



# Effective communication of agrometeorological services

Tanja Cegnar  
European Meteorological Society Annual Meeting 2023

# Partners

- Met Éireann - The Irish Meteorological Service
- International Society of Biometeorology
- Solco W. Tromp Foundation
- EMS Media and Communication Committee
- Slovenian Environment Agency
- Slovenian Meteorological Society



**S. W. Tromp  
Foundation**



# Motivation

- Food security is a concern also in some European countries
- Linkages between climate and food production
- Meteorological and hydrological hazards to agriculture
- Significant differences from country to country, depending on structure of agrometeorological sector
- Strengthening of agrometeorological activities within the national Meteorological services
- WMO's agricultural meteorological programme
- Education and training

# Where and when?

- Side event at European meteorological society annual meeting
- Bonn, 7 September 2022
- Hybrid event, by invitation only

## Purpose

- Networking
- Sharing experience and knowledge
- Data/information availability and quality
- Ways to communicate effectively

# Participants from

- National meteorological services
- Universities
- Research institutes
- Private companies

Aiming to strengthen the network of European agrometeorologists

# Pressure on agriculture

- Mitigation – reduce GHGs emissions
- Produce more food
- Use less fertilizers and pesticides
- Cope with climate change – more severe weather and climate anomalies, including droughts and water shortages
- Manage changes in the distribution and intensity of pests and disease outbreaks
- Overcome price fluctuations

# European union food inflation





Question to answer:

How can we deliver efficient and effective agrometeorological service?



# Recommendations

- Involve users and information brokers in the early stage of development and evaluation
- Design & implement training activities for NMHSs staff on interaction with users.
- Acknowledge the growing audience of end-users, including insurance and pharmaceutical companies, food-production industries, and research and innovation organizations.

# Recommendations – cont.

- Spread the farmer-to-farmer learning approach for accelerating the uptake of technologies.
- Consider the specific challenges in conveying probabilistic climate predictions.
- Organize meetings to stimulate the network of NMHSs and provide platforms to learn from each other and share ideas.
- Stimulate publishing in-situ data following the open science and open data principles and support initiatives that collect and harmonize in-situ data ready for reuse.

# Presentations

Presentations in pdf format are available on the website:

<https://agmet.ie/events/effective-communication-of-agro-meteorological-services/>

# Published paper

Paper with outcomes is published in ASR journal:

<https://asr.copernicus.org/articles/20/9/2023/>



# Highlights

Selection taken from single presentations

# Challenges and Opportunities



*Gerald Fleming*

## **Challenges:**

- Understanding the Weather
- Listening to our Users
- Understanding our Users
- Linking our weather knowledge to the key decisions of Users

## **Opportunities:**

- Making our weather services more useful and relevant
- Helping our Users to make better decisions
- Providing better value to our Users
- Making sure that our science is truly in the service of Society

# Agricultural challenges - from Climate Planning to Climate Action



*Keith Lambkin*

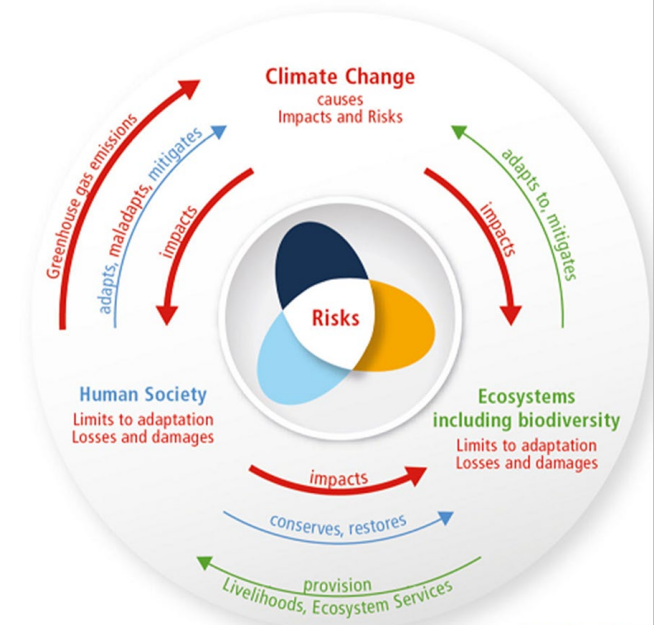
## Challenges

- Fertiliser constraints
- Societal changes
- Growing population
- Climate

Less, Less, Less ...

