



Lomonosov Moscow State University

Eurasian Center for Food Security

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IFPRI launched the Global Food Policy Report 2019, which highlights the urgency of rural revitalization to address the food security crisis in rural areas. The Newsletter discusses the chapter on Central Asia and invites you to attend the launch event on May 28 in Moscow.

Next you will learn about the Ag Observatory project, which works with data to get monitor agricultural weather for food systems globally. The article also describes how ECFS plans to adopt this system.

The Korea Rural Economic Institute prepared a new study resulting in a collaboration with the World Bank and ECFS. Scientists describe the agricultural research and extension system in Korea and how can it be implemented in Eurasian countries, as discussed in the third article.

The Newsletter ends with an updated Calendar of Events for 2019.

2019 Global Food Policy Report: Problems and Prospects for Food Security in Central Asia

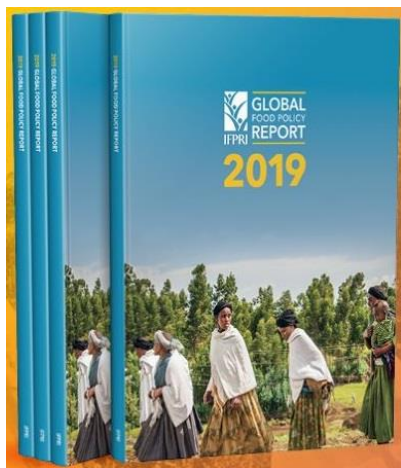
By Evgeny Tsvetnov

The International Food Policy Research Institute (IFPRI) presents the eighth edition of the flagship *Global Food Policy Report 2019*.

The regional review of Central Asia was prepared jointly by IFPRI with the participation of the Eurasian Center for Food Security (ECFS) of Lomonosov Moscow State University (LMSU).

The report suggests that the revitalization of rural areas can be key to improving rural life by creating actively developing rural areas and helping to achieve the United Nations’ Sustainable Development Goals. Drawing on recent

research, IFPRI researchers and other distinguished food policy experts consider critical aspects of rural revitalization, such as strengthening rural–urban linkages and incentives that can help rural areas. In addition, the report describes developed countries’ experience with rural revitalization and presents the current global picture as well as the regional situation. The chapter on Central Asia was prepared by **Kamiljon Akramov**, a research fellow, and **Jarilkasin Ilyasov** and **Allen Park**, senior research analysts, at the Development Strategy and Governance Division, IFPRI, and



Evgeny Tsvetnov, a senior researcher at ECFS. Researchers discuss both the revitalization of rural areas and the trends that determined food security in 2018. The food security of the region is largely determined

by international goods markets and economic and political events taking place in its main trading partners, particularly the Russian Federation and China. There is growing demand for primary goods in the world market and an increase in income from cash remittances from migrants (because of fluctuations in local exchange rates and exchange rates in donor countries, primarily Russia).

China has also become an important trading partner for the region. For example, in 2018 China was Uzbekistan's primary trading partner, usurping the place of its previous primary partner. China's share of Uzbekistan's foreign trade was US\$6.3 billion (compared with US\$4.2 billion in 2017). It is important that the growing demand for food products in China can provide the Central Asian countries with the opportunity to diversify their agricultural production and increase exports—primarily of oilseeds and horticultural and animal industry products.

The key factors that increase food security in the region are internal policy changes in some countries of Central Asia. Thus, the establishment of a visa-free system between Tajikistan and Uzbekistan in March 2018—after 18 years of requiring a visa—contributed to an increase in trade between these countries. In 2018, the trade between Tajikistan and Uzbekistan amounted to US\$281.5 million, which is 2.3 times more than it was in 2017.

Despite a series of positive changes, the following forms of malnutrition are observed in the region: growth inhibition of children under five years old (in Tajikistan this value is 17 percent) and micronutrient deficiencies that lead, as a consequence, to a high rate of women of reproductive age suffering from anemia (38 percent in Tajikistan). In addition, in the past few

years, the problem of child obesity in Central Asia has become more urgent than the problem of wasting.

The issue of food security is particularly critical for populations in rural areas, which make up a greater share of the total in the analyzed region than urban populations. Thus, 73 percent of Tajikistan's population and about 64 percent of the Kyrgyz Republic's population live in rural areas, as do about half of the populations of Turkmenistan and Uzbekistan; the exception is Kazakhstan, where 57 percent of the population live in cities. The gaps in labor productivity between agricultural and nonagricultural sectors are expressed in higher levels of poverty and malnutrition in rural areas than in urban areas.

