



Federal Ministry  
of Food  
and Agriculture

GLOBAL  
FORUM OF FOOD  
AND  
AGRICULTURE

# Global Forum for Food and Agriculture 2019

Agriculture Goes Digital – Smart Solutions for Future Farming

## Summary of the results

#GFFA



[bmel.de](http://bmel.de)  



## Dear Readers,

With this year's Global Forum for Food and Agriculture (GFFA), we have sent out an important signal: Together, we have succeeded in progressing the technical and political exchange on the digital transformation of the food and agricultural sectors at international level. This is important, as we must use innovations wisely in order to meet the major challenge of continuing to provide the growing global population with healthy and sustainable food.

The digital transformation can play an important role in minimising food losses and optimising agriculture: to produce more food but at the same time decrease use of fertilisers and pesticides, to make production more sustainable, to strengthen rural areas across the globe - and, not least, also to minimise the causes of people fleeing their homelands. At the same time, issues relating to better access to digital technologies, data sovereignty and data protection need to be settled.

I am therefore delighted that we can hereby present this brochure, documenting GFFA 2019, as we had exciting, intensive discussions and meetings. For three days, the opportunities and risks of the digital transformation were discussed at different levels, in particular with Federal Chancellor Dr. Angela Merkel.

We finally managed to reach agreement with all 74 agriculture ministers present on our final communiqué. The most important point is that we have provided the impetus for the creation of an international framework for digitalisation in agriculture. To this end

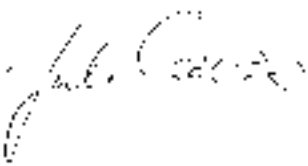
we have initiated the establishment of an International Digital Council. We have invited the Food and Agriculture Organisation of the United Nations, the FAO, to draw up a concept for this council.

The Digital Council is intended to develop potential solutions for vital digitalisation issues, to give recommendations, to progress the exchange of ideas and experiences, and consequently to enable everyone to better utilise the opportunities presented by digitalisation.

I hope you find it an interesting read!

With kind regards,

yours

A handwritten signature in black ink, appearing to read 'Julia Klöckner', written in a cursive style.

**Julia Klöckner**

*Federal Minister of Food and Agriculture*

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# 1. About the Global Forum for Food and Agriculture



## The international platform for the global food situation

The Global Forum for Food and Agriculture (GFFA) is an international conference on central issues of vital importance for global agricultural and food policies. Since 2009, it has been held at the **start of the International Green Week (IGW)** in Berlin in mid-January. The GFFA is hosted by the Federal Ministry of Food and Agriculture (BMEL) in cooperation with the Berlin Senate, Messe Berlin GmbH and GFFA Berlin e.V., an affiliation of associations from the agri-food sector.

**More than 2,000 international guests from politics, industry, academia and civil society** meet at the three-day forum in order to exchange thoughts and ideas on a focal topic of global agricultural policy and food security. At the invitation of the BMEL, up to 20 representatives of young farmers from across the globe also take part. High level panel discussions and numerous expert panel discussions and workshops take place in Messe Berlin's CityCube. The innovation market offers stakeholders from the food and agricultural sectors the opportunity to present their ideas to an expert audience from around 120 countries.

The political highlight of the GFFA is the **Berlin Agriculture Ministers' Conference** at the Federal Foreign Office; this is not open to the public. It is the world's largest meeting of agriculture ministers, attended by around 70 agriculture

ministers. The participants in the conference also include high level representatives of more than ten international organisations. These organisations include the Food and Agriculture Organisation of the United Nations (FAO), the World Trade Organisation (WTO), the World Bank, the Organisation for Economic Cooperation and Development (OECD) and the European Commission.

The conference concludes with the agriculture ministers drafting a joint political position, potential solutions and measures on the respective GFFA topic. This **GFFA final communiqué** provides impetus for the ongoing international discussion on agricultural policy.

**Current information:**  
[www.gffa-berlin.de](http://www.gffa-berlin.de)



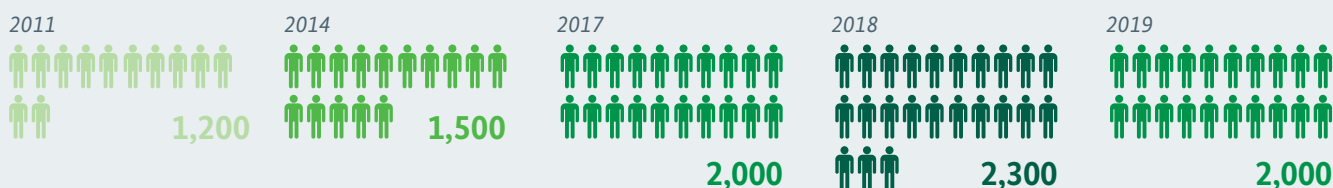
## 2. Facts and figures about the GFFA

### Eleven years, eleven topics

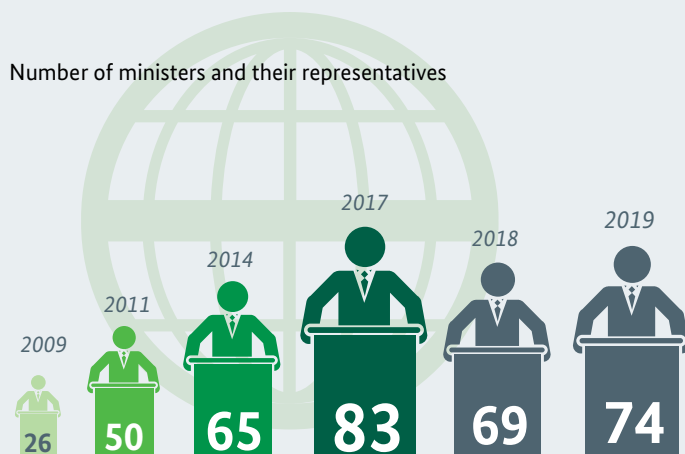


### Facts and figures about 11 years of GFFA

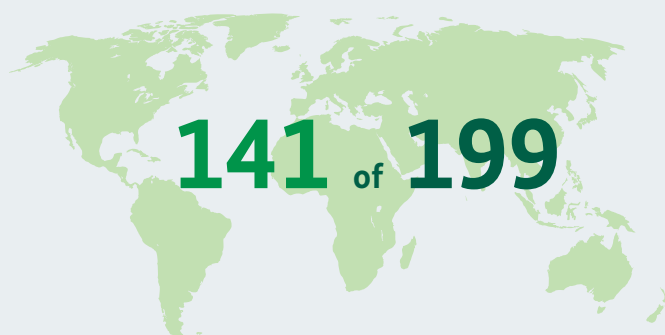
Number of participants



Number of ministers and their representatives



Countries that have already participated in GFFA



# Global Forum for Food and Agriculture 2019

Time	Thursday, 17 Jan. 2019	Friday, 18 Jan. 2019	Saturday, 19 Jan. 2019
9-10			9:00-9:45 Welcome and Official Opening
10-11	9:00-13:00 Senior Officials' Meeting		9:45-11.00 Breakout Sessions
11-12		10:30-11:45 5 Expert Panels	
12-13		10:00-13:00 1st Young Farmer's Meeting	
13-14	12:30-13:45 GFFA-Workshop Consolidation + 4 Expert Panels	12:15-13:30 HLP FAO	11:45-13:30 Plenary Agricultural Ministers' Conference
14-15	12:30-17:00 Future Forum with start-ups	12:15-13:30 Side Event WTO	13:45-14.15 Press conference
15-16	14:00-15:15 Kick-off Event	12:30-17:00 Innovation Market, Business Lounge	
16-17	16:00-17:15 5 Expert Panels	14:00-15:15 HLP EU-KOM	
17-18		14:00-15:15 Think Aloud! - GFFA Science Slam	
		15:30-16:00 Meeting with the Federal Chancellor	
		16:30-18:00 EU COM's Africa Event	
		9:00-12:15 2nd Young Farmer's Meeting	
		09:00-16:00 Future Forum with start-ups	
		09:00-16:00 Innovation Market, Entrepreneur's Lounge	
		<b>International Green Week</b>	<b>International Green Week</b>

### 3. Kick-off Event

## Agriculture Goes Digital – Smart Solutions for Future Farming



Opened the GFFA: Michael Stübgen, Parliamentary State Secretary at the Federal Ministry of Food and Agriculture

Over the last 50 years, the world population has doubled. Thanks to mechanical, biological, chemical and business innovations, agricultural production has tripled over the same period. However, there are still over 821 million people in the world who are suffering from hunger. The global population is also predicted to rise to around ten billion people by 2050. We must therefore continue to increase agricultural production to meet the current and future need for food and feed. At the same time, the natural resources we require are limited and agriculture is being confronted by further challenges due to climate change. There is, therefore, an increasing need for agriculture to be sustainable and resource-conserving. We need to find new solutions in order to resolve this conflict of objectives.

The topic of “Agriculture Goes Digital – Smart Solutions for Future Farming” was discussed in the international panel by representatives from politics, academia, industry and civil society, in order to present different regional angles and provide new impetus for the GFFA events that followed.

In addition to the opportunities, the discussions also focused on the challenges and risks involved in the ongoing digital transformation of the agricultural sector.

The **Parliamentary State Secretary at the BMEL, Michael Stübgen**, opened the kick-off event. He drew attention to

some of humanity’s most important tasks for the future: ensuring the right to adequate food, enabling both today’s generation and future generations to live healthy lives in an intact environment, and developing attractive rural areas. He said that this required cross-border cooperation, that although agriculture was a regional activity, it needed internationally coordinated policies, modern science, a strong civil society and sustainable economic processes in order to be able to meet the forthcoming challenges. He listed the most important challenges facing agriculture. According to the State Secretary, production must be increased in all areas of the world and must use the scarce resources sustainably.

This was followed by a speech by **Margit Gottstein, State Secretary for Consumer Protection and Antidiscrimination**. As representative of the **Senate of Berlin**, she drew attention to the importance of conserving resources. She said that increasing yields must not be the sole objective. She also pointed to the risk of having a large concentration of power, stating that it was currently mainly global corporations that were involved in developing artificial intelligence systems and that were capable of developing complex algorithms. She said that whoever had the data also had enormous influence on the value adding chain.

The opening statement introducing the following panel discussion was held by the **Vice-Minister of Agriculture**



Margit Gottstein, State Secretary for Consumer Protection and Antidiscrimination, represented the Senate of Berlin as partner of the GFFA.





Michael Hailu, Director of the CTA (far right), Dr. Qu Dongyu, Vice-Minister of Agriculture of the People's Republic of China (2nd from right), Andrew Mushita, Project manager from Welthungerhilfe in Simbabwe (3rd from right), and Liam Condon, Member of the Board of Management of Bayer (2nd from left) around facilitator Wolf-Christian Ulrich (far left)

of the People's Republic of China, Dr. Qu Dongyu. He explained that China was planning to use digital technologies, for example nationwide broadband expansion, to strengthen rural areas. He said it was particularly important that small producers had access to markets and to the internet. He stated that the use of smartphones in agriculture was revolutionary - comparable with the introduction of tractors. During the panel discussion **Liam Condon, Member of the Board of Management of Bayer AG**, underlined that digital technologies would make it possible both to increase yields and to conserve resources. By way of example, he cited Bayer trial fields, in which it was possible to differentiate digitally between fertile and less fertile soil and to target only the less fertile soil when applying fertiliser. Condon also drew attention to the importance of individual approaches in order to meet the needs of individuals smallholder farmers.

