Low-Input Farming and Territories

Integrating knowledge for improving ecosystem-based farming

LIFT 4th Annual Newsletter

March 2022

PROJECT'S PROGRESS

LIFT project goal: to identify and understand how socio-economic and policy drivers impact on the development of ecological approaches to farming and assess the performance and sustainability of such approaches, taking into account different farming systems at farm, farm-group and territorial scales.

Research consortium: 17 partners from 12 European countries.

Duration: 48 months, from May 1, 2018 till April 30, 2022.

The **final year of the LIFT project** (May 2021 - April 2022) results in numerous scientific and practical outputs shared among stakeholders and general public. This newsletter overviews key project results, while the full outputs are downloadable via links provided or are accessible through the LIFT website.

Despite the pandemic situation the LIFT project keeps achieving its goals and building a better understanding of drivers influencing the uptake of ecological approaches in European farming. This newsletter presents published results from the project covering **ecological farm typology** and **drivers of adoption of ecological approaches** (page 2), **farm technical-economic, private-social and environmental performance** (page 3), and **employment effects of ecological farming** (page 4). **Territorial-level analyses** of ecological farming covering spatial dependencies in patterns of its adoption are presented (page 4), along with the **socio-economic and environmental impacts** (page 5). Next, the outputs focusing on **farm, farm-group and territorial level impact of policies** on the adoption of ecological approaches and the **performance and sustainability** of ecological agriculture (page 5), as well as **innovative public and private measures to encourage the adoption of ecological practices** and enhance the performance and sustainability of ecological agriculture (page 6) are described.

Key project practical outputs beneficial for the general public are the **LIFT Typology Tool**, the **LIFT Adoption Tool** and the **LIFT MOOC (**page 8), along with the **LIFT EcoFactsheets** presenting key information about ecological farming in selected case study areas (page 9).

In addition to the project results presented in this newsletter, by the end of the project four more major reports will be made available to the public through the LIFT website: 1) Farm **level sustainability** of ecological farming; 2) **Territorial sustainability** of ecological farming; 3) **Synergies between farm level, farm-group and territorial sustainability** of ecological farming; and 4) How to **improve the adoption, performance and sustainability** of ecological farming. Also, a **policy brief on adoption of ecological approaches in European farming** will be published.

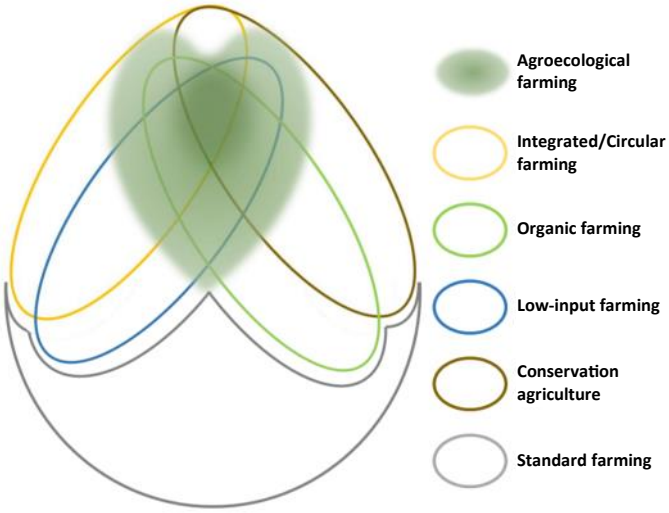
This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 770747

LIFT deliverable: D1.4. LIFT farm typology developed, tested and revised, and recommendations on data needs.

This report presents the final version of the LIFT farm typology, together with a system of rules to assign individual farms to one or more of the developed categories. These sets of rules, together with the set of data on farming practices to which they apply, have been named 'Protocols'.

The typology is defined as a combination of two main elements: type of farm and farming approach. The type of farm characterises the farm in terms of main production and specialisation and uses the nomenclature defined by Eurostat. The farming approach is a classification applicable to individual holdings based on their type of management, assessed from an ecological perspective. Classifying farms according to a defined typology is a necessary step in the LIFT project, in order to carry out subsequent statistical analyses and investigate drivers and obstacles in determining the adoption of ecological farming practices, or to study environmental performances vis a vis other socio-economic aspects.

