# Workshop on Effective Communication of Agrometeorological Services

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### Effective Communication of Agrometeorological Services

#### Room SR1+2, 7 September 2022, Bonn

Time	Speaker	Title
9:00-9:15	Wop Rietveld Tanja Cegnar	Introduction
9:15-9:40	Gerald Fleming	What is this thing we call Communication, and how can we make it better?
9:40-10:10	Keith Lambkin	Agricultural Challenges - from Climate Planning to Climate Action
10:10-10:30	Branislava Lalić	Science Education and Science Communication in Agrometeorology - Time for the Changing Paradigm?
10:30-11:00	Break	
11:00-11:30	Kenneth R Irons	Agrometeorological Services in the Future
11:30-12:00	Elena Maatescu	Regional Agrometeorological Centre for RA VI (Europe): from Vision to Action
12:00-12:20	Hendrik Boogaard	Making Agronomic Reference Data Available for Re-use
12:20-12:40	Klara Finkele	Overview of Agrometeorological Services Provided by Met Eireann
12:40-13:00		Discussion
13:00-14:00	Lunch	
14:00-14-20	Vieri Tarchiani	Communicating Agrometeorological Services in Rural Africa
14:20-14:40	Saskia Lifka	Agrometeorological Services of Deutscher Wetterdienst
14:40-15:00	Mónika Lakatos	Agrometeorological Services at the Hungarian Meteorological Service
15:00-15:20	Tom O'Dwyer	The Signpost Programme: Leading Climate Action by Irish Farmers
15:20-15:30		Discussion
15:30-16:00	Break	
16:00-16:30	Andreja Sušnik	Agrometeorological Support in Slovenia & Drought Communication Development
16:30-16:50	Joanna Raymond	Communicating the State of the UK Agroclimate
16:50-17:30	Tanja Cegnar	Discussion & Wrap-up













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#### Abstracts

#### Gerald Fleming

## What is this thing we call Communication, and how can we make it better?

We are supposedly living through a communications revolution, and the means for disseminating information have certainly increased and multiplied. But are we communicating more effectively? In this discussion we try to strip the concept of communication back to the fundamentals; what is communication about, and how do we work towards practicing it more effectively? Is effective communication a skill that we can learn?

#### Keith Lambkin

#### Agricultural challenges - from Climate Planning to Climate Action

The Paris Agreement kick-started a series of Global, European and National climate planning processes. Many regions and sectors, including agriculture, have seen the emergence of well-meaning mitigation and adaptation plans. However, with 2030 targets rapidly approaching, much of the focus has changed from planning to action.

This talk explores some of the typical drivers, plans and actions related to the climate response. In particular, it explores some of the challenges the agricultural sector is likely to experience and how climate services may help towards some of these.

#### Branislava Lalić

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

Agrometeorological theory and practice are closely related to some of the greatest challenges of the 21st century: food security, adaptation to climate change, vector-borne diseases, and climate-smart urban leaving through greener cities and enhanced urban agriculture. Effective science education (SE) and communication (SC) of agrometeorological knowledge and skill is crucial in facing these challenges.

SE&SC, in general, are proven to be not good enough (anti-vaxxers' impact on reducing vaccination, climate change skepticism), and it is the time for the paradigm change. Our long-term strategy and short-term measures toward this goal are based on the democratization of science and the application of new technologies while reaching the general public, from high school to senior citizens.

#### Kenneth R Irons

#### Agrometeorological Services in the Future

Science, research and innovation initiatives are as important in agriculture as they are in other major industries, for example, aviation, oil & gas, and shipping. And in terms of climate change adaptation, especially when considering carbon sequestration, it could be argued that agriculture is perhaps more important than most.

But when meteorologists consider engaging with end users in various sectors, while they have potentially 6,000 airlines to consider, or 25,000 banks or 10,000 shipping lines, with agriculture, the world has 70 million large scale farmers and another 470 million small-holder farmers tending less than two hectares.

And unlike large corporations that have specialized staff working in functional verticals like technology, and climatology, the vast majority of the world's farms are run as small businesses, with perhaps only one or two staff.

So as climate science becomes increasingly sophisticated and exponentially important, how do meteorologists align their communications to optimize value delivery to the primary sector.

#### Elena Maatescu

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

The Regional Agrometeorological Centre will be meant to strengthen collaboration among National Meteorological and Hydrological Services, enhance capacity building and facilitate beneficial partnerships at European and international level, aiming at successfully implementing the research projects and programs oriented towards the mitigation of global warming and climate change effects.

This Centre will provide the full range of activities, starting from monitoring and observation, going through data exchange and processing, ending up with service delivery. Its overall purpose will be to determine the impact of weather and climate on current and future agricultural systems and to determine what needs to be done, in order to provide long-term sustainability of the agricultural system in RA VI, in the context in which, the variability and climate change become more and more obvious, all over the world.