**Michael Hailu, Director of the Technical Centre for Agriculture and Rural Cooperation** agreed and underlined that digitalisation of agriculture was particularly important in Africa. He said that it would be possible to make enormous increases in yields there. He went on to state that management, in particular, could be greatly facilitated by the new technologies.

**Andrew Mushita, Project manager of Welthungerhilfe in Simbabwe**, criticised a focus on industrial power. According to him, thoughts and reflections should take as their starting point the needs of the individual farmers. He said that what is needed is technologies for farmers instead of machines that replace farmers. He stated that data security constituted another risk factor. Mushita suggested that every country should introduce national legislation that secured the corresponding data.



## The Federal Chancellor Angela Merkel at GFFA 2019



The Federal Chancellor Angela Merkel made the case for digital solutions in agriculture.

**Federal Chancellor Dr. Angela Merkel** spoke for the first time at the GFFA in front of agriculture ministers from 74 States and representatives from many international organisations.

The **Federal Chancellor** referred to the fact that having a world without hunger was one of the main sustainability goals for 2030. She said that, in her view, one of the things required to provide food security for a growing world population was the sustainable use of resources. She stated that digitalisation offered great opportunities in this regard. She went on to say that it was therefore important that it was not only large-scale farming operations that took up digital technologies, but that the focus should also be on small and medium-sized enterprises. She stated that digitalisation could in any case serve to make agricultural professions more attractive.

She went on to say that the only way to achieve digitalisation in agriculture is by having powerful infrastructure. The Federal Chancellor said that in her view Germany still had much to do in this regard as well.

She stated that this needed State support, because the expansion of digital infrastructure in rural areas was not a matter that was based purely on market mechanisms. She said that precision farming was a classic example of the fact that high-speed internet connections were needed not only for the farmhouse but also for the farmland as well.



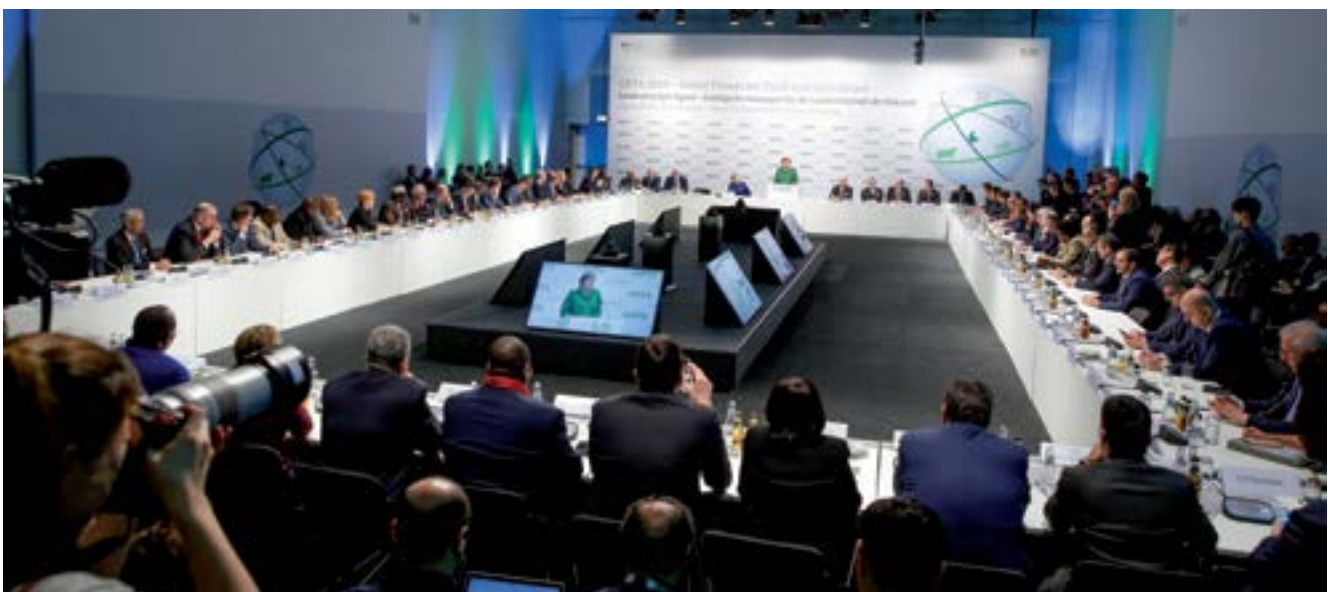
In her welcoming address, Federal Minister Julia Klöckner emphasised the great potential of digital applications. She said that it could enable agriculture worldwide to become more productive and at the same more sustainable and in this way to feed more people.

In respect of the goal of food security, the **Federal Chancellor** left no doubt that the agricultural sector, rich in tradition as it is, had to take a permanent place in the economic development of countries worldwide. She said that so-called developing countries, in particular, could and must increase food production. She continued by saying that the prerequisites for this were, in particular, good governance - as well as an improvement both in access to markets and to operating resources on the one hand and in the investment environment on the other. The **Federal Chancellor** therefore called for active civil societies, co-determination and participation to be viewed as an opportunity. She said that there was also a need for modern, regionally adapted and environmentally sound methods for increasing production and productivity. She stated that innovation was needed to meet the growing demand.

In view of all these challenges, the **Federal Chancellor** emphasised the importance of international cooperation. She said that countries acting on their own would “fail dismally”. She stated that this was also true in respect of the necessary contribution by agriculture to implementing the Paris Climate Agreement in order to limit the increase in global warming to 2 degrees Celsius or less. She went on to say that the reducing emissions in agriculture was, however, difficult, in particular in livestock farming. The **Federal Chancellor** concluded by saying that “we have a long way to go”.



However, she said that the possibilities of digitalisation in general and particularly in precision farming and artificial intelligence would prove valuable in this regard. The **Federal Chancellor** did, however, remind the audience that: “Sovereignty over data will in future decide where value is generated.” She said that it was therefore necessary to create rules for competition in the field of data as well and to take safety precautions for users. She stated that this needed to be solved at global level.



## 4. High Level Panels

The two High Level Panels with ministers and international experts gave international organisations the opportunity of presenting their work on the GFFA topic of “Agriculture Goes Digital – Smart Solutions for Future Farming” in front of 300–500 guests and to discuss possible solutions and challenges. For GFFA 2019, the BMEL

chose the European Commission and the Food and Agriculture Organization of the United Nations (FAO) as hosts. The FAO and the EU Commission presented the results of the discussions at the Agriculture Ministers’ Conference on 19 January 2019.

### 4.1 High Level Panel of the FAO



Food and Agriculture  
Organization of the  
United Nations

#### Utilising the power of digital innovations for youth and family farms

The FAO’s High Level Panel took place first, on Friday, 18 January 2019. The panellists were: **Qu Dongyu, Vice-Minister of Agriculture, China, Aleksandra Pivec, Minister of Agriculture, Slovenia, Ezz El-Din Abu Steit, Minister of Agriculture, Egypt, Luis Miguel Etchevehere, State Secretary of Agriculture, Argentina and a representative of young farmers, Rodgers Kirwa, Kenya.**

The panel identified **challenges and obstacles** that exist for smallholders and family farmers regarding **access** to and use of data and innovative technologies, in order to improve food supplies and food security through country-specific case studies, and also identified **political options for bridging the digital divide** in rural areas. The

panel also defined **tasks and measures** that could be carried out by governments, civil society, the private sector, academia and farmers to deal with these challenges and obstacles in order to create a sustainable benefit for family farms.

The panellists discussed the **current challenges** that could have an impact on the sustainability of agriculture and the livelihoods of millions of family farms, in particular population growth, the non-sustainable use of natural resources, climate change and the greater proliferation of cross-border diseases. They said that this put achieving food security and the Sustainable Development Goals at risk.



The panel discussion (clockwise from bottom left): Facilitator Tanja Busse, Dr. Ezz El-Din Abu Steit, Minister of Agriculture and Land Reclamation in Egypt, Dr. Qu Dongyu, Vice-Minister of Agriculture in the People’s Republic of China, Dr. Luis Miguel Etchevehere, State Secretary of Agriculture in Argentina, Dr. Aleksandra Pivec, Minister of Agriculture, Forestry and Food in Slovenia and Rodgers Kirwa, a lawyer for youth and women in agriculture from Kenya



Facilitator Tanja Busse (far left) in discussion with Dr. Ezz El-Din Abu Steit (2nd from left), Rodgers Kirwa (3rd from left) and Dr. Qu Dongyu (4th from left)



The panel agreed that **digital technologies and innovations had the potential to revolutionise food systems**. If used properly, they could increase the production of nutritious and safe foods, create employment and income opportunities for rural populations, including for young people and women, and protect natural resources. The panel considered access to markets, in particular, as a further opportunity provided by digitalisation. They said that an effective combination of information and communications technologies (ICTs) with corresponding data and knowledge would provide valuable services for family farms and for young entrepreneurs. They went on to say that an increasing number of young entrepreneurs were already developing digital innovations in agriculture that were bringing great economic and social advantages and at the same time could progress poverty reduction, entrepreneurial spirit and culture, job creation, education and food security. They stated that ICTs could help smallholders and family farms to coordinate their production planning, production control and marketing systems via the virtual collection of information and to improve their access to advisory, finance, insurance and market services. They said that innovative ICTs, for example drones, satellite imaging and remote sensors, could help develop early-warning and disaster-prevention models.

They continued by saying that these technologies, together with the use of suitable agricultural methods and the facilitation of transfer systems for agricultural technology, could improve both the preparation and the adaptation of family farms.

They went on to state that while digital technologies and innovations could **play a crucial role in supporting smallholders and family farmers around the world, there were a number of problems preventing those who were most in need of these technologies and innovations from accessing and using them**. They said that these problems could be met through greater support in accessing information and knowledge, through capacity development, through intensifying technological adaptation, and through adopting conducive policies to develop and provide adequate support systems, which would then enable the promise of digital technologies to be fulfilled. The panel maintained that it was important to resolve the issues of data security and the rights of use in respect of data. All agreed, namely, that the handling of collected data was one of the largest unresolved issues.

The panel identified both challenges and obstacles facing smallholders and family farms in respect of access to and use of data and innovative technologies to improve food supply and food security through examples of successful measures, and also identified policy options for bridging the digital divide in rural areas. The panel also defined tasks and measures that could be carried out by governments, civil society, the private sector, academia and farmers to deal with these challenges and obstacles in order to create a sustainable benefit for family farms.

## 4.2 High Level Panel of the European Commission



### Improving market transparency through digital technologies

At the invitation of the BMEL, the European Commission held a ministerial High Level Panel on 18 January. The participants comprised **Phil Hogan, EU Commissioner of Agriculture and Rural Development, Julia Klöckner, Federal Minister of Food and Agriculture, David Littleproud, the Australian Minister of Agriculture and Water Resources, Dr. Luis Miguel Etchevehere, the Argentinian State Secretary of Agro-industry, and Catherine Geslain-Lanéelle, Delegate of the French Minister of Agriculture and Food.** The event was attended by a large number of participants from politics and research, along with representatives of agricultural and farmers' associations, international organisations and non-governmental organisations.