Farming approaches have been identified considering four main ecological dimensions of farming: i) soil conservation; ii) overall input intensity; iii) internal integration and circularity; iv) ecological infrastructure. Building on these, six main farming approaches have been defined: 1) Standard farming; 2) Conservation agriculture; 3) Low-input farming; 4) Integrated/Circular farming; 5) Organic farming; 6) Agroecological farming. Standard farming is mutually exclusive with respect to the other five farming approaches, while the latter are not mutually exclusive.



Schematic representation of the farming approaches of the LIFT farm typology
Authors: Rega et al., 2021, LIFT D1.4

LIFT deliverable: D2.3. Drivers of adoption of ecological approaches.

The report presents the results of a series of investigations around the uptake of ecological approaches across the value chain. Primary and secondary data collected utilising a number of methods were used, built on conceptual frameworks developed within LIFT and elsewhere. This provides a range of empirical investigations for an overview of farming, supply chains and consumption drivers which may constrain or enable uptake of ecological approaches. Both exogenous and endogenous drivers were considered for these studies. The report is presented as a set of summaries from academic paper outputs - to show the individual exercises across farmers, value chains and consumers – and to understand both the barriers and enablers for a transition to more ecological approaches within European farming.

Overall, much heterogeneity was found in both practice and attitudes towards production and consumption of ecological approaches. The investigations presented provide illustrations of how these approaches and perceptions are driven by both personal, informal and formal institutional influences, such as the support from local market conditions or sharing of knowledge. This leads to understanding the relationships between economic and non-economic goals, which are key to an eventual uptake of ecological approaches. Incentives were considered to balance the conflicts between endogenous and exogenous drivers, such as labelling and support for social incentives, but also as a means to overcome perceived or real barriers through mechanisms which support further collaboration between farmers.

LIFT deliverable: D3.1. Farm technical-economic performance depending on the degree of ecological approaches.

The overall aim of the analysis is to assess and compare technical-economic farm performance across the European Union (EU) depending on the degree of ecological approaches adopted by farms and analyse drivers, affecting their performance. The deliverable thus consists of several academic papers, focussing on a range of different case studies, applying a wide range of methods, which can most generally be divided into empirical econometric approaches and bio-economic models.

Various approaches to differentiate farms according to the degree of ecological approaches adopted were explored, including the LIFT farm typology and other strategies. Overall, results show that the wide variety of farm types and biophysical, socio-economic and political framework conditions present in the EU matter; results of comparing technical-economic farm performance (depending on the degree of ecological approaches adopted), as well as with respect to drivers of farm technical-economic performance, are heterogenous.

LIFT deliverable: D3.2. Farmer private social performance depending on the degree of ecological approaches.

Social performance is the pillar of sustainability that is most often neglected, compared to the evaluation of environmental and economic performances of farming systems. Farmers' working conditions are rarely studied. To understand farmers' working conditions and to assess them, it is necessary to develop a multicriteria approach including not only quantifiable dimensions (e.g. the length of working days) but also dimensions that can explain how working conditions are experienced by workers (e.g. by understanding the factors underlying farmers' working conditions).

These factors include the composition of the workforce, the region, but also the degree of uptake of ecological practices. This deliverable contributes to knowledge on this issue, with the main objectives being: i) to describe farmers' and farm workers' working conditions in different farming systems characterised by different degrees of uptake of ecological practices and; ii) to identify factors explaining these working conditions (degree of uptake of ecological practices, workforce composition, country).