The Central Asian countries stimulate the development and revitalization of their rural areas through the development of rural infrastructure, the creation of agricultural economic clusters, the support of trade and service cooperatives, the adoption of innovative technologies in agricultural production, and the introduction of economic diversification.

Because of the uncertain environment (including uncertainty in goods prices and uncertainty in the foreign policy environment) as well as increasing unemployment, especially in rural areas, the authors of the report recommend that Central Asian countries aim to strengthen the role of the private sector in the economy by accelerating reforms, building capacity, and improving the institutional base as well as boosting public sector regional integration. In agriculture, reforms are needed to liberalize land use rights and create a favorable climate for the collective management of jointly owned resources. This kind of management will stimulate the development of labor-intensive sectors that provide the creation of high added value, for example, horticulture.

The full report in English is available [here](#). A synopsis of the report in English is [here](#).

The report will be presented on May 28, 2019, at LMSU in the framework of the *Fourth International Conference on Agriculture, Food Security and Nutrition in Eurasia*. Registration for the conference will be open soon: follow the news on the ECFS website for updates.

The Ag Observatory: A Tool for Proactively Monitoring Agricultural Weather for Global Food Systems

By Kristina Prokopyeva and Anna Kontoboytseva

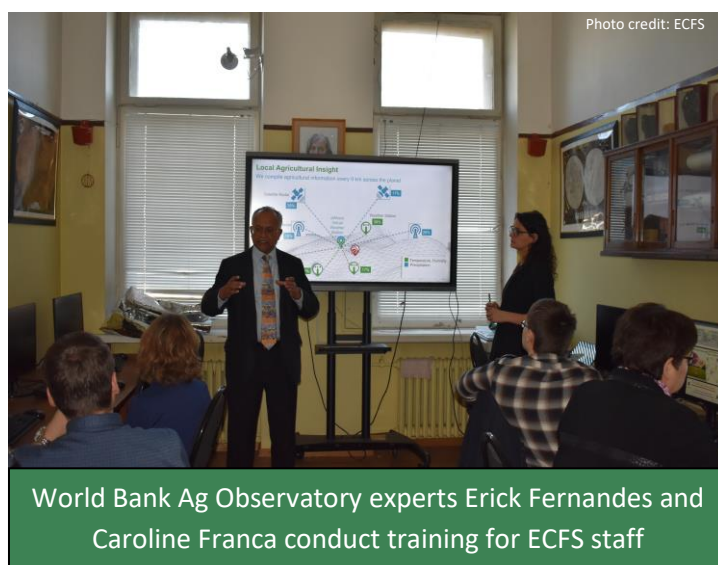
The Ag Observatory is a World Bank Group initiative that provides a decision support system for agriculture based on enhanced access to geospatial agrometeorological data in high resolution and in near real-time. In the context of cooperation between the World Bank and ECFS, a workshop on the implementation of the Ag Observatory was held on April 2–3, 2019, at the Soil Science Department of LMSU. World Bank experts **Erick Fernandes** and **Caroline Franca** presented the project as a tool to monitor potential weather shocks to food systems.

“The Ag Observatory uses information from open access platforms, such as Global Crop Monitoring ([GEOGLAM](#)), the UN-FAO Global Information & Early Warning System ([GIEWS](#)), Anomaly Hotspots of Agricultural Production ([ASAP / JRC-AS](#)), etc., and with the help of a private agricultural meteorology data partner [aWhere Inc.](#), it is possible to use such digital data in a completely unique way. The application of Machine Learning helps to create a network of virtual weather stations across the agricultural land of the planet and results in the generation of 1.5 million virtual meteorological weather (5 arc-minutes grid) that results in 7 billion data points updated every six hours. In this way, a huge amount of potentially very useful agricultural weather data is generated in high resolution and in near real-time,” explained Erick Fernandes, the World Bank’s Lead Agriculture Specialist.

The Ag Observatory’s network of virtual meteorological stations offers an opportunity to generate contiguous “weather surfaces” or layers based on daily data archive from more than 10 years (maximum and minimum temperatures, precipitation, solar radiation, relative humidity, potential evapotranspiration, and wind speed). Weather surfaces make it possible to project specific weather conditions in the approximately 9×9km. Integrating such agrometeorological data with other data—such population density, crop types, farm boundaries, distance to markets, and soil types and properties—creates a powerful mechanism for comparing and contrasting environmental variables across hyperlocal to

global agricultural land and thus estimate potential crop performance factors in near real time. A seven-day forecast can be also generated for any selected region, which facilitates proactive recommendations to farmers about the optimal timing for the implementation of critical agricultural activities across the entire agricultural value chain (e.g. input supplies, sowing, fertilizing, pesticide applications, harvesting, storage and transport, marketing).