Phil Hogan, EU Commissioner for Agriculture and Rural Development

#### Conclusions from the discussion:

- **Digital technologies are increasingly available across the globe.** The use of these technologies, for example in Africa, South America, Australia and the EU, may help increase value added and make production more sustainable. Digital applications are an important source for farmers to facilitate access to basic and advanced training and to counselling relating to their production.
- **Development of the Sustainable Development Goals (SDGs).** Digitalisation contributes directly to several SDGs (SDG numbers in brackets). No poverty (1), Zero hunger (2), Good health and well-being (3), Decent work and economic growth (8), Responsible consumption and production (12), Climate action (13) and Life on Land (15).
- **Better use of new technologies.** The development of new digital technologies is progressing quicker in regions in which there is a suitable business environment and a sufficient number of providers of digital solutions. The public sector can create the right foundations for this environment and must ensure that the advantages regarding the regions, the farm types and the farm sizes are highly diversified.
- **Handling data is** at the core of farmers' reluctance to embrace the new technologies. There is a fear of putting data security at risk. What is needed are public policies in order to ensure that there is broad access to data for farmers and for small and medium-sized enterprises along the food chain.
- **Future competitive food chains** will be largely dependent on new technologies and the respective data. Technology will in future play a key role in respect of the relationship between farmers and other stakeholders along the food chain. Key fields in which policy makers can contribute to the digitalisation of the agricultural sector include:
  - support in the take-up of technologies through measures on capacity-building, innovation-orientated basic and advanced training, and the exchange of best practices;



Federal Minister Julia Klöckner took part in the discussion as well.

- improvement in access to the internet in rural areas;
- investments in research and development on supporting production, processes and management innovations, and on coping with climate change and other challenges caused by the environment;
- provision of market-relevant data that are available to the stakeholders along the food chain in order to be able to ensure a level playing field and improve the prerequisites for sound investment conditions, including in the digital area;
- support of producer organisations for agricultural produce in their role as drivers of new technologies;
- combating of unfair commercial practices along the food chain and reduction of the negative impact caused by these practices on the income of agricultural producers.



Clockwise from the left: Facilitator Peter Baader, Julia Klöckner, Federal Minister of Food and Agriculture, Phil Hogan, EU Commissioner for Agriculture and Rural Development, Dr. Luis Miguel Etchevehere, the Argentinian State Secretary of Agro-industry, Catherine Geslain-Lanéelle, Delegate of the French Minister of Agriculture and Food, and David Littleproud, the Australian Minister of Agriculture and Water Resources



## 5. Expert Panels

### Expert Panel 1

#### Digital solutions for farming today – How do technological innovations match young farmers' needs?

##### Organisers

→ FarmFacts, World Farmers' Organisation

##### Summary

During the expert panel, representatives of FarmFacts GmbH, a supplier of comprehensive Digital Farming solutions in agriculture, and of ESA (European Space Agency) reported on cutting-edge developments in "Decision Farming". They addressed in detail teledetection via

satellites and the impact and solutions of global digitalisation in agriculture. Afterwards, international experts discussed opportunities and challenges relating to digital solutions in agriculture, above all for young farmers. Their discussion focused on what role agriculture and industry can play for global, ecologically sustainable food production that provides high-quality foods at affordable prices, including in developing countries.

### Expert Panel 2

#### Blockchain: The digital agricultural revolution

##### Organiser

→ Federal Ministry of Economic Cooperation and Development (BMZ)

##### Summary

Everyone is currently talking about the blockchain technology, which has achieved fame as the basis of the cryptocurrency Bitcoin. In simple terms, a blockchain is a continually expandable list of sets of data on transactions that are stored in "blocks" and "chained" to each other. Later transactions build on earlier transactions, with the later transactions being confirmed as correct and proper if they provide evidence of knowledge about the earlier transactions. A blockchain is also not stored on a central server, but is distributed over many different computers - the decentralised node of the (block)chain. The main promises of the technology stem from this mode of operation: a high level of security, a high level of efficiency, and a high level of transparency.

The participants at the expert panel discussed the potential uses of blockchain in agriculture in the context of

development cooperation. The participants agreed that this technology had huge potential but that the success of it still needed to be examined. It was ascertained that the technology could potentially increase transparency along the supply chain, improve the quality of goods and prevent corruption, as a manipulated copy of the blockchain would namely show inconsistencies in the calculations. The participants stated that, in addition to transparency in the supply chain, blockchain could also contribute to price transparency and provide a good basis for evaluations and controls.

There was also agreement on the issue of the conditions that need to be established for the use and benefit of the technology: improve network infrastructure, impart digital know-how, resolve the often inadequate legal framework, support innovations, promote gender equality and privacy rights. They said that it was necessary to address education, as it was education that was key to enabling people to use the knowledge that can be obtained from the data.



## Expert Panel 3

### Agriculture goes digital – together in cooperatives

#### Organisers

- **German Raiffeisen Association e.V. (DRV) in cooperation with DGRV - German Cooperative and Raiffeisen Confederation e.V. and cooperative enterprises**

- the development of cooperative structures;
- foundation of RTK-Verbunds Rheinland;
- activities of a central cooperative to implement Smart Farming;
- use of digital technologies in basic and advanced training.

#### Summary

Cooperatives are able to pick up on state-of-the-art technologies such as digitalisation and enable their members to use them. The greater the support they provide for their enterprises, the greater the success in this regard. Representatives of German cooperative enterprises provided practical examples of this:

The many and diverse experiences in Germany could serve as a model for future activities - also and particularly in emerging and developing countries. There was agreement that cooperatives worldwide can create sustainable solutions and provide smallholders with access to technical advances. International cooperation is imperative in this context.

## Expert Panel 4

### How can digital agriculture foster resource-efficient and environmentally-friendly food production?

#### Organisers

- **The Brazilian Trade and Investment Promotion Agency (Apex Brazil)**
- **Brazilian Agricultural Research Corporation (EMBRAPA)**
- **Brazilian Ministry of Foreign Affairs**
- **French National Institute for Environmental and Agricultural Science and Research (IRSTEA)**

#### Summary

The panel focused on the issue of how digital agriculture can contribute to a resource-conserving and ecologically friendly food production. The international community will in 2050 have to face the challenge of feeding around

10 billion people efficiently and sustainably. The participants said that chemical solutions to food production had many negative effects on human health and on biodiversity and that there was considerable mistrust about such pesticides in the population. They went on to say that greater use would therefore be made of alternative plant protection methods, but that many of these still had to be developed. They stated that digitalised processes could make a significant contribution at this point to increasing yields without being dependent on the use of chemical pesticides. The discussion also highlighted risks: the participants feared a loss of jobs, a concentration of large-scale enterprises and a further expansion of agricultural land.

## Expert Panel 5

### Blue skies for green farms

#### Organiser

→ **Global Research Alliance on Agricultural Greenhouse Gases (GRA)**

#### Summary

185 countries have to-date ratified the Paris Climate Agreement that was adopted in 2015; 197 countries are signatories to the United Nations Framework Convention on Climate Change that was adopted in 1992. They have undertaken to reduce greenhouse gas emissions and support climate change adaptation. According to the Paris Agreement, man-made global warming is to be limited to significantly less than 2 degrees Celsius compared with pre-industrial levels, or better still to 1.5 degrees Celsius.

Agriculture is being severely affected by climate change; however, significant demands are also being made of agriculture in respect of a reduction of greenhouse gases, and agriculture must utilise its potential for reduction under the given economic conditions. However, plausible paths of agricultural development, with the accompanying reduction effects, will only achieve 21 to 40 percent of the necessary reduction in emissions. Transformative technical solutions are therefore needed. The lively discussion focused on aligning the work of the Global Research Alliance on Agricultural Greenhouse Gases (GRA) to agricultural requirements in the fields of livestock, plant production and digitalisation.

## Expert Panel 6

### Digital farming: Challenges and opportunities for farmers on the way towards more sustainable food systems

#### Organiser

→ **Swiss Federal Office for Agriculture (FOAG)**

#### Summary

The expert panel discussed what influence the digitalised future of agriculture would have on the professional profile of farmers and what effects it would have on smallholder farms. The aim of the forum was to make the ambivalence of digitalisation apparent - potential and advantages, but also effects and issues of data security.

To this end the participants discussed the necessity of strategies to close the “digitalisation gap”, for example between urban and rural areas, or between North and South. The following discussion, involving both panellists and audience, focused predominantly on the shift in the professional profile. They stated that farmers would become data managers, that office and farm work would become less important and the concept of lifelong learning would gain in importance.

## Expert Panel 7

### Technology, tracking and traceability in animal health: How digitalisation improves our ability to protect against disease, advance well-being of farm animals and support livestock production

#### Organisers

- **HealthforAnimals – a global association for the health industry**
- **Bundesverband für Tiergesundheit e. V. (BfT)**
- **European association for the animal-health industry**

#### Summary

At this expert panel, experts from different institutions and from animal-health enterprises presented the different facets and potential solutions in respect of which digitalisation could provide assistance for animal health and sustainable animal production. They stated that enterprises could, via computer-assisted animal production, record the behaviour and performance of the individual animals and of the entire herd, ideally in real time. They went

on to say that changes in the sounds in the animal stalls (sound analysis) permitted inferences to be made regarding animal welfare and diseases to be detected at an early stage. They stated that the collection, monitoring and analysis of health data using new digital diagnosis tools meant that farmers could make great advances in detecting and controlling animal diseases. They continued by saying that the identification and traceability of animals was possible via codes, transponders or RFID (radio-frequency identification) chips. The discussion emphasised that the systems could not replace personal contact with the animals, but that they would provide important assistance. The participants said, however, that much more infrastructure would need to be made available before these systems could put into widespread use.

## Impressions



Representatives of FarmFacts and the World Farmers' Organisation WFO with facilitator Dr. Andreas Quiring (4th from right) present innovative ideas at expert panel 1 on "Digital solutions for farming today - How do technological innovations match young farmers' needs?"



At expert panel 6 on "Digital farming: Challenges and opportunities for farmers on the way towards more sustainable food systems", from left: Dr. Jean-Marc-Chappuis (Swiss Federal Office for Agriculture), Mwila Kangwa (AgriPredict Solutions), Dr. Tanja Busse (facilitator), Dr. Karin Nichterlein (FAO), Prof. Dr. Engel Hessel (BMEL) and Dr. Martin Keller (funaco Switzerland)



Expert panel 2 on "Blockchain: The digital agricultural revolution"



The blockchain technology was the focus of expert panel 2 with Dr. Maria Flachsbarth, Parliamentary State Secretary to the Federal Minister for Economic Cooperation and Development.



The audience at expert panel 2 were interested in the blockchain technology.



A full hall at expert panel 2



Prof. Dr. Engel Hessel, the Commissioner for Digitalisation at the BMEL, took part in expert panel 6 on “Digital farming: Challenges and opportunities for farmers on the way towards more sustainable food systems”.



The participants in expert panel 3 on “Agriculture goes digital - together in cooperatives”

## Expert Panel 8

### Big data for smallholder agriculture transformation

#### Organisers

- **The Technical Centre for Agricultural and Rural Cooperation (CTA)**
- **Food and Agriculture Organisation of the United Nations (FAO)**

#### Summary

The potential of digital data, in particular big data, for transforming smallholder agriculture was the subject of the expert panel organised jointly by the **Technical Centre for Agricultural and Rural Cooperation (CTA)** and the **Food and Agriculture Organisation of the United Nations (FAO)** during GFFA 2019.