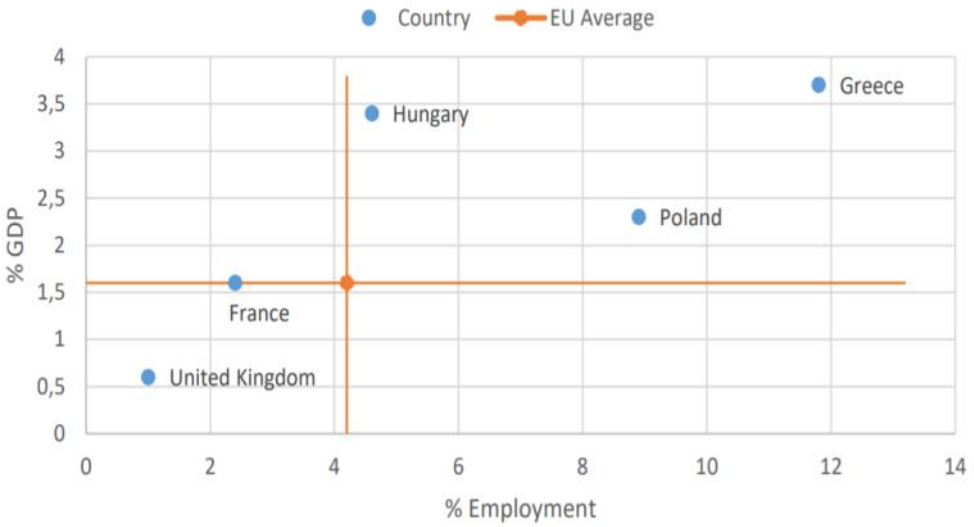
LIFT deliverable: D3.3. Farm environmental performance depending on the degree of ecological approaches.

The report presents the results of a series of analyses carried out to evaluate the environmental performance of (ecological) farm management practices at the farm level. Secondary data were collected through a variety of approaches in an effort to evaluate environmental performance across various dimensions, from a qualitative description, through a quantitative assessment to an empirical analysis. The analyses proceed in a pyramid-approach fashion, in which the most broadest analysis is presented first, and all subsequent analyses presented increase in nuance and complexity.

Prior to carrying out these analyses, a rapid evidence assessment (REA) was performed. Evidence collected through the REA was compiled in a database and formed the basis for the subsequent qualitative and quantitative assessments of environmental performance of farm management practices. The work conducted a comprehensive overview of the impact of various farm management practices on the supply of a number of ecosystem services. Methodologies differ in the scope and depth of results they are able to capture. As the analytical methodologies become more complex, the number of management practices and ecosystem services that can be considered within the analysis decreases.

LIFT deliverable: D3.4. Employment effects of ecological farming at the farm level.

This deliverable investigates the employment effects of ecological farming by analysing both the differences in the intensity of labour use and rewards to skills. The analyses consider the differences between farms from the most standard farming systems to the most ecological as measured by the intensity of use of external inputs and labour, the receipt of agri-environmental payments (AEP), the level of capital and involvement in organic production.



Contribution to employment and GDP from agriculture in selected EU Member States
Authors: Davidova et al., 2021, LIFT D3.4

The analysis of the impact on the labour share of output shows a consistent picture across analysed EU member states. Low intensity of external inputs and capital (which can be used as a proxy for farms employing ecological approaches), increases the intensity of labour use when external input and capital input intensities decrease. As farms become less intensive in their use of purchased inputs, the intensity of total labour (or labour's share of output) falls and this is primarily driven by a lower intensity in the use of family labour. However, after a certain threshold of input and capital intensities there is a switch to a substitution effect.

Therefore, standard farming, not defined here as non-organic or any other defined system of farming but characterised here by intensive use of externally purchased inputs and highly capitalised farms, drops in labour intensity as the intensity of purchased inputs increase.

LIFT deliverable: D4.1. Spatial dependencies in patterns of adoption at local and regional levels - The case of ecologically-friendly agriculture.

This document focuses on the results of the first meta-analysis of the spatial distribution of ecologically-friendly agriculture (EFA), incorporating systems (e.g. integrated production), bundles of practices (e.g. green control measures) and single practices (e.g. conservation tillage).

