Leibniz Institute of Agricultural Development
in Transition Economies

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Digital technologies in the fight against drought

Summary of a panel discussion at the Global Forum for Food and Agriculture

Halle (Saale), 29 January 2019 – As became evident last summer, enduring dry periods are since recently causing extensive damage to the agriculture and threatening the livelihood of the rural population also in Central Europa. Countering this development effectively calls for the use of the latest technology to record and evaluate precise yield data. Against this background, on 18 January 2019 more than 130 international guests from the fields of politics, business and science came together at the panel discussion "Going digital against the drought - New technologies and challenges in their implementation" in Berlin, Germany, to discuss findings thus far, digital solutions and obstacles to their implementation. The expert panel was organised by IAMO together with the German Agribusiness Alliance at the German Eastern Business Association and the German-Sino Agricultural Center.

In his opening speech **Michael Stübgen**, Parliamentary State Secretary, Federal Ministry of Food and Agriculture (BMEL), Germany, referred to the problems in the agricultural sector as a consequence of increasingly extreme weather conditions. Tangible effects of climate change are in particular periods of drought, such as that which also occurred in Germany last summer. Harvest losses and the increasing worldwide demand for food call for the realisation of sustainable crop cultivation systems and new plant strains. "The area of risk management also needs to be further developed and improved by the fields of business and science, as well as the political side. Research projects such as those at IAMO help to identify suitable technologies for recording and evaluating data and establishing climate insurance cover", Stübgen stated.

In his statement, Vice-Minister **Qu Dongyu**, Ministry for Agriculture and Rural Affairs, China, pointed out the great significance of innovative management and marketing in agriculture in supporting smallholders in China. Only with the use of digital technology and the provision of insurance cover can farmers expect to deal with risks arising from environmental influences in the future. In this, regional planning is just as important as international co-operation when it comes to improving farming and market conditions. Dongyu declared that the global interaction and networking regarding more advanced cultivation methods and systems is regarded as highly important by the Chinese government.

Vice-Minister **Dr. Olga Trofimtseva**, Ministry for Agricultural Policy and Food, Ukraine, noted that deforestation, water shortages and deteriorating soil quality also pose major challenges for Ukrainian agriculture. Automated irrigation and drainage systems as well as digital calculations for the use of cultures, pesticides and insecticides help to significantly minimise harvest losses and preserve resources. However, digital developments are also increasingly employed in infrastructure, export and the traceability of products. Trofimtseva stressed that the cross-border exchange of data, global networking and the export of new technologies represent a key approach to resolving the acute problems faced by the agricultural sector.

IAMO researcher **Dr. Lena Kuhn**, Germany, reported on her research activities regarding risk management in the agricultural sectors of Central Asian countries. To forecast the risk of harvest losses for specific regions and individual farmers, various data sources, including satellite and drone data, are recorded, collated and evaluated. Field trials in Kyrgyzstan have shown that farmers are generally open to innovative methods of risk management, but that these instruments always need to be adapted to the economic capacity and requirements of the individual farmers. The sensitisation of farmers for the use of digital technologies and new risk management instruments, especially index-based drought insurance, poses a particular challenge in the scope of the research project “Increasing climate resilience via agricultural insurance – Innovation transfer for sustainable rural development in Central Asia”.

In the scope of the panel discussion **Xu Zhenyu**, Chairman of the Board of Anhui Longcom Internet of Things Co., China, explained how his company works to develop optimised cultivation concepts for smallholders. Using IDD technologies as a basis, the company is focused on the automatic and intelligent recording, transfer and data processing of weather information. For example, data regarding water volumes, humidity, soil conditions and quality are collected and evaluated in order to develop and implement automatic systems for agriculture.

Lionel Born, Chief Strategy Officer, Spacenus GmbH, Germany, presented the key benefits of satellite-based tools for agriculture. His company develops technology based on artificial intelligence and satellite images to exploit agricultural potential. Even though the applications are characterised by relatively low investment costs and simple data input, their use amongst farmers is not yet at an adequate level. As a result, in the future new technological areas of use are to be developed for all farmers.

In the discussion **Alexa Mayer-Bosse**, Head of Business Development and Origination, Agro and Weather Risks, Munich Re, Germany, spoke about the insuring of risks in the agricultural sector. She emphasised that co-operation with authorities, business and scientific institutes in the recording and comparison of data is a key factor in the development of feasible agricultural insurance systems and products. Farmers can use available data to assess their risk of harvest losses and secure themselves against these with corresponding insurance cover.

The panel discussion was moderated by **Torsten Spill**, Co-Chair of the Agricultural Industry working group of the Committee on Eastern European Economic Relations, Germany.

Further information can be found here: www.iamo.de/en/events/event-archive

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About GFFA

The 11th Global Forum for Food and Agriculture (GFFA) entitled "Agriculture Goes Digital – Smart Solutions for Future Farming" was held in Berlin, Germany, from 17 to 19 January 2019. It is one of the largest international agricultural policy forums and was organised by the Federal Ministry of Food, Agriculture and Consumer Protection (BMEL) in cooperation with GFFA Berlin e.V., the Senate of Berlin and Messe Berlin GmbH. General information on the GFFA 2019 can be found on the conference website: www.gffa-berlin.de/en.

About IAMO

The Leibniz Institute of Agricultural Development in Transition Economies (IAMO) analyses economic, social and political processes of change in the agricultural and food sector, and in rural areas. The geographic focus covers the enlarging EU, transition regions of Central, Eastern and South Eastern Europe, as well as Central and Eastern Asia. IAMO works to enhance the understanding of institutional, structural and technological changes. Moreover, IAMO studies the resulting impacts on the agricultural and food sector as well as the living conditions of rural populations. The outcomes of our work are used to derive and analyse strategies and options for enterprises, agricultural markets and politics. Since its founding in 1994, IAMO has been part of the Leibniz Association, a German community of independent research institutes.

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