During the workshop, examples built with the use of aWhere’s platform in different regions and cropping systems were presented. For instance, in Ghana, Esoko provides small farmers with up-to-date weather forecast data as well as various recommendations on agriculture through text messages. The network serves [1 million farmers, half of them in Ghana and the rest spread across 19 African countries](#). In addition to disseminating information via text messages (SMS), the information service also has its own call center: by contacting this call center, a farmer can get detailed information about local weather and crop management. In addition to Esoko, the iShamba SMS service also uses the aWhere information platform, providing useful agricultural information [to 20,000 farmers in Kenya](#). Such services help farmers better plan their crop sowing, feeding, and processing, which generally increases the resilience of farms to climate change.



World Bank Ag Observatory experts Erick Fernandes and Caroline Franca conduct training for ECFS staff



ECFS staff studied the tools (software as R-Studio and QGIS, access via Advanced Programming Interface - API) that allow users to statistically analyze and visualize data, conduct agricultural monitoring, and make forecasts. During the training, some ideas about the possibilities of applying the acquired skills in further work in the

Eurasian region were discussed. For example, it is possible to use the geospatial data of the [LMSU soil data center](#) to assess changes in the soil properties of agricultural zones in Russia and project their influence of cropping system performance depending on the agrometeorological parameters provided by the Ag Observatory.

The participants of the workshop also plan to use their newly acquired skills for capacity enhancement of students and trainees in courses conducted by ECFS employees that cover agriculture and natural resource management in the focus region. Erick Fernandes and Caroline Franca will provide full support to the participants in their future work with the Ag Observatory and assist with feedback to improve the project. Follow the [link](#) to see more photos from the workshop; a video about the project is [here](#).

New Study: Development of the Agricultural Research and Extension System of Korea and Its Implications for Eurasian Countries

By Heo Jang and Choi Jungman

In the latter part of 2017, the World Bank and ECFS jointly initiated a multi-country study on Food and Nutrition Security in the Eurasian Region. [The Korea Rural Economic Institute \(KREI\)](#) joined this initiative, and based on consultation with regional stakeholders, decided to introduce the historical evolution of the agricultural technological research and extension system of the Republic of Korea to offer useful suggestions for policy recommendations for the food security and nutrition of Eurasian countries. The full study is now [available](#) on the KREI website.

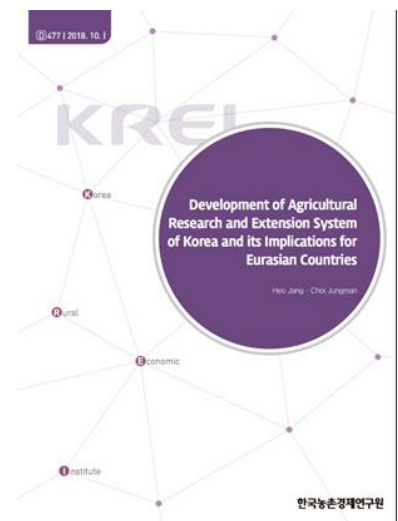
The study was conducted by KREI researchers [Heo Jang](#) and [Choi Jungman](#) to provide rationales for the requirements of government-supported agricultural research and development (R&D) and extension services based on the Korean experiences to Eurasian countries. This paper introduces the methods by which Korea achieved food security and nutritional transition and offers a few suggestions for Eurasian countries.

The Republic of Korea, which suffered from severe hunger and poverty after the Korean War (1950~1953), has achieved self-sufficiency in its supply of rice, a staple crop, since the early 1970s with the success of R&D and extension services in the agricultural sector. The country

has unique characteristics in its agricultural extension services (AES), currently organized as the Rural Development Administration (RDA). Korea has achieved significant success in improving agricultural productivity and efficiently providing developed