The study has three aims. Firstly, the evidence on spatial clustering of EFA practices and systems is reviewed. Secondly, a qualitative analysis of the variables that influence the spatial distribution of EFA systems and practices as ascertained using spatial models only is conducted. Thirdly, and finally, a qualitative analysis of the variables that have a spatial spillover effect is carried out, i.e. farmer or administrative unit characteristics that can influence neighbouring farmers or administrative units.

It was found that geographical and farming system biases in the literature hinder global and regional/local understanding. Spatial clustering is a prominent feature of EFA systems and practices, although perhaps not as universal as commonly presented - especially at the local and regional scales and modulated by crop, system, and geographical context.

LIFT deliverable: D4.2. Socio-economic impact of ecological agriculture at the territorial level.

The deliverable investigates the socio-economic effects of ecological approaches to farming through implementing two participatory approaches, namely Delphi exercise and Q-method, at the level of a case study area. The focus is on how people and other productive assets are employed and remunerated by ecological approaches to agriculture, particularly those aspects that can influence employment, and drive the prosperity and vitality of local communities and some rural businesses.

These two different methods have allowed for the study of complex qualitative questions in a structured manner in order to forecast the socio-economic effects of adopting ecological practices within the next 10 years. Both approaches reflected the complexity of adopting ecological approaches across different case study areas and their resulting diverse socio-economic effects. Depending on local conditions, geography, farm type and national policies, ecological practices vary in each case study area. This leads to a variation in the pattern and rate of adoption of these practices. Depending on this adoption, effects are stronger in areas with higher and more clustered adoption.

LIFT deliverable: D4.3. Environmental impact of ecological agriculture at the territorial level.

The report provides insights on the environmental impact, which is termed here more precisely the agri-environmental impact (AEI) of ecological farm management practices, using the ecosystem service concept at territorial level through a two-pronged approach. Firstly, the study presents an indicator framework which uses the one hand, evidence derived from a systematic literature review quantifying the potential supply of 17 ecosystem services from 26 different (ecological) farm management practices, and on the other hand, local stakeholder-derived ecosystem service weights (which reflect relative ecosystem service demand), to obtain an overall AEI indicator for a given ecological farm management practice. Secondly, the study presents results from a discrete choice experiment (DCE) in which preferences for the aesthetic value of integrating ecological farm management practices into an agricultural landscape in Flanders (Belgium), England and Hungary were quantified. Findings illustrate that considering local context and demand is important when evaluating AEI of farm management practices based on ecosystem services.

LIFT deliverable: D6.2. Farm, farm-group and territorial level impact of policies on the adoption of ecological approaches and the performance and sustainability of ecological agriculture.

This deliverable presents the results of the research on the impact of policies on the adoption of ecological approaches and on the performance and sustainability of ecological agriculture. The studies presented adopt various approaches to accomplish this goal (econometric analyses, meta-analysis, treatment effect analysis, bio-economic model, regional computable general equilibrium (CGE) model).

Results highlight some drawbacks of currently implemented schemes, namely that current Common Agricultural Policy (CAP) subsidies received by farmers reduce the technical efficiency of extensive farms, suggesting that the current type of subsidies may not be adequate for extensive technologies, or that currently implemented agri-environmental schemes have the potential to induce windfall effects depending on the technical efficiency of farmers who actually adopt them. In terms of future policy recommendations, the study calls for more ambitious measures to fulfil the obligations under the Nitrates and Water Framework Directives, by targeting animal production directly and facilitating legume processing at the farm level.

LIFT deliverable: D6.3. Innovative public and private measures to encourage the adoption of ecological practices and enhance the performance and sustainability of ecological agriculture.

This document presents the results of the research carried out on innovative measures (policies and private arrangements) to encourage the adoption of ecological practices, and enhance farm, farm-group and territorial performance and sustainability of ecological agriculture (in terms of public goods and ecosystem services provision). Work was based on desk research, modelling exercises, experimental approaches and consultations with local stakeholders regarding the best practice in the design of policy instruments and private arrangements that should be adapted to local contexts.