The organisers said that the future of agriculture showed that digital values would one day have the same level of recognition and value as physical values - in particular if we ensure a sustainable way forward for the sector. They continued by saying that farmers could not farm without land, and up-to-date data on soil and crop conditions, weather, pests, diseases and many other factors.

The participants stated that agriculture should become more data-orientated in order to support the decisions of farmers at critical moments. They said that these decisions could support the lives of around 500 million smallholders around the world. They went on to say that big data had the potential to bring together data fragments, resources and services to support agriculture. The experts were in agreement that big data was not a threat but was a catalyst for the transformation of smallholder agriculture. They stated that a digital farmer profile brought together extensive data about a farmer and his / her farm. They said that these profiles and relevant

apps for smartphones meant that farmers could access harvest models, precipitation and soil information, along with many other data services. At the same time, there is, as the event showed, no consensus regarding many issues, including who should manage the data and how this should be regulated.

“Farmers’ reservations are often the same as consumer concerns regarding the security and protection of their data”, said **Raimund Jehle, deputy head of the FAO Regional Office for Europe and Central Asia**, in his speech at the opening of the panel discussion. Jehle drew attention to the fact that although agriculture had enormous information potential, it was not yet completely digitalised.

“Digitalisation of agriculture, bringing together the opportunities provided by big data analysis, the advantages of digital services and solutions and the promise of business development, could increase productivity, raise income, increase resilience to the climate and improve the inclusion of women and young people in agriculture,” said **Benjamin Addom from CTA** in the panel’s keynote speech.

The expert panel also addressed the particular challenges in respect of the use and analysis of geo-satellite data for smallholders and the role of international organisations in this context. This relates for example to rights of property and use, but also to costs etc. It was recommended that governments, international organisations and other development partners should play a key role in order to make data and technologies available, accessible and affordable.

## Expert Panel 9

### Digital transformation in the global agri and food business – prospects and challenges for entrepreneurs

#### Organiser

→ GFFA Berlin e.V.

#### Summary

The expert panel focused on the prospects and challenges facing entrepreneurs as a result of the digital transformation. Stakeholders from the private sector articulated their demands and wishes in respect of new digital applications. The discussion concentrated on

potential solutions regarding the integration of digital applications. The participants stated that the most important issue in this respect comprised consumer expectations regarding agriculture, which vary in different countries and at different life stages. They went on to say that technology needed to be adapted accordingly. The discussion following the technical presentations dealt with reservations relating to data security and data sovereignty.

## Expert Panel 10

### Going digital against the drought – new technologies and challenges in their implementation

#### Organisers

- Working group on the agricultural sector at the Committee on Eastern European Economic Relations in the German Eastern Business Association (GAA)
- Leibniz Institute of Agricultural Development in Transition Economies (IAMO)
- Sino-German Agricultural Centre (DCZ)

#### Summary

The expert panel consisted of presentations on digital solutions for dealing with harvesting losses caused by climatic changes. The expert panel outlined classic and new forms of risk management and discussed their suitability

for strengthening the resilience of agricultural production to climatic changes. Another focus was on the adaptation of risk management systems by producers. The participants said that, in addition to cost effectiveness, it was important that farmers understood the way the systems worked and that the systems were adapted to the farmers' specific needs. The discussion emphasised the potential of digital solutions in dealing with current challenges caused by droughts. On the other hand, the experts also emphasised the challenges in respect of the technical infrastructure, user know-how and the precise algorithms, which needed to be expanded and developed by research, industry and policy makers.

## Expert Panel 11

### Digital technologies for food value chains: Potential and barriers

#### Organisers

- Leibniz Research Alliance “Sustainable Food Production and Healthy Nutrition”
- Organisation for Economic Cooperation and Development (OECD)

#### Summary

In view of the diverse potential that digitalisation offers for providing greater sustainability and transparency along the food value chain, the experts focused in particular on issues relating to the effective use of digital technologies to implement and improve sustainability

and transparency in all sections and areas of the value chain. They identified time-intensive information management, in particular in data analysis, as the greatest challenge on the way to achieving effectiveness. They said that this would in future have to be carried out to a greater extent by AI systems. They stated that one obstacle to digital technologies for the food value chain was the lack of compatibility between already existing systems. The discussion also took a critical look at proprietary rights relating to data.

## Expert Panel 12

### Digitalisation: Utopia or dystopia? The end of the resource crisis or unlimited corporate power over our food?

#### Organisers

- INKOTA-netzwerk
- Bread for the World
- German NGO Forum on Environment and Development

#### Summary

Two NGO representatives described in their inputs how their everyday lives in the Philippines and Tanzania are influenced by the digitalisation process in agriculture. An app for exchanging agro-ecological cropping practices, which was developed by smallholder producers, was presented as an example of an alternative model to the technological North-South knowledge transfer. They then discussed with an agro-ecologist from Switzerland and an expert from Germany how potential advantages of digitalised agriculture, such as increases in yield and

efficiency, but also existing challenges, could be handled. The discussion focused in particular on whether digitalisation was able to help reconcile the conflicting aims of efficiency increase and sustainability. They referred in this regard to the threat to smallholder livelihoods posed by the loss of sovereignty over data, the trend towards corporate groups holding monopolies and the replacement of workers by digitally-controlled machines. It remained unresolved how and whether digitalisation could be implemented in a resource-neutral manner and contribute sustainably to fighting hunger and protecting biodiversity. There was agreement that it was necessary to have an international regulation on digitalisation, to establish independent and democratically controlled digital data platforms, to have strongly regulated data protection, to tighten competition law and to have state support for technologies that explicitly benefit agricultural producers.



## Expert Panel 13

### Digital transformation and funding: Creating opportunities for African farmers

#### Organisers

- The German-African Business Association
- German Agribusiness Alliance

#### Summary

Investments in the agricultural sector are regarded as the most efficient and most effective method to combat poverty and promote food security. The panel participants stated that sixty-five percent of workers in Africa were employed in agriculture and that they contributed a third of the continent's GDP. However, they said that

the workers were technologically very underdeveloped, and that this gap needed to be overcome. They went on to say that access to adequate funds was a great obstacle for smallholders and that at the moment only 1 percent of bank loans went to the agricultural sector; they stated that digital funding solutions could help, as shown by the example of **Farm Drive Kenia**, and also experiences from India. They went on to say that digital funding solutions could modernise the agricultural sector and that this would make the sector an attractive employer for the young population.

## Expert Panel 14

### What is cooking: Re-thinking farm and food policy in the digital age

#### Organiser

- World Bank

#### Summary

This expert panel focused on the process of rural transformation as a key to fighting poverty and improving livelihoods in rural areas. The participants said that the changes triggered by digital technologies had an impact on agricultural enterprises and were usually linked to

gains in productivity and efficiency, lower costs and improved agricultural knowledge. They said that, for instance, the Philippine Agriculture Ministry had provided an online tool that showed on a map the regions that were most suitable for a particular fruit. They stated that this enabled the best-possible yield to be achieved. The discussion also emphasised the importance of standardising processes and the inclusion of young people.

## Impressions



A full hall at expert panel 8 on “Big data for smallholder agriculture transformation”



At expert panel 9 on “Digital transformation in the global agri and food business - prospects and challenges for entrepreneurs”, from left: Liam Condon, Member of the Board of Management of Bayer AG and head of the Crop Science Division, Andreas Dörr, farmer – Doerr-Agrar, facilitator Charlotte Smith, Ajit Mathai, a founding partner of mbyom.com and Stefan Canz, Nestlé Corporate Agriculture Lead on Water



At expert panel 11 on “Digital technologies for food value chains: Potential and barriers”, from left: Terry Martin, Cornelia Weltzien, Sian Thomas, Shivani Kannabhiran, Prof. Dr. Hermann Lotze-Campen and Diane Taillard



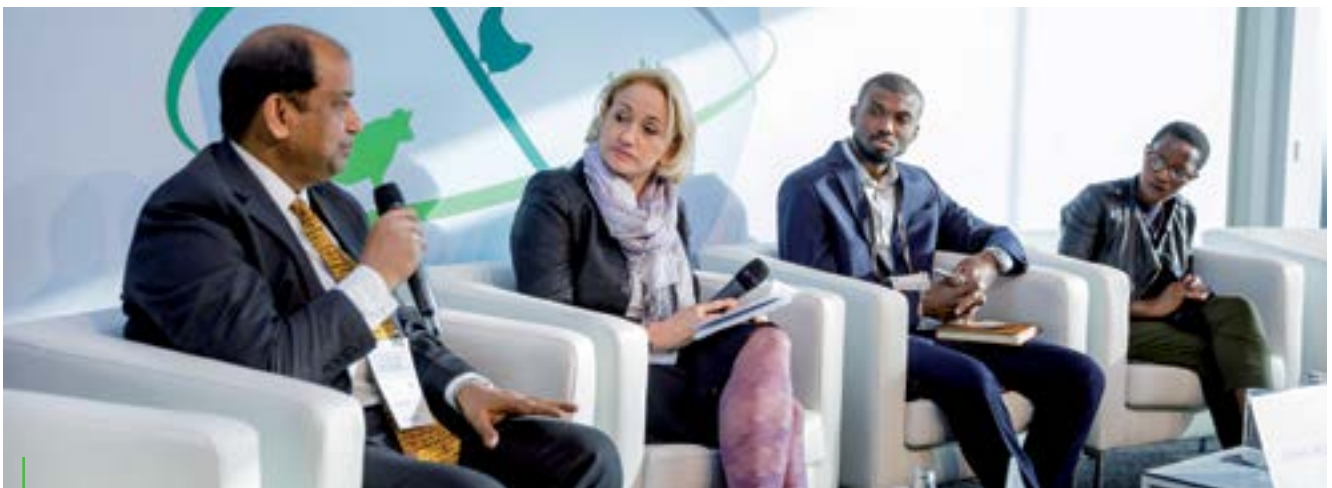
Discussion at expert panel 13 on “Digital transformation and funding: Creating opportunities for African farmers”



Chinese delegation at expert panel 10 on “Going digital against the drought – new technologies and challenges in their implementation”



Participants at expert panel 12 on “Digitalisation: Utopia or dystopia? The end of the resource crisis or unlimited corporate power over our food?”



Discussion at expert panel 13 on “Digital transformation and funding: Creating opportunities for African farmers”

## 6. Workshop “Sustainable livestock goes digital”

The workshop “Sustainable livestock goes digital” was held by the **Global Agenda for Sustainable Livestock (GASL)**, the **Food and Agriculture Organisation of the United Nations (FAO)**, the **World Organisation for Animal Health (OIE)** and the **International Livestock Research Institute (ILRI)**. It served as a bridge between GFFA 2018, which was on “Shaping the future of livestock – sustainably, responsibly, efficiently”, and this year’s GFFA on “Agriculture Goes Digital – Smart Solutions for Future Farming”. The organisers therefore responded to the call in the 2018 ministerial communiqué for the GFFA results to continue to be developed subsequent to the conference.

The workshop focused on four subject areas: food security; animal health and welfare; livelihoods and economic growth; and climate change mitigation and resource conservation. **Henning Steinfeld (FAO)** specified the most important challenges in each of the four subject areas and identified possibilities for digital solutions.

The speeches by the other three panellists, each with the same structures (challenge, solution, going to scale,

results) dealt with various different aspects of the subject:

**Dieter Schillinger (ILRI)** discussed how the collection of phenotypical indicators by mobile phone, in conjunction with high-end genome analysis, facilitated the identification of animal better suited to cross breeding, which could help increase milk yield in cattle in Ethiopia and Tanzania.

