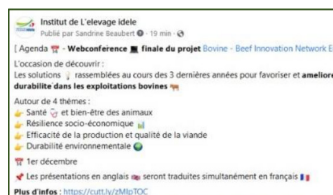
## Belgium - Article in local magazine

In Flanders, we published an article in October 2022 in *Drieland* on different good practices and research innovations from the various European regions. Solutions were selected of more interest for Flemish farmers.



## France- Social media

A BovINE leaflet produced by the Idele team was disseminated at a number of beef farming and agriculture events as described below and also disseminated via Facebook, LinkedIn, Instagram & Twitter September to November 2022.



**BovINE consortium on farm visit  
Pamplona, Spain, November 2022**



**BovINE Project Partners**

<b>Teagasc - Agriculture &amp; Food Development Authority (Ireland)</b>
<b>Feirmeoiri Aontuithe na h-Eireann Iontaobhathe Teoranta LBG (Ireland)</b>
<b>Centro Ricerche Produzioni Animali - C.R.P.A. s.p.a. (Italy)</b>
<b>Unicarve - Associazione Produttori Carni Bovine (Italy)</b>
<b>Institut de l'Elevage (France)</b>
<b>Fédération Nationale Bovine (France)</b>
<b>Universidad de Zaragoza (Spain)</b>
<b>Instituto Navarro de Tecnologías e Infraestructuras Agroalimentarias SA (Spain)</b>
<b>Szkola Główna Gospodarstwa Wiejskiego (Poland)</b>
<b>Polish Beef Association (Poland)</b>
<b>Faculdade de Medicina Veterinária (Portugal)</b>
<b>ACBM - Associação de Criadores de Bovinos Mertolengos (Portugal)</b>
<b>Eigen Vermogen van het Instituut voor Landbouw- en Visserijonderzoek (Belgium)</b>
<b>Boerenbond (Belgium)</b>
<b>Friedrich Loeffler Institut - Bundesforschungsinstitut für Tiergesundheit (Germany)</b>
<b>Bundesverband Rind und Schwein e.V (Germany)</b>
<b>Minerva HCC Ltd (UK)</b>
<b>NPO Liivimaa Lihaveis (Estonia)</b>

**STAY IN TOUCH**

**WEBSITE:**

[www.BovINE-eu.net/](http://www.BovINE-eu.net/)

**KNOWLEDGE HUB:**

[hub.BovINE-eu.net/](http://hub.BovINE-eu.net/)

**SIGN UP TO THE E-NEWSLETTER:**

[eepurl.com/g83qUP](http://eepurl.com/g83qUP)

**FACEBOOK:**

[www.facebook.com/BovINEeu](http://www.facebook.com/BovINEeu)

**TWITTER:**

[twitter.com/BovINE\\_eu](https://twitter.com/BovINE_eu)

**INSTAGRAM:**

[www.instagram.com/BovINE\\_eu](http://www.instagram.com/BovINE_eu)

**YOUTUBE:**

[www.youtube.com/channel/UCmrrerYiv0b9G-Mez05A5-pVg](http://www.youtube.com/channel/UCmrrerYiv0b9G-Mez05A5-pVg)

*Inside covers caption:*

The photo shows the Simmental breed of cows and a pedigree bull and one red Angus cow in a natural meadow in Jõgeva county, Estonia, on Airi Külvet's farm. The photo was taken in 2020 on 20 June by a professional photographer who is also a beef cattle farmer herself.

*Photo credit: Mariliis Kutsar*

**BovINE Magazine produced by Minerva Communications UK  
Editor: Rhonda Smith [rhonda@minervacommunications.net](mailto:rhonda@minervacommunications.net)**



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