Regarding the interactions between agri-environment (climate) measures (AEM), payments for ecosystem services (PES), future ecoschemes and consumer-driven price increases, the report provides insights about how this may affect the uptake of ecological approaches. As of now, eco-schemes are perceived as useful to maintain agro-ecological practices, AEMs to transition from one system to the other and PES to fill in gaps in the current policy landscape. How eco-schemes will actually be implemented in the context of subsidiarity across EU Member States, and their interactions with the AEMs will be of great importance in the next CAP programming period. Regarding collective approaches, results show that minimum participation rules have the potential to increase the environmental result of AEMs and that there is a demand amongst farmers to overcome certain cognitive barriers through collaboration with fellow farmers.

COOPERATION WITH OTHER PROJECTS

It is our pleasure to continue active cooperation with other research projects, sharing the obtained results and searching for synergies, as well as mutually reaching a wider group of stakeholders. LIFT actively cooperates with the following research projects: UNISECO, LANDSUPPORT, SURE-Farm, MIXED, TRUE, Strength2Food, BovINE, CONSOLE, BATModel, ReMIX.

The last year of the LIFT project helped to additionally establish contacts with AGRICORE project ("Agent-based support tool for the development of agriculture policies"), with which IRWiR PAN has signed a letter of intent to exchange results and continue cooperation beyond the projects' duration.

A synergy with the SmartAgriHubs project ("Connecting the dots to unleash the innovation potential for digital transformation of the European agri-food sector") resulted in an article in the latest SmartAgriHubs newsletter, available at https://smartagrihubs.h5mag.com/changing_landscape_european_policy/synergising.

The TRADE4SD project ("Fostering the positive linkages between trade and sustainable development") is among the most recent ones to have started its research and cooperation with LIFT, yet the perspectives are promising in terms of mutually interrelated objectives.

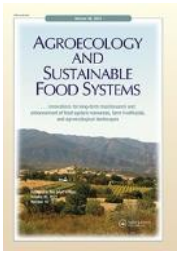
SCIENTIFIC PUBLICATIONS

The most recently published articles based on the LIFT research findings include:

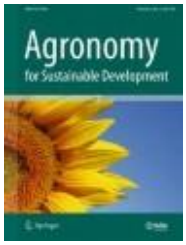
Hervé Dakpo K., Latruffe L., Desjeux Y., Jeanneaux P. (2021). **Modeling heterogeneous technologies in the presence of sample selection: The case of dairy farms and the adoption of agri-environmental schemes in France.** Agricultural Economics, https://doi.org/10.1111/agec.12683.

Barnes A.P., McMillan J., Sutherland L.A., Hopkins J., Thomson S.G. (2021). **Farmer intentional pathways for net zero carbon: Exploring the lock-in effects of forestry and renewables.** Land Use Policy Journal, 112, 105861, https://doi.org/10.1016/j.landusepol.2021.105861.

Leduc G., Manevska-Tasevska G., Hansson H., Arndt M., Bakucs Z., Böhm M., Chitea M., Florian V., Luca L., Martikainen A., Vu Pham H., Rusu M. (2021). **How are ecological approaches justified in European rural development policy? Evidence from a content analysis of CAP and rural development discourses.** Journal of Rural Studies, 86, 611-622, https://doi.org/10.1016/j.jrurstud.2021.06.009.



Duval J.E., Blanchonnet A., Hostiou N. (2021). **How agroecological farming practices reshape cattle farmers' working conditions.** Agroecology and Sustainable Food Systems, 45(10), 1480-1499, https://doi.org/10.1080/21683565.2021.1957062.



Duval J., Cournut S., Hostiou N. (2021). **Livestock farmers' working conditions in agroecological farming systems. A review.** Agronomy of Sustainable Development, 41(22), https://doi.org/10.1007/s13593-021-00679-y.

Bareille F., Zavalloni M., Raggi M., Viaggi D. (2021). **Cooperative Management of Ecosystem Services: Coalition Formation, Landscape Structure and Policies**. Environmental and Resource Economics, 79, 323-356, https://doi.org/10.1007/s10640-021-00563-z.