More, More, More ...

*Climate Action is not just making hard decisions,  
it is implementing them.*



# Climate prediction



*Jean Pierre Ceron*

Data describing the user activity and its sensitivity to climate variability is crucial for tailoring of climate information and to allow effective processes of co-design and co-production, helping users to take the ownership of products and services.

Climate prediction is fundamentally probabilistic.

Build trust and credibility, particularly by evaluating the impact of the use of provided tailored information.



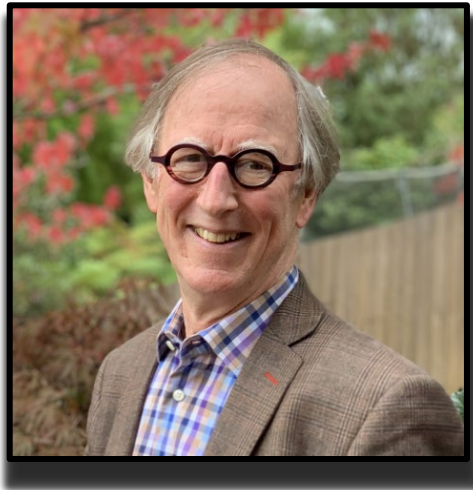
# Science Education and Science Communication in Agrometeorology – Time for the Changing Paradigm?



***Branislava Lalić***

- Why we need science education and why we need it in agrometeorology, especially?
- Science education is an integral part of the education process
- At the end of the day, do we have engaged, enthusiastic students looking forward to the next class, keen on learning more?
- At the end of schooling, is the labor market really satisfied with most young people coming from university?

# Agrimeteorological Services in the Future



*Kenneth R Irons*

- And 470 million small holder farmers, with < 2Ha (30% of global protein from 25% of land)
- Important and valuable to discuss temperatures, rain and wind
- But there is a comprehension context issue
- How long will the climate permit that cheese or this wine be produced in a region
- Where are the vulnerabilities...
- Short term – crop production, animal performance
- Medium term – communities – income, welfare, e.g. single lane bridge washout
- Long term – viability of whole economies in the context of climate change
- Focus on agritech, not just on agriculture

# Regional Agrometeorological Centre for RA VI (Europe): from Vision to Action



*Elena Mateescu*

The present-day and foreseeable climatic data highlight the increase in frequency and intensity of the extreme phenomena, its potential effects on the most vulnerable sectors (e.g. agriculture, water and forests, biodiversity, energy, transport), thus requiring specific adaptation measures to the limiting environmental conditions.