**Fritz Schneider (GASL)** spoke about AI-based approaches for increasing livestock productivity, and about blockchain to fight food wastage. He emphasised the necessity for all those concerned along the value chains to be included regarding the implementation of the new technologies. A multi-stakeholder approach, as supported and promoted by GASL.

**Jean-Philippe Dop (OIE)** concentrated on animal health and welfare. He stated that online tools, such as those developed by the OIE, enabled global monitoring of animal diseases and the use of antimicrobial agents, were rapidly becoming normality and had great potential to improve animal welfare.



Dieter Schillinger (far right), Henning Steinfeld (2nd from right), Fritz Schneider (3rd from right) and Jean-Philippe Dop (4th from right) answered the questions from the audience.

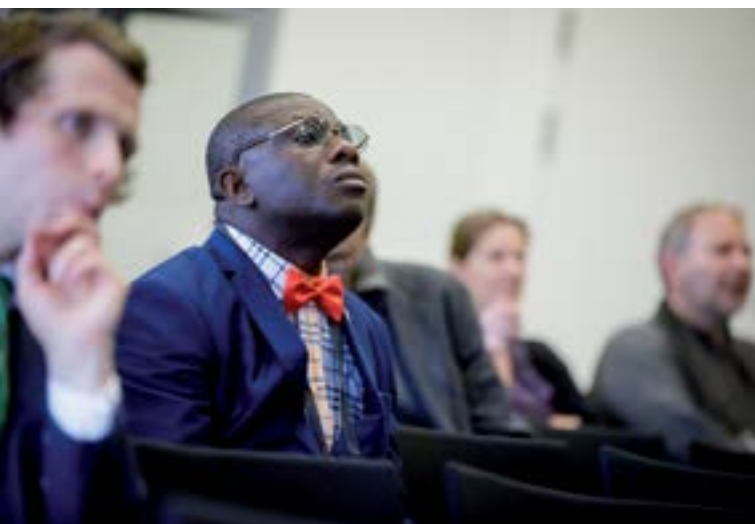


A discussion between young farmer Sarah Crofoot from New Zealand and the audience

The following discussion between young farmers and the audience clearly showed the challenges that exist on the way to digitalised, sustainable livestock farming:

For instance, there was a call for data to be handled appropriately. The participants also said that corresponding tools should be geared to the needs of the respective final users. They went on to say that the need for a reciprocal flow of information should be recognised.

They stated that the integration of data from different sources constituted a further challenge. The discussions also addressed focussing more closely on basic and advanced training, on the inclusion of all stakeholders and on issues of data security and data sovereignty.



## 7. Side Event hosted by the World Trade Organisation WTO

### Out of the deadlock – new visions for agricultural trade



On 18 January 2019, a panel discussion entitled “Out of the deadlock – new visions for agricultural trade” was held as a side event during the GFFA. The event aimed to find solutions to the deadlock in WTO agricultural negotiations.

All participants underscored the vital importance of a rule-based trade system to fight hunger, particularly with a view to UN Sustainable Development Goal 2. The participants took the view that the WTO had greatly contributed to the reduction of tariffs and trade-distorting agricultural subsidies. However, the panellists unanimously agreed that further reforms were required. The **Deputy Director-General of the WTO, Alan Wm. Wolff,**

called on the one hand for a more rational debate (also through enhancing transparency) while **John Clarke, Director of International Affairs from DG Agriculture at the European Commission,** raised the issue of reforming the special treatment provisions for developing countries (from which relatively well-developed countries such as China also benefitted). **Minister of Agriculture Ndanema from Sierra Leone** thought that technical (non-financial) support of developing countries played a pivotal role in strengthening their international competitiveness. **Hendrik Burgois,** the business representative, recommended bringing the controversial debate on trade policy more closely into line with sustainability issues. He called for further trade facilitation measures.



Professor Gabriel Felbermayr from the ifo Institute in front of a captivated audience

In his opening remarks, **Dr. German Jeub, Director-General at the Federal Ministry of Food and Agriculture (BMEL)**, highlighted the significance of the topic regarding the fight against hunger. He said that only rule-based agricultural trade could ensure that the UN Sustainable Development Goals were met. Following the failure of the most recent WTO Ministerial Conference in Buenos Aires and the rising protectionism in many countries, Dr. Jeub argued this was now a crucial moment to address this issue.

**Professor Felbermayr** the key note speaker from the ifo Institute for International Economics, called for a solution to the protracted WTO agriculture negotiations. Regarding food security, he compared free agricultural trade with an insurance scheme: He argued that trade could balance out crises such as harvest losses. In his opinion, EU agricultural subsidies did not pose a threat for developing countries since, among other factors, they tended to hinder the optimisation of their agricultural structures, resulting in higher prices.

On the panel, **Minister Joseph Ndanema** represented the standpoint of the developing countries. He gave the example of the agricultural sector, a key pillar of his country's economy, which was not competitive at global level and required technical support (less so financial support). In his view, technical innovations were required to raise productivity; this also applied to digitalisation, the subject of the GFFA.

**DDG Alan Wm. Wolff** underlined the enormous contributions of the WTO Agreement on Agriculture to a global dismantling of agricultural subsidies. He argued that now, however, more reforms were needed. According to Wolff, this would work best by making the

debate more pragmatic and enhancing transparency – a path followed by the new chair of the WTO agricultural negotiations, ambassador John Deep Ford. **Wolff** also underscored the role of a rule-based trade system for combating hunger. He pointed out that no progress had been made over the past ten years in this regard and that non-tariff barriers were on the rise around the globe. Against this backdrop, he argued, compliance with food standards, the introduction of technological innovations and digitalisation were vital for future negotiations.

**John Clarke** considered the WTO Agreement on Agriculture as a useful public good. He believed that the challenges with regard to continuing the negotiations originated in the mandates of the WTO members. According to **Clarke**, the special treatment of developing countries was crucial but should not lead to countries such as China being granted the same leeway as developing countries with structural deficits. He said that economic partnership agreements were a helpful instrument to meet the exact needs of developing countries.

**Hendrik Burgois**, representing industry, demanded that the trade system should be based on rules instead of power. He argued that in the face of growing criticism of trade, the trade policy narrative must be geared towards sustainability and responsibility (less on growth). He also considered food security and the fight against hunger as a problem of distribution instead of a production problem and trade as part of the solution. **Burgois** also called for facilitation in international trade (e.g. customs requirements). He stated that digitalisation could play an important role in this regard. He also agreed that the WTO members had lost sight of the big picture in the negotiation process.

## 8. Task Force Rural Africa

### EU-Africa-Alliance in agriculture – the way forwards

Relations with Africa are of great importance in EU external relations. The results of the 5th Africa-EU summit in November 2017 and the Joint Declaration as a guiding principle for cooperation up until 2020 clearly show that the cooperation in agriculture is vital for a sustainable future.

The European Union goes well beyond the “norm” in their relations with Africa. The traditional model of developmental cooperation is currently being rethought, in order to give developmental aid and trade relations with a greater focus on “investments and the political dialogue”.

“Agricultural and rural development” and “International cooperation”, two Directorate-Generals of the European Commission, launched the **Task Force Rural Africa (TFRA)** in early 2018, a group of high-ranking experts in the fields of agriculture and rural development in Africa and Europe.

**Tom Arnold, chair of the TFRA**, underlined the crucial role that the agricultural sector, the food sector and rural development played in view of the huge challenge of creating jobs for young people in Africa. He drew attention to Africa’s diversity and to the major challenge of dealing with the structural transformation of these sectors in the context of globalisation and climate change.



Panel participants with TFRA chair Tom Arnold (3rd from right)



The Task Force Rural Africa focuses on establishing a strong Africa-EU partnership for an inclusive and sustainable development of the agricultural sector, the food sector and the rural economy and on conducting a dialogue with and between stakeholders.

The TRFA has identified the following strategic action areas:

- a territorial development strategy for the creation of employment and income
- sustainable management of land and natural resources along with climate stewardship measures
- the sustainable transformation of African agriculture, and the development of the African food industry

The recommendations of the Task Force were commented on by **José Graziano da Silva** (Director-General of the FAO) and **Elizabeth Nsimadala** (Chair of the Eastern Africa Farmers' Federation).

The event was brought to a close by **Phil Hogan, EU Commissioner for Agriculture and Rural Development**. He underlined that the TFRA was a joint initiative of the EU and the African Union and stated his wish to develop deeper European-African cooperation in the fields of food and agriculture in future.



TFRA members Albert Engel (far right) and Bruno Losch (2nd from right) discussed with TFRA chair Tom Arnold (far left).

## 9. Innovation Market and Business Lounge

### Tried-and-tested concepts with new features

GFFA 2019 also featured an innovation market, which took place in the CityCube on 17 and 18 January 2019. Around 25 relevant associations, enterprises, executing agencies, higher-education institutions and ministries had the opportunity to present their projects, developments and ideas on the subject of “**Agriculture Goes Digital – Smart Solutions for Future Farming**” to the approximately 2000 guests at the GFFA. The exhibitors were from fields such as agricultural engineering, precision farming, research, consulting and investment promotion. They seized the opportunity to display their international work in the food and agricultural sectors, maintain existing relations and establish new contacts.

The exhibiting companies also had the chance of presenting their own activities in the form of a short speech on the Future Forum stage. Additionally, the business lounge in the lower level of CityCube provided another seating area for relaxed talks and discussions.

**Federal Minister Klöckner and Parliamentary State Secretary Michael Stübgen** visited the stands at the innovation market and showed great interest in the ideas for meeting particular agricultural challenges.



Michael Stübgen, Parliamentary State Secretary at the BMEL, during his tour of the innovation exchange



Federal Minister Julia Klöckner during her tour of the GFFA



The business lounge was used for talks by the entrepreneurs attending the GFFA.

