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Agriculture in times of drought:

How digitalisation can support sustainable risk management

IAMO Policy Brief 35 details advantages and challenges of using market-based risk instruments

Halle (Saale), 31 August 2018 – The ongoing period of drought has been one of the most vividly discussed topics in Germany this summer. Particularly agricultural operations have been affected by the enduring heat and lack of rain. Average losses to harvests are estimated at around 10 percent per hectare compared to the previous year's harvest. While the general German public has become attentive to this subject for the first time this year, similar drought situations have been common in Eastern Europe and Central Asia for several years now. The extent to which farmers in both regions can apply sustainable risk management to hedge against such extreme weather conditions is explained by Lena Kuhn, Ihtiyor Bobojonov and IAMO Director Thomas Glauben in the current IAMO Policy Brief 35.

Following on from the record years of the past, the average temperature this summer marks a new high point. The German farmers' association labels the current situation a drought crisis and calls for one billion euros as short-term support for agricultural enterprises affected. These direct compensation payments are controversial, as climatic conditions number amongst the business risks of agriculture and false incentives could be given as a consequence. To ensure the efficient use of taxpayers' money, the agricultural ministry points out that payments, if at all, can only be made on the basis of actual harvest data, thus. However, collecting regional harvest data is highly time consuming and does not solve the problem of the basis risk, undetected harvest differences between farms and regions.

To adapt farming to extreme weather conditions there is an increasing demand for modern risk management instruments. The latest satellite and radar technology, the use of drones and digital evaluation, as well as processing and communication of data via mobile devices, offer numerous opportunities to measure and analyse yield. At the same time, these innovative applications are used to

support market-based risk instruments, such as index-based drought insurance. Although individual insurance companies already offer such products, demand has thus far been low. In the countries of Central Asia, in which the need for effective risk management is higher, the lack of financial means on the part of farms, under-developed insurance markets and administrative obstacles mean that conditions are less favourable.

“In the coming years the frequency of droughts is likely to increase. The development and support of effective and sustainable risk management in agriculture is an urgent requirement. Politicians can establish pioneering incentives here, for example by establishing equal taxation of drought insurance products as compared to other forms of climate risk insurance or the creation of a legal basis for the use of modern drone technology. In contrast, aid payments could delay the development of digitalisation and market-oriented forms of risk management and lead to the dependence of agriculture on such payments,” says IAMO researcher Lena Kuhn.

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Further information

The research findings arose in the scope of the IAMO projects “Increasing climate resilience via agricultural insurance – Innovation transfer for sustainable rural development in Central Asia” (KlimALEZ) and “Digital early-warning technologies for climate crisis management and agricultural transition in Central Asia” (DETECCT). The KlimALEZ project is funded by the Federal Ministry of Education and Research (BMBF). DETECCT is supported by the Leibniz Research Alliance “Crises of a Globalised World”.

IAMO Policy Brief 35 “Agriculture in times of drought: How digitalisation can support sustainable risk management” has been published in German and can be downloaded free of charge at the following website: www.iamo.de/en/publications/iamo-policy-briefs.

IAMO Policy Briefs

IAMO conducts research on important agricultural policies. In our IAMO Policy Briefs we share our take on the researched issues. In this series of publications, we elaborate briefly and in comprehensive language on various topics, which are relevant for today's society. We hope to involve the interested public in these topics as well as decision makers in politics, the economy and the media. Since 2011, we publish IAMO Policy Briefs at irregular intervals.

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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