# Agrimeteorological Services at the Hungarian Meteorological Service

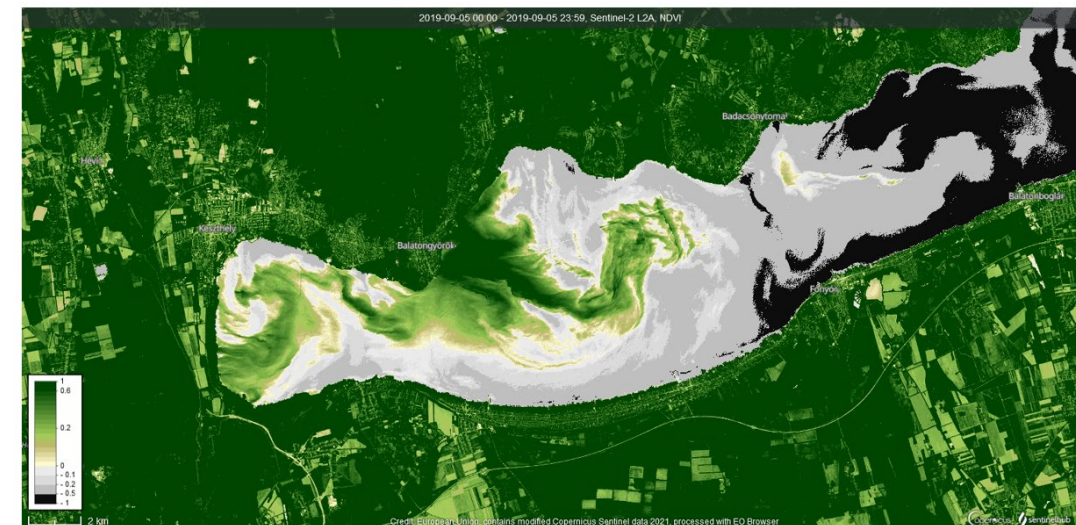
Ongoing developments: Warning for spring frosts



*Mónika Lakatos*



Sentinel-2 NDVI – algae bloom lake Balaton – 2019. 09. 05.