#### Hendrik Boogaard

#### Making Agronomic Reference Data Available for Re-use

Ground truth data is essential for reliable and accurate agricultural research. For example, to monitor crop productivity, crop location, biomass and yield are main inputs. To train and validate the needed algorithms and models, researchers rely on ground truth data, which 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. This hampers the re-use of this data by others, causing an inefficient use of resources, while also limiting the calibration and validation work which in turn affects product quality. To address this problem the AGROSTAC repository was initiated.

#### Klara Finkele

#### **Overview of Agrometeorological Services Provided by Met Eireann**

The AgMet Unit develops agrometeorological services in collaboration with universities, Teagasc and state agencies. The operational services are largely disseminated by the General Forecast Division. The communication is via website, mobile app, social media, podcast, TV, radio, print media, telephone consultancy and presence at agricultural related exhibitions. Some of the services include: Potato Blight, Fire Weather Index, Farm Commentary on past 7 day weather, Soil Moisture Deficit, weather reports on the risk of Nematodirus and Liver Fluke. The Hysplit dispersion model is used to assess the risk of Foot and Mouth Disease, Blue Tongue as well as nuclear accidents.

#### Vieri Tarchiani

#### Communicating Agrometeorological Services in Rural Africa

Digital technology (DT) is gaining momentum for the last mile communication of Agrometeorological Services (AS) in Niger: DT (particularly WhatsApp and Kobocollect) enhances the interaction and information exchange within the system actors and contributes to building trust and changing the relations between information providers, extension officers, and farmers. DT empowers also communities to contribute to the service co-production with observed data on local conditions and timely feedback on information received and its performance, thereby improving their engagement in the whole AS. Nevertheless, rural radios still are the most powerful tool for reaching farmers directly. However, the effective use of these channels requires propaedeutic training activities.

#### Saskia Lifka

#### Agrometeorological Services of Deutscher Wetterdienst

The department agrometeorology of the Deutscher Wetterdienst has its headquarter in Offenbach and its research center in Braunschweig. Its main task is to consult agriculture, especially politics, concerning environmental sound cultivation and hazard prevention. The main instrument is a software package called AMBER, which can calculate more than 300 agrometeorological elements. Based on this, 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.

#### Mónika Lakatos

#### Agrometeorological Services at the Hungarian Meteorological Service

Over the past 5-6 years, there have been significant innovations and improvements in agrometeorological services of the Hungarian Meteorological Service (OMSZ). The website of OMSZ has a dedicated agrometeorological sub-page where textual analyses are published twice a week during the growing season and updated once a week during the winter season. An international picture of the agrometeorological situation is presented monthly. In addition, maps showing the measured data of the main meteorological elements (precipitation, temperature), anomalies and forecasts compared to the long-term average are also available. We are processing drought-monitoring service based on soil moisture and gridded water capacity data. Recently we are developing mobile app for a phenological observations.

#### Tom O'Dwyer

#### The Signpost Programme: Leading Climate Action by Irish Farmers

One approach to accelerate the adoption of proven mitigation technologies is the use of demonstration farmers, as focal points for farmer-to-farmer learning. Such farmers can be amongst the first to apply the latest scientific findings and new technologies on their farms, while also sharing their experiences of innovative farming approaches. Farmer-to-farmer learning, facilitated by highquality on-farm events and a range of other communications and training activities, can play a significant role in accelerating the uptake of climate mitigation technologies amongst the wider farming population. A network of 120 Signpost Farmers are central to the new, Teagasc-led, wholeof-industry Signpost Programme.

#### Andreja Sušnik

#### Agrometeorological Support in Slovenia & Drought Communication **Development**

Slovenian agrometeorological service is bringing a wide range of information to the customers in the agricultural sector on a national level. In parallel, it supports drought watch on the regional level of SEE in the frame of Drought Management Center. At a time when new sources of data and modern communications are available Drought Watch, Droughtmeter, and Agrometeorological forecast were introduced.

#### Joanna Raymond

#### Communicating the State of the UK Agroclimate

Latest UK initiatives in agro-met and agro-climate services will be summarised including Met Officeled 1-3 month sub-seasonal and seasonal forecasts for Land Managers, UEA-Vinescapes-Weatherquest services for viticulture and CEH's COSMOS soil moisture monitoring network and droughts portal. Meanwhile the UK Climate Risk Indicators website (https://uk-cri.org/) is an excellent resource arising from the growing research into agroclimate specific metrics, enabling users to explore how agricultural risks, such as growing season length, may change in their region. We are also creating the first State of the UK Agroclimate report, which will help growers to better understand past trends and variability in crop-specific metrics.

















**Gerald Fleming** took degrees in Experimental Physics before joining Met Éireann. He worked as a weather forecaster, led the television weather team, then becoming Head of Forecasting. Co-Chair of the First World Conference on Broadcast Meteorology. Awarded the EMS Silver Medal in 2019. He chaired the WMO Expert Team / Media Issues for 6 years and the Public Weather Services Programme for 15 years.