## Exhibitors at the Innovation Market of the GFFA 2019

*ADT Project Consulting GmbH*

*AFC Agriculture and Finance Consultants GmbH*

*Agentur für Wirtschaft & Entwicklung (AWE)*

*AHT GROUP AG*

*Apex-Brasil*

*Bundesverband DEULA*

*BVVG Land Realisation and Management Company GmbH*

*CTA (Technical Centre for Agricultural and Rural Cooperation)*

*DEULA-Nienburg*

*DKE-Data GmbH & Co. KG*

*DLG International GmbH*

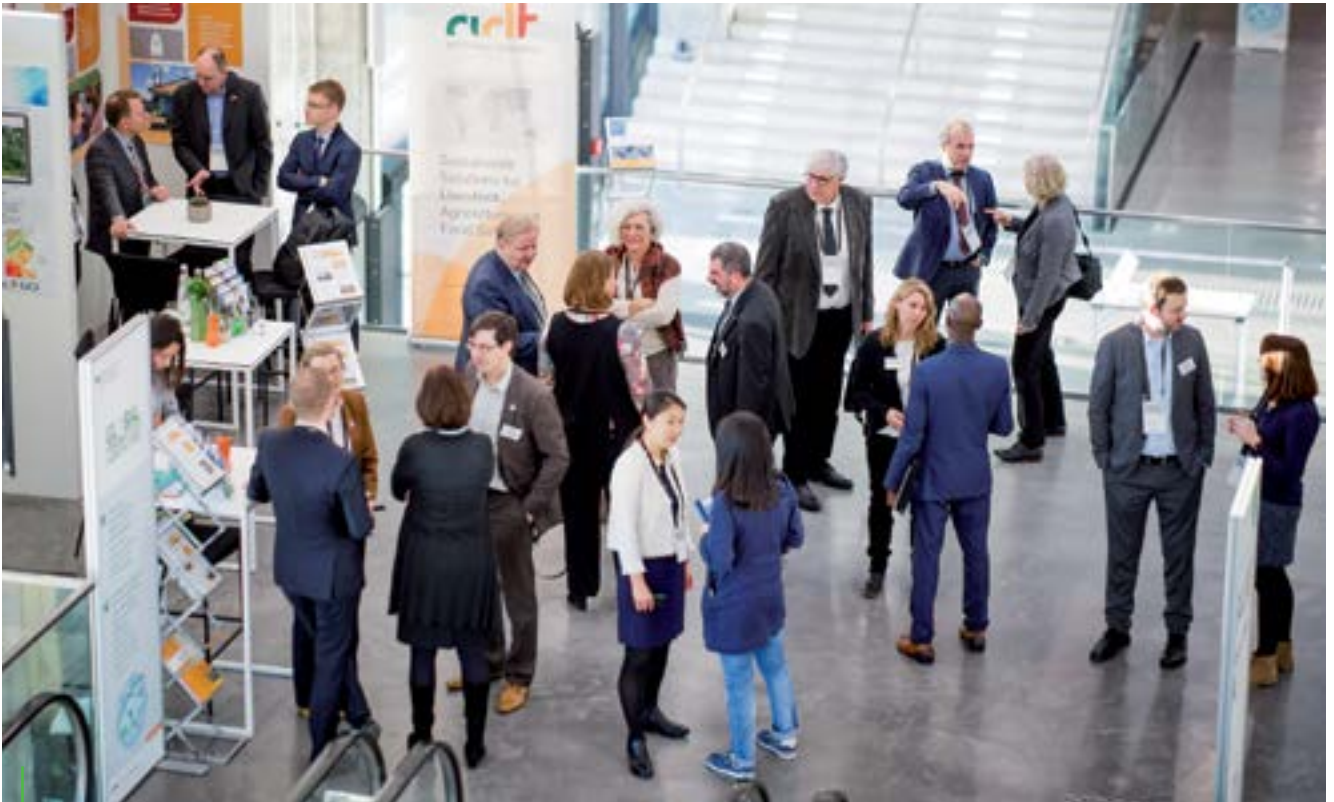
*Ekosem-Agrar AG*

*Ekosem-Agrarprojekte GmbH / German-Russian Agricultural Policy Dialogue*

*Ekotechnika AG*

*Federal Ministry of Food and Agriculture (BMEL)*

*Federal Ministry of Labour and Social Affairs (BMAS)*



A large number of exhibitors presented their projects.

## Exhibitors at the Innovation Market of the GFFA 2019

*Federal Office for Agriculture and Food (BLE)*

*Federal Statistical Office / Bonn office*

*Food and Agriculture Organisation of the United Nations (FAO)*

*German Agency for International Cooperation (giz)*

*GFA Consulting Group GmbH*

*GRIMME Landmaschinenfabrik GmbH & Co. KG*

*Nürtingen-Geislingen University (NGU)*

*IAK Agrar Consulting GmbH*

*ICON-INSTITUTE GmbH & Co. KG*

*PÖTTINGER Landtechnik GmbH*

*RIELA Karl-Heinz Knoop e.k.*

*SGS INSTITUT FRESENIUS GmbH*

*The Regional Rural Development Standing Working Group (SWG) in South East Europe*

*UN World Food Programme Innovation Accelerator (WFP)*

## 10. Future Forum

### Innovative exhibition format for start-ups in the agricultural and food sectors

The Future Forum took place this year for the first time. It is a new format, intended to bring the growing number of start-ups in the food and agricultural sectors into contact with the GFFA.

This innovative format, combining a contemporary exhibition area and an open stage, offered a lively setting for an interactive exchange between tried-and-tested and innovation. The exhibitors were invited to present their ideas via short speeches and facilitated interviews on the stage.

Emerging start-ups, including a company from Argentina, targeted this event hosted by the BMEL as an opportunity to present their digital products and service, to exchange experiences and to establish new contacts with potential partners from home and abroad.

The exhibitors' innovative products and ideas at the Future Forum also attracted high-level attention and media coverage during the tour of the event by Federal Minister Klöckner and Michael Stübgen, her Parliamentary State Secretary.



A technical discussion on stage



Parliamentary State Secretary Michael Stübgen enquires about the start-up ideas.



Federal Minister Julia Klöckner gains a personal impression of the Future Forum.

## 11. Science Slam “Think Aloud!”

### Hands-on science at the first “Think Aloud! – GFFA Science Slam”

The “Science Slam” was the first of its kind to be held at GFFA. Scientists from the food and agricultural sectors introduced themselves in **Hall 23a on 18 January 2018** to a knowledgeable audience from a number of universities and colleges and gave brief presentations of their research work on the subject of “Agriculture goes digital”.

Based on “poetry slams”, which have now become firmly established in Germany as well, an audience of around 100 then decided at the end whose presentation had been the best. Their decision was based not just on the scientific content of the ten-minute speeches, but also on their comprehensibility and entertainment value.

The BMEL invited scientists from a number of different research institutions to the Science Slam; they are researching into digital solutions for tomorrow’s agricultural and food sectors from different angles:

- **“From weather proverbs to big data”**: Falk Böttcher from Germany’s National Meteorological Service (DWD) in Offenbach explains how hundred thousands of data from weather and radar stations, aeroplanes and ships, buoys and balloons are brought together every day in order to forecast the weather for the days ahead.
- **“The struggle with slugs”**: Jobst Gödeke from the Institute for Application Techniques in Plant Protection at Julius Kühn Institute (JKI) shows how field robots help to control slugs and mice in fields in an environmentally sound manner. The robots can not only “predict” the behaviour of the pests, but also lay out bait in a targeted manner.
- **“Transparent vines”**: Dr. Anna Kicherer from the Institute for Grapevine Breeding at Julius Kühn Institute (JKI) has worked with her team to develop sensors which robots can use for example to determine the quality of grapes and automatically record and document different diseases that affect vines.
- **“Virtual cows and pigs for safe food”**: Dr. Jorge Numata from the Federal Institute for Risk



from left: Dr. Manuela Zude-Sasse, Dr. Anna Kicherer, Dr. Jorge Numata, Jobst Gödeke und Falk Böttcher

**Assessment (BfR)** demonstrates how computer models can be used to trace residues of chemicals in beef and pork and consequently ensure that food is safe.

- **“Making fruit trees speak”**: Dr. Manuela Zude-Sassa from the Leibniz Institute for Agricultural Engineering and Bioeconomy shows how flying robots and sensors on the fruit and branches of the fruit trees communicate with one another. This enables stewardship measures regarding the trees to be optimised and the use of fertilisers and plant protection agents to be reduced.

In Halle 23a, the audience rewarded the two winners of the first GFFA Science Slam at the International Green Week, who ended up level on points, with a large round of applause. **Dr. Jorge Numata** from the Federal Institute for Risk Assessment received the joint highest number of points from the audience for his entertaining presentation on the subject of “Virtual cows and pigs for safe food” along with his fellow competitor **Dr. Anna Kicherer** from the Julius Kühn Institute for Grapevine Breeding, who also won over the audience with her exciting talk on “Transparent vines”.

All those involved were thrilled by the event format and expressed great interest in more events of this kind.

## 12. International Young Farmers' Forum



Michael Stübgen, Parliamentary State Secretary at the BMEL, talking to the young farmers.



Discussion during the forum

Following on from the last two years, **Federal Minister of Food and Agriculture Julia Klöckner** invited young farmers from across the globe to the GFFA in Berlin for the third Young Farmers' Forum. The young farmers used the forum for a constructive and intensive exchange of experiences on this year's GFFA topic.

The focus of the meeting was to draw up a joint declaration by the young farmers that covered their positions and formulated their demands of policymakers. The declaration was presented and handed over to the attending ministers during the 11th Berlin Agriculture Ministers'

Conference by **Martha Agyemang from Ghana and Tero Sarkala from this year's IGW partner country Finland** on behalf of the rest of the group of young farmers.

The 21 young farmers were selected in cooperation with the German Farmers' Association (DBV) and the World Farmers' Organisation (WFO). Their fresh ideas provided the high-ranking policy makers with food for thought and gave impetus to the subjects that are particularly important to farming's younger generation. They used their opportunity to feed their ideas into the political process.



# Statement of Young Farmers 2019 to GFFA Ministerial Conference



The young farmers at GFFA with Federal Minister Julia Klöckner

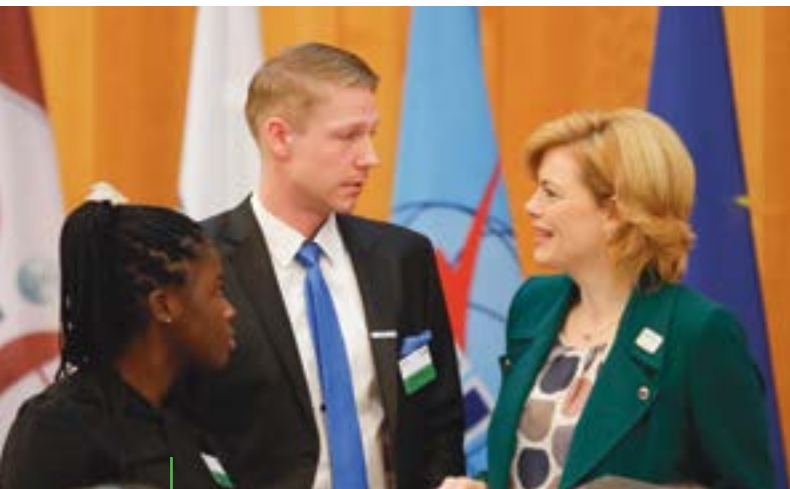
As young farmers from around the world, we have gathered in Berlin to discuss the topic of: “Agriculture Goes Digital – Smart Solutions for Future Farming”.

With an ever increasing population and demand for good quality, safe food from a decreasing amount of available land, farmers need to improve their productivity and efficiency. Digitalisation has a role to play in this.

Digitalisation is the process of collecting and converting information into a relevant and useful data resource.

As young farmers we see digitalisation on three levels:

1. For the individual farmer to collect and utilise information within their farm business;
2. Sharing information with other farmers to help improve performance;
3. Connecting with consumers and all other relevant stakeholders.



Young-farmer representatives Martha Agyemang from Ghana and Tero Sarkala from this year's IGW partner country Finland presented their final statement during the conference.