# Agrometeorological services of Deutscher Wetterdienst



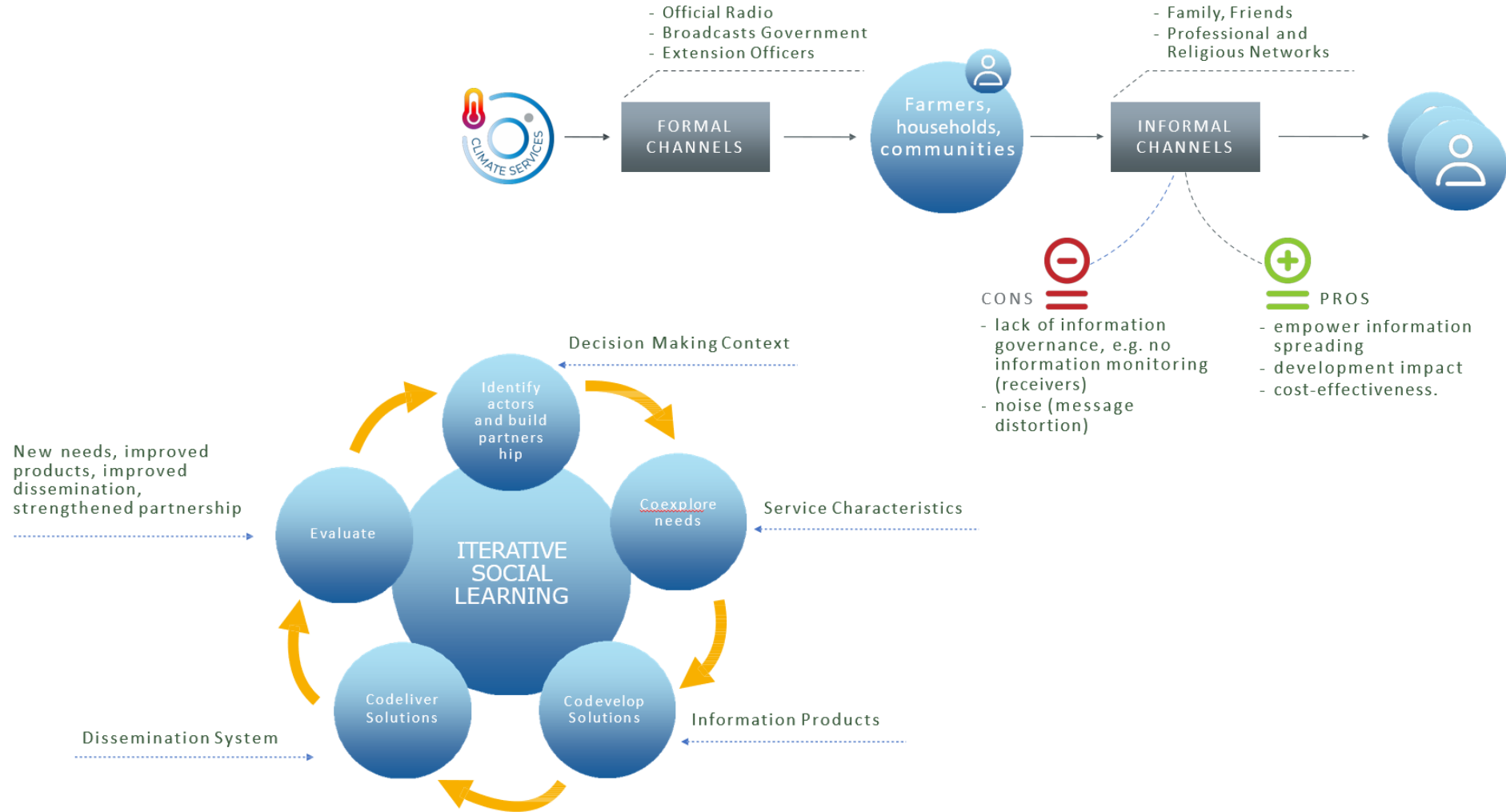
*Saskia Lifka*

- Main task is to consult agriculture, especially politics, concerning environmental sound cultivation and hazard prevention.
- A software package called AMBER can calculate more than 300 agrometeorological elements.
- Various data, products and information on different time scales are offered via internet, e-Mail and other ways of distribution.
- Most of the information is free available, some is only for closed user groups, some against payment.
- Agrometeorological information is also presented via (social) media and advertised on exhibitions.