Barnes A., Thompson B., Toma L. (2022). **Finding the ecological farmer: A farmer typology to understand ecological practice adoption within Europe.** Current Research in Environmental Sustainability, 4, 100125, https://doi.org/10.1016/j.crsust.2022.100125.

The following **LIFT Typology Tool**, **LIFT Adoption Tool** and **LIFT MOOC** are among the key project's practical instruments made freely available to the public.

LIFT TYPOLOGY TOOL

The **LIFT Typology Tool** helps to assign a farm to one of the ecological types identified in the LIFT farm typology, based on user data. It offers the possibility to explore effects of changing input variables.

Further, the tool enables the comparison of performances covering the economic, social and employment, as well as environmental dimensions of farms belonging to different ecological types.

The LIFT Typology Tool is available at: https://agroecology.app.inrae.fr.

Authors: Billaudet et al., 2021, LIFT D1.5

LIFT ADOPTION TOOL

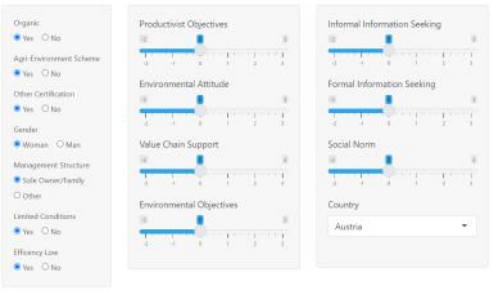
The **LIFT Adoption Tool** serves to predict the ecological category of a farm. The tool will predict the degree of ecological practice adoption that is likely based on their responses. The tool consists of three key sections: explore, interpret, and predict.

Explore allows to review the data collected within the project and prepare graphs based on separate variables or explore the relationships between the variables and the possibility of implementing organic farming practices.

Interpret the results of the tool and see to what extent the implementation of ecological practices depends on different variables.

Predict what organic category a farm may be classified in. Predict the degree of implementation of organic farming practices depending on the individual practices used.

The LIFT Adoption Tool is available at: https://sruc-lift.shinyapps.io/adoption_tool.



Authors: Thompson et al., 2021, LIFT D2.5

LIFT MASSIVE ONLINE OPEN COURSE

The LIFT Massive Online Open Course (MOOC) allows stakeholders to learn about ecological approaches to farming and exchange opinions among platform users. The course has eight modules of different topics prepared by LIFT specialists and a stakeholder forum available to the participants. Registration is necessary to access the platform. The LIFT MOOC is available at: https://lms.agreenium.fr/course/index.php?categoryid=56&lang=en.

LIFT ECOFACTSHEETS

LIFT has managed to collect and process large amounts of data about ecological approaches in farming in the selected countries and case study areas. This has enabled to create interesting and valuable comparisons of these areas, understand their differences in current level of uptake of ecological approaches in farming and assess (with the help of local stakeholders) the possible pathways for adoption of ecological practices in studied regions.

This resulted in 13 **LIFT Ecological Factsheets (EcoFactsheets)** which present peculiarities of ecological farming in given case study areas, information gathered through the project activities such as the LIFT large-scale farmer survey, analysis of the FADN (Farm Accountancy Data Network) data, direct stakeholder interactions. Such factsheets have been prepared for case study areas in Austria, Belgium, France, Germany, Greece, Hungary, Ireland, Italy, Poland, Romania, Sweden and the United Kingdom (separately for England and Scotland).

The LIFT EcoFactsheets are available on the LIFT website: https://www.lift-h2020.eu/ecofactsheets.

INVOLVEMENT OF STAKEHOLDERS

During the **third project year** LIFT partners carried out **30 stakeholder workshops** in project's case study areas. As they have been conducted under the pandemic restrictions, most (beside few exceptions) have taken place in online mode. A total of 322 stakeholders participated in local workshops.

The **fourth year workshops** are in progress.