**Dr. Branislava Lalic** has long experience in the dynamical modeling of biophysical processes and the development of biometeorological models. She BSc in Physics, but during her postgraduate and Ph.D. studies, she focused on modeling physical processes describing biosphere-atmosphere interaction and their implementation in numerical weather prediction and agrometeorological models.





**Keith Lambkin** is head of Met Éireann's Climate Services team. He works with Government departments, academia and international organisations to help promote the development of climate services. His interests have changed from measuring the climate, to instead using this knowledge to assist sectors adapt to our changing environment.

**Kenneth R Irons** is the New Zealand's representative on the global ISO Strategic Advisory Group for the development of standards for third-generation Smart Farming. He is former chairman of AgriTech New Zealand, board member of the Data Driven Agrifoods Futures Alliance in Western Europe, and MD of AgSorted Ltd, a specialized investment and project management firm.





Dr. Elena Mateescu is currently the Director General of the Romanian Meteorological Service, Permanent Representative of Romania with World Meteorological Organization (WMO) and acting member of the WMO Executive Council. With a Ph.D. title in Agronomic Sciences she is also an associate professor at the University of Agronomic Sciences and Veterinary Medicine of Bucharest (USAMV) and a corresponding member of the Academy of Agricultural and Forestry Sciences "Gheorghe Ionescu-Şişeşti". Dr. Elena Mateescu has more than 30 years of expertize in agrometeorology. She has been actively involved in the activities of the former WMO Commission for Agricultural Meteorology as member of its Management Group, expert team leader on Strengthening Operational Agrometeorological Services under WMO/CAg-M/OPAG 1 – Agrometeorological Service for Agricultural Production/ET 1.2 – ETSOAS, chair of the Focus Area 4: Capacity Development in Agricultural Meteorology, CAgM OPCAMEs and recently co-chair of the Standing Committee on Services for Agriculture (SC-AGR) within the WMO Commission for Weather, Climate, Water and Related Environmental Services and Applications (SERCOM). She is the promoter of the initiative for the establishment of the Regional Agrometeorological Centre for RA VI (Europe) in Romania.



**Hendrik Boogaard** is project manager monitoring crop production at Wageningen Environmental Research (WENR). Hendrik Boogaard graduated in soil and water management (M.Sc.) at Wageningen University, the Netherlands. He specialized in agro-meteorology, crop modelling, land evaluation and data science and is experienced in leading complex international projects

**Klara Finkele** is co-organizer of the workshop. AgMet Unit, Climate Services, Research and Applications Division, Met Eireann, Dublin, Ireland. MSc in Applied Mathematics and PhD in Meteorology in boundary layer meteorology. Post doctoral positions focusing on land surface modelling and hydrological aspects as well as ten years' experience as a weather forecaster at Met Eireann.





**Vieri Tarchiani** is a researcher at the Institute of Bio-Economy of the Italian National Research Council. His main interests are climate, agrometeorological and hydrological services for agriculture and disaster risk reduction. He has been project manager of several training and research4development initiatives in West Africa and contributes to the WMO Regional Training Center in Italy.



**Saskia Lifka** studied physical geography at the university of Mainz. Diploma thesis (drought analysis for WMO-region VI) attended by Deutscher Wetterdienst (DWD). Since 2010 working at DWD department agrometeorology in various functions: coordination of agrometeorological advice, distribution of products, (social) media work, organisation of internal trainings, responsability for phenological observation network.

**Mónika Lakatos** is senior researcher at the Hungarian Meteorological Service since 1988. Research interests: climate research, statistical climatology, time series analysis, statistical modelling of climatic extremes. Coordinator and/or participants of several national and international project related to climate change and adaptation. National contact to WMO CSIS, and WMO ST-P/GCOS, member of the leading consortia of the EUMET-NET Climate Program (2019-2023), head of the Hungarian Meteorological Society.





**Dr. Tom O'Dwyer** is Head of Signpost Programme, Teagasc



**Dr. Andreja Sušnik** is the head of the Department for Meteorological Support to Agriculture at the Meteorology and Hydrology Office in the frame of the Slovenian Environment Agency (ARSO). Her work is mainly focused on operational agrometeorology, in parallel, she is coordinating Drought Management Center for South Eastern Europe activities since 2006. Main activities:

- Development, analyses, research in operational agrometeorology (agriculture-tailored products)
- Drought monitoring, early warning and management Management of Drought Management Center for SE Europe
- Team leading responsibilities, national & international projects
- Business relationship with partners/customers and acquisition of new business partners in the field of agriculture
- Organisation and execution of educational activities /trainings
- Preparation of governmental strategies for specific agrometeorology related tasks

**Joanna Raymond** is a PhD student in the School of Environmental Sciences, University of East Anglia, UK where she is researching the impact of weather and climate variability on UK cereals.





**Tanja Cegnar** is the Tromp Foundation Board member, International Society of Biometeorology board member, Slovenian meteorological Society President, EMS media and Communication Committee Chair, Senior scientists at the Slovenian Environment Agency.

Wop Rietveld is the Tromp Foundation Board Chairman