# Communicating agrometeorological services in rural Africa



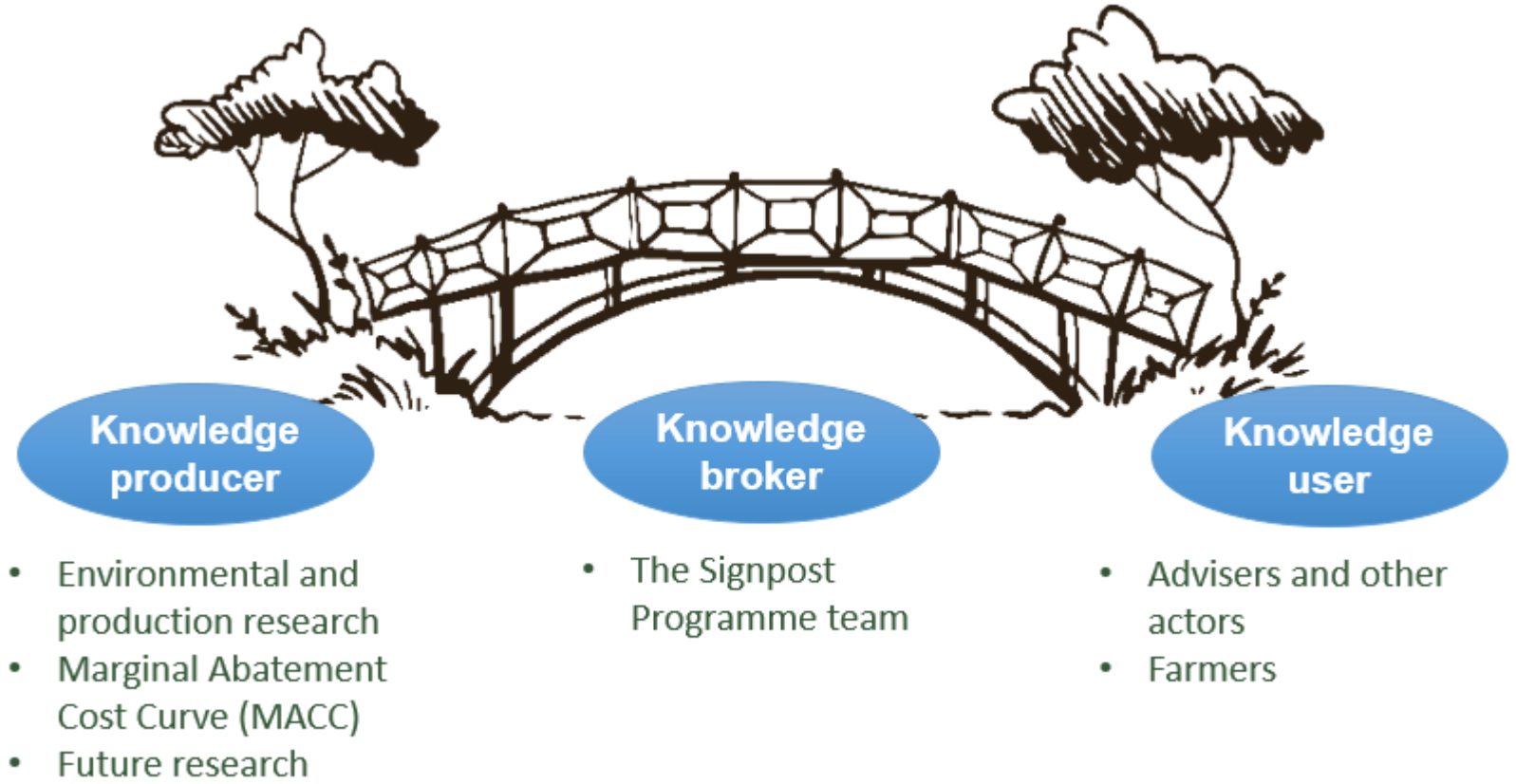
*Vieri Tarchiani*



# The Signpost Programme: Leading climate action by Irish farmers



*Tom O'Dwyer*



Science to Practice: Signpost Programme

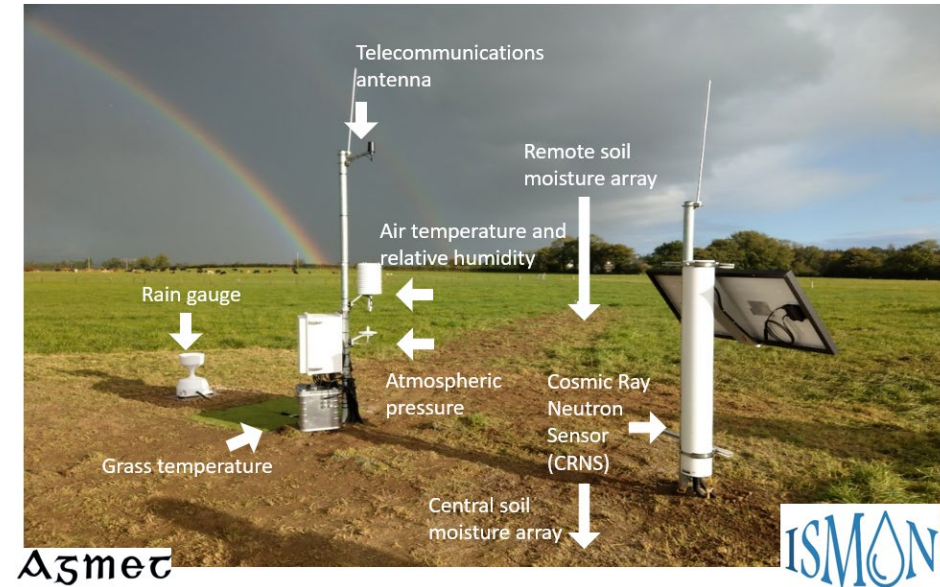
# Overview of Agrometeorological Services provided by Met Eireann