**Digitalisation and the use of technology on farms creates many opportunities including improved profitability, productivity, traceability, resource-use efficiency and positive environmental outcomes. Digitalisation helps to introduce the younger generation to agribusiness.**

**The most important challenges we are facing in regard to agricultural digitalisation are inadequate infrastructure, skills and training, data ownership and accessibility.**

**To address these challenges we would like your attention, support and the implementation in your countries of the following:**

1. **Ensure adequate and ongoing investment in up-to-date infrastructure, including broadband, cell reception and power.**
2. **Invest and support skills and capability development. This can include training for farmers so they have the skills to utilize technology.**
3. **Include in legislation protection for the following principles in relation to farmer data:**
  - **Farmers maintain ownership of their data**
  - **Farmers provide permission to who has access to their data, and can request their data to be deleted at any time**
  - **Common data standards to ensure easy sharing between programmes**
4. **Consult and collaborate with farmer organisations regarding legislation, skill development and new technologies.**
5. **Ensure technology is accessible and affordable to all farmers regardless of scale, sector or location.**

**We, young farmers of the world, are eager to work in collaboration with the government, the private sector, research institutions and each other. Let's mobilize the talent and dedication of our generation to ensure agriculture is equipped to prosper now and in the future.**

**We thank the German Ministry of Food and Agriculture for the invitation to take part in this special event. We appreciate the opportunity to engage in the discussion and urge you to keep involving young farmers and their representative organizations in the future.**

**19 January 2019**

## 13. Berlin Agriculture Ministers' Conference 2019



The Agriculture Ministers' Conference took place in the Federal Foreign Office.

The political highlight of the GFFA was the **Berlin Agriculture Ministers' Conference** which was not open to the public; it was held on Saturday 19 January 2019 and attended by 74 ministers and 12 high-level representatives of international organisations. The participating ministers unanimously adopted a final communiqué containing recommendations for action, commitments and resolutions on the subject of "Agriculture Goes Digital – Smart Solutions for Future Farming".

The communiqué was subsequently presented by **Federal Minister of Agriculture Julia Klöckner** to the **Japanese Agriculture Minister Takamori Yoshikawa**, who in 2019 is chairing the G20, the group of leading industrial and threshold countries, and to the **FAO Director-General José Graziano da Silva**. This enables the resolutions contained in the communiqué to be fed into the United Nations and into other multilateral institutions and fora.



View of the Weltsaal at the Foreign Office



The Agriculture Ministers' Conference was presided over by Federal Minister Julia Klöckner.



The Federal Minister Julia Klöckner handed over the final communiqué to the Japanese Agriculture Minister Takamori Yoshikawa and to José Graziano da Silva, the Director-General of the FAO.

In the four parallel discussion sessions, the so-called breakout sessions, which are always held under the Chatham House Rule, the Ministers then discussed the practical implementation of the policy recommendations contained in the final communiqué.

The agriculture ministers therefore used the sessions and breaks for a lively exchange on the use of digital technologies and procedures, on prerequisites and expectations,

and on areas of application and examples of best-practice. All were in agreement about the many and diverse benefits of digitalisation. They said that digitalisation in agriculture should be supported and flanked by training and extension services. They stated that a continued exchange of best practices was equally important. The ministers believed there was a particular need to clarify issues concerning data access, data ownership and data security.



Voting on the final communiqué



Young-farmer representatives Martha Agyemang from Ghana (3rd from right) and Tero Sarkala from this year's IGW partner country Finland (4th from right) presented their final statement during the conference.



One of the four breakout sessions took place in the Walther-Rathenau-Saal at the Federal Foreign Office.



Representatives of GFFA Berlin e.V. in talks with the delegations



State Secretary at the BMEL: Dr. Hermann Onko Aeikens

## 14. Senior Officials' Meeting



The representative of Japan, Ms. Ritsuko Yoneda, and the Argentine delegate, Mr. Gastón Funes

The **Senior Officials' Meeting (SOM)** took place in Berlin shortly before the Agriculture Ministers' Conference. At the meeting, high-level delegates and ministers finalised the final communiqué of the Agriculture Ministers' Conference.

One of the topics the participants focused on was the initiative to establish a Digital Council for Food and Agriculture. Ideas for improving data use, data security and data sovereignty were also hotly debated. The meeting was presided over by **Friedrich Wacker, Head of Directorate for International Cooperation and World Food Affairs** at the BMEL. This event was not open to the public and was solely for representatives of the participating states and international organisations.



On the screen: Chair Friedrich Wacker (left) and Prof. Dr. Engel Hessel (right), Commissioner for Digitalisation at the BMEL



# Global Forum for Food and Agriculture Communiqué 2019

## “Agriculture Goes Digital – Smart Solutions for Future Farming”



### I. Preamble

We, the agriculture ministers of 74 nations, have assembled here on 19 January 2019 for the 11th Berlin Agriculture Ministers' Conference on the occasion of the Global Forum for Food and Agriculture (GFFA) to discuss how digitalisation<sup>1</sup> can strengthen the agricultural sector's economic viability, sustainability, resource conservation, resilience and consumer orientation.

Over the last 50 years, the world's population has doubled. During the same period, thanks to technological and organisational innovations as well as conducive agricultural and food policies, global agricultural production has tripled. However, there are still over 821 million people in the world who are suffering from hunger and over 2.5 billion people in total suffering from malnutrition. The global population is also predicted to rise to around 10 billion by the year 2050. At the same time, the natural resources to feed

the growing population are limited and agriculture is being confronted by further challenges such as climate change, water scarcity, soil degradation and the loss of biodiversity.

Agricultural production must rise significantly while simultaneously increasing its sustainability, improving animal welfare, adapting better to local conditions and providing decent jobs and revenue along the supply chain. Agriculture must also use resources more efficiently and minimize food loss. Smart solutions are needed to reconcile conflicting goals and meet the current and future demand for safe and nutritious food and feed. Digitalisation in agriculture will play an important role in achieving these goals, improving livelihoods and living conditions in rural areas, supporting farmers in their work as well as in transforming lives in rural areas substantially. We hereby jointly adopt the

<sup>1</sup> Digitalisation for agriculture brings together digital technologies, digital innovations, information and communications technologies and artificial intelligence.

following resolutions with the aim of shaping and promoting the digitalisation of agriculture. In this regard we are committed to the goals of the 2030 Agenda for Sustainable Development, in particular the goal of zero hunger, and also to the Paris Agreement on Climate Change.

## II. Call for Action

We, the agriculture ministers assembled at GFFA 2019, aim to use the potential of digitalisation to increase agricultural production and productivity, while improving sustainability, efficient use of resources, employment and entrepreneurial opportunities and living conditions, especially in rural areas. Our aim is for digital solutions to support environmentally sound and animal welfare-oriented production, increase the quality and safety of agricultural products, reduce production costs, improve the availability of information throughout the food system and facilitate trade.<sup>2</sup> To this end, farms should be integrated more closely into value chains and markets and the attractiveness of agriculture and rural areas increased. We will focus in particular on family farms, which make up around 90 percent of all agricultural enterprises worldwide and account for approximately 56 percent of agricultural production.

Therefore we intend to take action to achieve the following four objectives:

### Identifying and using the potential of digitalisation

Our goal is for digitalisation to make agriculture more efficient and more sustainable, and to improve rural life. To this end we must provide impetus for the development of appropriate, site-adapted and scalable digital solutions in agriculture.

#### Our aims are to:

1. create the conditions to encourage responsible investment in digital technologies for the development of a vibrant agricultural sector, in particular start-ups and Micro, Small and Medium Enterprises (MSMEs), in a market-oriented environment;
2. intensify research and development into digital technologies, as well as the training of digital skills and capacity building, in order to assist farmers and stakeholders in making agricultural production and the value chain more efficient and sustainable;
3. exchange know-how and practical experiences relating to digitalisation in agriculture with the objective of creating an innovative and entrepreneurial environment;
4. use digital technologies and processes, such as electronic phytosanitary certification data, to facilitate agri-food trade and regulatory cooperation;
5. improve geo-data and remote-sensing systems to enhance data quality and accessibility while ensuring privacy;
6. use digital solutions to strengthen animal health and animal welfare, foster prudent and responsible use of antimicrobial agents in animal husbandry and optimize the use of plant protection products, water and fertilizers;
7. use digitalisation for better design and more efficient implementation of agricultural policies, in order to reduce bureaucracy in agriculture and thus lighten the burden on agricultural enterprises;
8. support digital solutions, including advisory services, in order to reduce risks to farmers and improve their resilience to crises, outbreaks of diseases, hazards and natural disasters; and
9. use digitalisation to improve consumer guidance and information and reduce food loss and waste.

### Establishing, expanding and protecting the access of farmers to digital technologies

At present, around half of the world's population uses the internet, but use of the internet is far lower in rural populations. It is our goal to improve access and thereby enable all farmers in particular youth, smallholders and women, to use digital technologies in accordance with their needs.

<sup>2</sup> During the 11th Berlin Agriculture Ministers' Conference we acknowledge the report by the FAO, ILRI, OIE and GASL working group on the measures taken as a result of the 10th Berlin Agriculture Ministers' Conference on "Shaping the future of livestock - sustainably, responsibly, efficiently" (annex).



**Our aims are to:**

1. establish and accelerate the expansion of the digital infrastructure that farmers need;
2. leverage funds for digitalisation and promote innovative financing instruments with the support of all relevant stakeholders, in particular governments, international organisations and the private sector;
3. support cooperatives and cooperative models in implementing digitalisation in agriculture;
4. expand the range of basic and advanced training programs and extension services relating to digital skills and technologies that are available for farmers and to encourage the networking of digital extension and advisory services; and
5. ensure that digital solutions provide farmers with appropriate information and better market access, including to e-markets for food and agriculture.

**Improving data use, ensuring data security and data sovereignty**

It is our goal to ensure that the interests of agriculture are taken into account in the drawing up of international principles, guidelines and standards for the management of digital data (inter alia the collection, recording, storage, retrieval, handling, analysis, processing and use of data) and are integrated into the existing international networks and formats.

**Our aims are to:**

1. strive to ensure that international solutions are drawn up in collaboration with agricultural stakeholders in order to develop standards and to reduce the global differences in regulations on data collection, data security and data use;
2. enable farmers, along with academia, industry, policy makers and public authorities at national and international levels, to use digitally collected data effectively;
3. improve the interoperability of digital systems in order to enhance the possibilities for data exchange, data use and data analysis by farmers, academia, industry and policy makers;

4. ensure that farmers are not dependent on individual digital systems and that intellectual property rights and privacy rights of users relating to digital innovations and information are protected and respected;
5. enhance trust and transparency about data governance principles, including rules on authorisation and oversight in data collection and data use, and promote data-use models that enable farmers, in compliance with national rules, to decide themselves on whether to pass on their operating, machine and business data;
6. provide public data through appropriate mechanisms and platforms in which such information is provided in standardized and practicable formats as open data in accordance with the FAIR principles (Findable - Accessible - Interoperable - Reusable);
7. promote digital solutions in order to strengthen the transparency, efficiency and integrity of the supply chains and to take effective steps against counterfeits, fraud and smuggling;
8. promote international digital data infrastructure in order to strengthen the cross-border fight against animal and plant pests and diseases and to rapidly exchange information on the current sanitary and phytosanitary situation; and
9. strive to establish digital methods at the World Organisation for Animal Health (OIE) in the framework of the renovation of its World Animal Health Information System (OIE-WAHIS) as an important component for exchanging information and for supporting veterinary services in designing their animal-disease control and eradication programs.

**Managing structural change in agriculture and rural areas**

Currently, approximately 45 percent of the world population live in rural areas, and agriculture is a vital economic sector. It is our goal to ensure that rural areas remain vibrant, competitive and attractive places to live; agriculture plays a crucial role in this. To this end we intend, within our remit, to monitor and manage the changes in economic structures, social structures, socio-cultural traditions, work remits and work requirements that are expected to result from digitalisation.