Stakeholder Conference
"Ecological approaches in European farming:
LIFT project findings"
10th January 2022 at 11:00 (CET) online

On 10th January 2022 the online **LIFT Stakeholder Conference "Ecological approaches in European farming: LIFT project findings"** took place with 264 participants registered from 31 countries across the globe, including European countries, Japan, Pakistan and Philippines. The registered audience was mainly researchers or academic, which constituted 67% of participants. Yet there were also other groups of stakeholders present, such as NGO representatives (7%), advisors (6%), policy-makers or government officials (6%), as well as farmers (4%). Overall, it was a great chance to share project's findings and answer questions.

SPECIAL ISSUE OF EUROCHOICES JOURNAL

In a joint effort with the UNISECO project, LIFT is currently working on preparing a special issue of the **EuroChoices** journal, which is a peer reviewed outreach journal of the Agricultural Economics Society and the European Association of Agricultural Economists.

Eight articles tackling various issues of ecological farming will be prepared within this cooperation, including syntheses of LIFT and UNISECO findings on adoption and transformation of farming, farm typology, labour and sustainability, as well policy recommendations and stakeholder interactions.

Please follow the LIFT website and social media updates to learn about the progress of the project!

LIFT FINAL CONFERENCE

The **LIFT Final Conference**, summarising the project's achievements and presenting it to the project's stakeholders and general public, has taken place **on 23rd March 2022 at 9:00 (CET)** online on ZOOM platform.

We sincerely thank all the **266 registered participants** from 39 countries worldwide, **the organisers from INRAE, INRAE Transfert and IRWiR PAN**, **the presenters from the LIFT partner institutions and the UNISECO project**, as well as **the distinguished round table debaters** for the exchange of knowledge, the sharing of valuable experiences, and as a whole, for making this a great event. It is a substantial effort to intensify the uptake of ecological approaches in farming!

9.00 – 9.15 Introduction and welcome (Laure Latruffe, LIFT Project Coordinator – INRAE, France)

9.15 – 10.25 Presentations of LIFT findings

- Towards an EU farm typology including agroecological principles (Maria Luisa Paracchini – European Commission JRC, Ispra, Italy)
- Farmer perspectives towards ecological approaches (Andrew Barnes – SRUC, the UK)
- Farm performance of ecological agriculture (Jochen Kantelhardt – BOKU, Austria)
- Low-input agriculture and ecosystem services: A Europe-wide scenario-based quantitative assessment (Joseph Tzanopoulos – University of Kent, the UK)
- Sustainability assessment of ecological farm management practices (Liesbet Vranken – KU LEUVEN, Belgium)
- The role of policies in the adoption of ecological approaches : insights from LIFT (Sophie Legras – INRAE, France)

10.25 – 10.50 Q&A with the audience on LIFT findings

10.50 – 11.10 Presentation of UNISECO findings and Q&A (Gerald Schwarz, UNISECO Project Coordinator – vTI, Germany)

11.10 – 11.30 Health break

11.30 – 12.30 Round table on incentives for a greater uptake of eco-practices in Europe

Moderator: Katarzyna Zawalińska – IRWiR PAN, Poland

Participants: **Marion Maignan** (European Commission, DG AGRI's unit on Policy perspectives); **Alan Matthews** (Trinity College Dublin, Ireland – http://capreform.eu); **Dorota Metera** (President of the Board Bioekspert Ltd, Council Member of IFOAM Organics Euro); **Gerald Schwarz** (UNISECO Project Coordinator – vTI, Germany); **Davide Viaggi** (LIFT project – University of Bologna, Italy)

LEARN MORE ABOUT LIFT!

To stay up to date with the latest news, research results and planned workshops for stakeholders in your area or to sign up to receive LIFT newsletters and updates, please visit our website: **www.lift-h2020.eu**, check out our social media accounts or contact the LIFT project representatives through the website's contact page.

LIFT project coordinated by:

INRAE science for people, life & earth

Other partners:

VetAgro Sup, SRUC, cagasc, KU LEUVEN, SLU, Alma Mater Studiorum Università di Bologna, BOKU, Universität Bonn, European Commission, IRWiR PAN, ELGO-DEMETER, University of Kent, INRAE transfert, ECOZEPT

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