*Klara Finkle*

## What: Type of Services

- Animal Diseases
- Plant Diseases
- Plant Growth
- Forest Fire Danger
- Soil Moisture Deficit
- Daily Farm Commentary
- General Forecast Products relevant to agriculture
- Atmospheric Dispersion
- National/International Cooperation





# Making Agronomic Reference Data Available for Re-use



*Hendrik Boogaard*

AGROSTAC: a global repository on key agronomy observations

An initiative to stimulate **re-use** of data



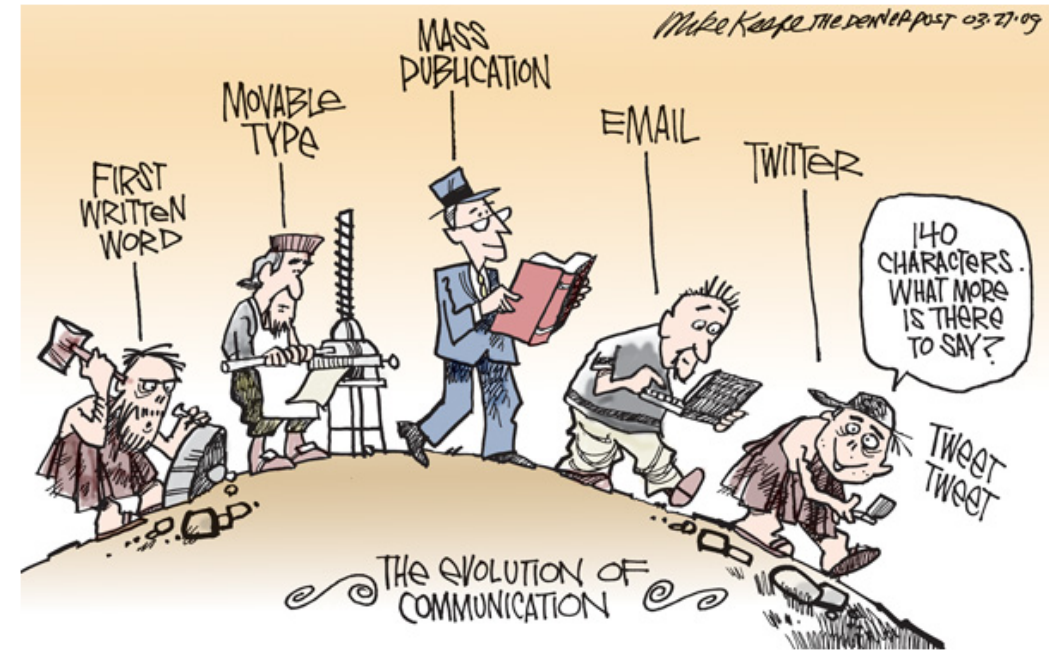
- Ground truth data is essential for reliable and accurate agricultural research.
- To monitor crop productivity, crop location, biomass and yield are main inputs.
- The ground truth data is not always available.
- Published and open data could be used to fill this gap, yet these data are scattered over many different sources, lack standardization and have incomplete metadata.
- To address this problem the AGROSTAC repository was initiated.

# A change in the communication principle in the agrometeorology



*Andreja Sušnik*

Today & future with higher weather/climate variability, climate change, and extreme events