**Our aims are to:**

1. incorporate agricultural policy more closely into the development of rural and digital policies and to ensure that digitalization is part of the respective strategic agendas;
  2. mobilise responsible private and public investment in the digitalisation of agricultural and food value chains in rural areas in order to use digital technologies and to keep and generate jobs, training and entrepreneurial opportunities, especially for youth and women;
  3. enable farmers to have better links to regional, national and international markets on the basis of open, transparent and rule-based trade;
  4. promote reliable and competitively priced connectivity throughout rural regions;
  5. create a conducive context for start-ups and MSMEs and provide targeted support for them in order to provide greater impetus for digital innovations in rural areas;
  6. improve public awareness of the digital opportunities and the needs of farmers in order to create acceptance and to enhance the attractiveness of the farming profession; and
  7. improve the living conditions of people from rural areas in order to tackle depopulation-related issues that affect some of these areas.
2. regard the digitalisation of agriculture as an opportunity to facilitate trade and to meet the challenges, in particular those arising from climate change, and the demands of the 2030 Agenda better than hitherto;
  3. emphasize the need to implement the decision of the UN Climate Change Conference (COP23) on agriculture (Koronivia Joint Work on Agriculture) and underline the potential of digitalisation in this regard;
  4. recognise the need to build up appropriate databases and digital infrastructure, and some countries emphasise their need for assistance in this regard;
  5. aim, with this GFFA, to initiate a global process under the auspices of the United Nations to create an international framework for digitalisation in agriculture and:
    - ask the FAO to draw up, in consultation with stakeholders including the World Bank, African Development Bank, IFAD, OECD, WTO, ITU, OIE and the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and based on this communiqué, a concept for considering the establishment of an international Digital Council for Food and Agriculture that will advise governments and other relevant actors, drive the exchange of ideas and experiences and consequently help everyone harness the opportunities presented by the digitalisation;
    - encourage the FAO, with the involvement of other stakeholders, to draw up a technology impact assessment of the opportunities and risks presented by digitalisation for agriculture and rural areas<sup>3</sup>;
    - based on the outcome of the technology impact assessment, invite the FAO to develop a common methodology to assess and track the digital development situation in the agricultural sector at national level<sup>4</sup>;

### III. Conclusion

**We, the agriculture ministers:**

1. underline the importance of digitalisation for an efficient and sustainable agricultural sector, aim to reduce inequality resulting from the digital divide and enable all agricultural stakeholders to better participate in the digital transformation of policies, industry and society, and call for the establishment of digital infrastructure throughout rural areas;
- and we will discuss the results at the GFFA 2020;
6. will, with the involvement of international organisations, exchange thoughts and ideas on effective training programs and initiatives for farmers and for people in rural areas, especially women and youth, in

<sup>3, 4</sup> Subject to the availability of voluntary funds.

- order to promote and develop innovative environments, as well as to promote and expand strategies and programs for digital literacy;
7. regard strengthening international networks of farmers, public authorities, academia, the private sector, cooperatives and associations as a suitable means of pooling and disseminating knowledge and strategies relating to digitalization in the area of food and agriculture;
  8. are aware of the importance of common definitions, standards and interfaces in respect of data and digital applications, data collection and storage, and intend to take measures to promote rules and voluntary agreements at national, regional and international level;
  9. support measures to make public data - taking into consideration data privacy, data security and data sovereignty - available, accessible and usable;
  10. encourage the OIE, with the involvement of its member countries and in collaboration with its public and private partners, and taking into account existing systems operating at national and international level, to develop an animal data system that leverages the opportunities presented by digitalisation for more efficient management of animal diseases;
  11. aim to develop national strategies for digitalisation in food and agriculture and to feed these into the respective national policies relating to rural areas and digitalisation.

(Annex)

## Report of FAO, ILRI, OIE and GASL on action taken to respond to the Communiqué of Ministers of the 2018 GFFA

### Introduction:

The United Nations (UN) Food and Agriculture Organisation (FAO), the World Organisation for Animal Health (OIE), the International Livestock Research Institute (ILRI) and the Global Agenda for Sustainable Livestock (GASL) welcome the attention given by the Global Forum for Food and Agriculture (GFFA) to “Shaping the future of livestock”. These organisations agree that concrete action must be taken by all stakeholders and that international cooperation is necessary in order to make livestock production and animal husbandry more sustainable, responsible and efficient.

FAO, OIE, ILRI and GASL are fully committed to the UN Agenda for Sustainable Development. They work separately and together to ensure the livestock sector plays its vital role in achieving the Sustainable Development Goals (SDGs) through sustainable practices and policies that support food security and healthy nutrition, enhance livelihoods and opportunities for economic growth, improve animal health and welfare and address climate and natural resource use.

Institutional and collaborative efforts to promote sustainable livestock systems through policy and standard setting processes, knowledge generation and provision and multi-stakeholder collaboration are summarised below along with ways forward to strengthen these efforts.

FAO is a specialised UN agency committed to eliminating hunger in the context of sustainable development. FAO’s vision is “A world free from hunger and malnutrition where food and agriculture contribute to improving the living standards of all, especially the poorest, in an economically, socially and environmentally sustainable manner”. FAO’s core functions include:

- a. facilitating and supporting countries in the development and implementation of normative and standard-setting instruments
- b. assembling, analysing, monitoring and improving access to data and information on food and agriculture
- c. facilitating, promoting and supporting policy dialogue at global, regional and country levels
- d. advising and supporting capacity development
- e. supporting the uptake of knowledge, technologies and good practices
- f. facilitating partnerships for food security and nutrition, agriculture and rural development; and
- g. advocating and communicating at national, regional and global levels in areas of FAO’s mandate.

FAO engagement in GASL is based on guidance provided in 2010 from its Committee on Agriculture (COAG). With GASL, it engages as a convener, as an intergovernmental stakeholder, as a programmatic collaborator and provides operational support. FAO fosters practice change through a dense network of decentralized offices, promoting improved approaches at local, national and regional level. FAO released the comprehensive assessment “Transforming the livestock sector through the Sustainable Development Goals” in 2018, and is developing tools and approaches that optimise the positive outcomes from livestock and mitigate possible trade-offs.

OIE has received from its 182 members countries the mandate to improve animal health and welfare worldwide, by ensuring transparency on the global situation regarding animal diseases, developing international standards to **facilitate safe trade** and promoting international solidarity. OIE believes that an inter-sectorial, multi-stakeholder approach facilitates the understanding of success factors to shape the future towards more sustainable, responsible and efficient livestock production.

That’s why, for example, the 2018 OIE Global conference on Anti-Microbial Resistance (AMR), gathered high level representatives of animal health sectors globally, to promote the implementation of standards at a range of levels, from farm to global, and to communicate on good practices. The tripartite partnership with FAO and WHO signed a memorandum of understanding in May to better address AMR and other key topics such as zoonosis.

Implementation of the OIE global strategy on animal welfare was discussed during a global forum involving stakeholders such as production industries and non-governmental associations. The **World Animal Health Information System (WAHIS)** is currently being modernised to streamline the follow of animal disease information and to integrate all useful data. These developments were designed on the basis of a multi-stakeholder consultation, and developments are overseen by a Strategic Advisory Committee. Finally, guidelines on Public Private Partnerships (PPPs) are currently being developed following an OIE expert consultation. These guidelines will speak to both private and public sectors at strategic, executive and implementation levels.

ILRI is the only one of 15 CGIAR research centres with a livestock mandate. ILRI’s research aims to improve food and nutritional security and to reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock, ensuring better lives through livestock. By conducting research with ‘the end in mind’, the research outputs, capacity development and engagement with global decision makers targets the SDGs, and thus the four GFFA priority areas. ILRI works with partners such as the International Food Policy Research Institute (IFPRI) to conduct research and provide evidence, and with those at the interface of research and development, such as FAO and OIE, to ensure research results are taken to scale, resulting in development outcomes and impacts. ILRI is a member of GASL and serves on its Guiding Group as well as the task force that was instrumental in articulating how the GASL agenda aligns with and contributes to the four priority themes identified at GFFA 2018. ILRI has worked to raise the profile of the livestock sector to contribute to sustainable development through engagement with UN SDG processes, making available a website for key livestock information ([www.whylivestockmatter.org](http://www.whylivestockmatter.org)), facilitating the sharing of information amongst livestock sector actors and providing a public, searchable repository of outputs <https://cgispace.cgiar.org/handle/10568/1>.

GASL is a multi-stakeholder partnership committed to sustainable livestock development, addressing social, economic, environmental and health perspectives. Making use of the Communiqué of Ministers of the 2018 GFFA, GASL has re-focussed its actions by basing its 2019-2021 Action Plan on the four GFFA priority areas: food and nutrition security, livelihoods and economic growths, animal health and welfare, climate and natural resource use. During its 8th multi-stakeholder partnership meeting in Mongolia, GASL debated on the role of multi-stakeholder processes within these priority areas and identified key issues. There are a number of areas where GASL will work during the next three years. These include the role of livestock in sustainable food systems and in nutrition security; fostering policies in support of farmers at all scale for economically viable transformation; and generation of evidence on the implications of foodborne, zoonotic and livestock diseases. GASL will focus on the following three major outcomes:

- **Facilitating dialogue:** GASL facilitates dialogue that improves consensus on sustainable livestock development issues among GASL partners and other stakeholders.
- **Assembling and communicating evidence:** GASL partners and stakeholders offer tools and evidence as inputs into the dialogue process to arrive at practices, policies, strategies and frameworks in support of sustainable livestock development.
- **Advocating practice and policy change:** GASL advocates practice and policy change through multi-stakeholder processes towards the adoption of good practices and policies at global, regional, national and local levels.

The focus on these outcomes is in line with the Panama declaration of GASL (2016) where GASL recognised the SDGs as the overarching reference frame and confirmed its commitment to continue its multi-stakeholder processes towards sustainable livestock sector development. The Panama declaration is echoed in others such as the Rotterdam declaration of the International Dairy Federation (IDF) World Dairy Summit in 2016.

**Way forward:** The international organisations with a global mandate in livestock underline the current and potential impact of innovations, especially those derived from digital applications, on the evolution of livestock systems worldwide and their contribution towards the SDGs (UN Agenda 2030).

FAO, ILRI and OIE will continue to work together and offer expertise in their respective areas. GASL will continue to provide a multi-stakeholder partnership platform where the international organisations meet and debate with a multitude of stakeholders towards the adoption of good practices and policies at global, regional, national and local levels.

December 2018

FAO, OIE, ILRI, GASL



# Participating Countries Berlin Agriculture Ministers' Conference 2019

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*Republic of Angola*

*Argentine Republic*

*Republic of Armenia*

*Australia*

*The Commonwealth of the Bahamas*

*Republic of Belarus*

*Kingdom of Bhutan*

*Bosnia and Herzegovina*

*Republic of Bulgaria*

*Republic of Cabo Verde*

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*Canada*

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*Ireland*

*Japan*

*Republic of Kazakhstan*

*Republic of Kosovo<sup>1</sup>*

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**International organisations:**

African Development Bank  
 Committee on World Food Security (CFS)  
 Eurasian Economic Union (EAEU)  
 European Commission (Agriculture and Rural Development, DG AGRI)  
 European Commission (Health and Food Safety, DG SANTE)  
 Food and Agriculture Organisation of the United Nations (FAO)  
 International Telecommunication Union (ITU)  
 International Fund for Agricultural Development (IFAD)  
 Organisation for Economic Cooperation and Development (OECD)  
 World Bank (WB)  
 World Organisation for Animal Health (OIE)  
 World Trade Organisation (WTO)

<sup>1</sup> This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

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