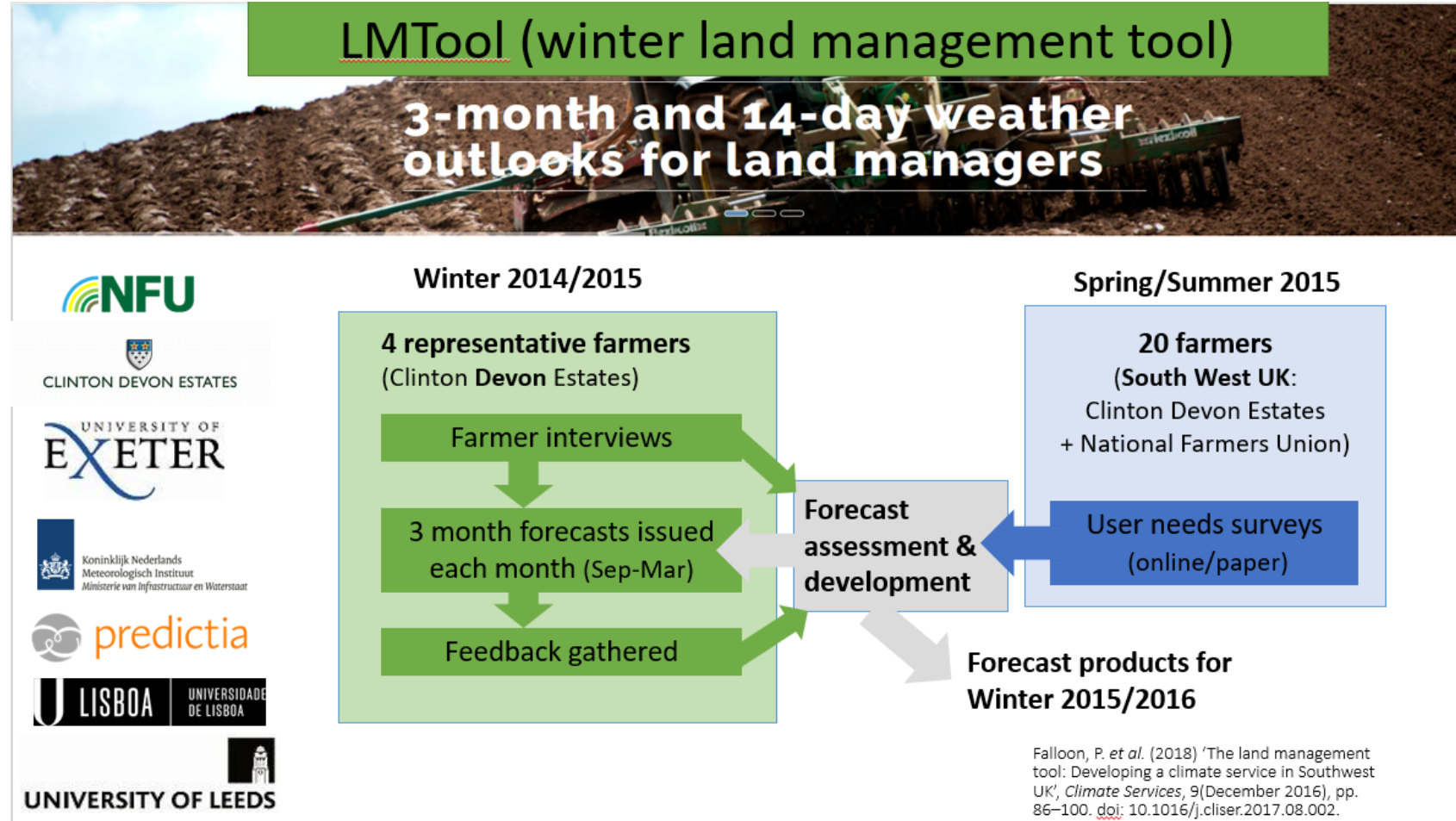
Customers: New technologies in the agriculture

- Meteorological network automatization and new sources of data (RS, radar, measurements, digitalisation); higher accuracy of weather forecast, Big Data
- Internet (web sites, web-based applications, e-mail), devices (computers, smart phones), technology (videos, apps, RSS feeds, blogs, social media), mass media

# Communicating the State of the UK Agroclimate



*Joanna Raymond*



The UK Climate Risk Indicators website (<https://uk-cri.org/>)

# Linking agrometeorology and human biometeorology



*Tanja Cegnar*

Provide information for field workers:

- UV index
- Air pollution
- Heat load
- Cold stress