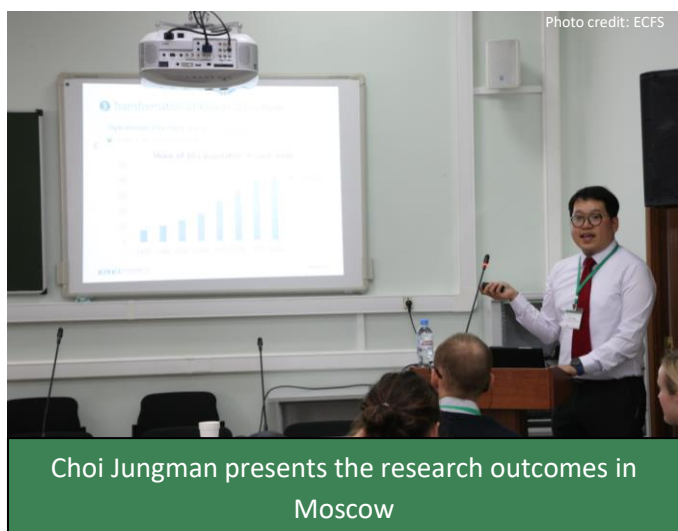
technologies to farmers. The aim of this study has been to examine AES in Eurasian countries as well as the development of Korea's agricultural extension system to share the factors that enabled the country to achieve such success in distributing agricultural R&D and technology.

This paper consists of four main parts. The first concerns the development of Korea's distinguished AES from the perspective of policies and institutions. For the efficiency of AES, the Korean government combined R&D and extension functions into one independent government



body. RDA had four agricultural institutions of science and four extension-related bureaus; it could reap synergy effects from the combined functions through interaction during extension services with farmers who adopted new techniques and technologies provided by RDA. In the process, R&D and extension services could coordinate.

The second part of the study covers the Korean agricultural transformation, which explains the changes that have taken place in the agricultural sector since the Korean War and suggests new directions for the role of agriculture in the country. Industrialization and modernization have diversified diet habits and food consumption habits. Strategies and directions that can revitalize rural communities—including the restoration of rural areas, decentralization, and investment in innovative growth in rural communities—are provided.



Choi Jungman presents the research outcomes in Moscow

The third part of the study presents the current nutritional status of Eurasian countries and their agricultural R&D and extension systems. Since the collapse of the USSR in 1991, Eurasian countries have developed and organized their own agricultural extension services in order to improve agricultural productivity and increase farmers' incomes. The Eurasian countries covered by this study have operated not only national institutes of agricultural science but also educational institutions such as universities for the development of agricultural technologies. Although a wide variety of institutes are organized and play a critical role in R&D and extension services, issues such as the lack of a sufficient budget and well-trained extension workers, as well as too much dependence on international donors, arise as problems.

Finally, the study delivers suggestions for AES of the Eurasian countries based on findings from the Korean extension services. Eurasian countries may have issues including lack of public investment, limited donor contributions, and lack of coordination between actors in R&D and extension services. For the efficiency of AES in the region, the study suggests improving efficiency in the coordination of functions between R&D and technology dissemination, extended involvement by the public sector, and the extensive involvement of extension services other than the traditional functions of technology dissemination.

This research was presented during the Eurasian Food Security Conference in 2018 in Moscow. To learn more, please download the [presentation](#) and [full paper](#) by clicking the links.

Event Calendar 2019

Date	City, Country	Event
April 23–24	Geneva, Switzerland	FAO/WHO/WTO/African Union: International Food Safety Conference — The Future of Food Safety: Transforming Knowledge into Action for People, Economies and the Environment
April 24–26	Astana, Kazakhstan	Symposium on Sustainable Food Systems and Nutrition Governance for Prevention of the Double Burden of Malnutrition in Central Asia and the Caucasus — Through the Eyes of Children and Adolescents (conference website is not available)

May 13–15	Brussels, Belgium	Frontiers in Food Safety And Nutrition
May 20–24	Antwerp, Belgium	AquaConSoil: 15th International Conference Sustainable Use and Management of Soil, Sediment and Water Resources
May 28	Moscow, Russia	The International Conference on Agriculture, Food Security and Nutrition in Eurasia Featuring IFPRI's 2019 <i>Global Food Policy Report</i> (conference website will be available later)
June 4–7	Gelendzhik, Russia	Grain market - yesterday, today, tomorrow
June 20–21	Istanbul, Turkey	International Conference on Agronomy and Food Science and Technology (AgroFood)
June 26–28	Halle (Saale), Germany	IAMO FORUM 2019: Small Farms in Transition: How to Stimulate Inclusive Growth?
July 2–5	Stavropol and Kislovodsk, Russia	Russian Society of Ecological Economics Conference
September 10–13	Leeuwarden, the Netherlands	Saline Futures Conference: Addressing Climate Change and Food Security (some grants for fees and travel costs are available for young researchers and farmers)
September 25–27	Braunschweig, Germany	59th GEWISOLA Annual Conference
October 9–11	Hannover, Germany	Extreme Events: Building Climate Resilient Societies
October 29–31	Yerevan, Armenia	The Eurasian Food Security Conference 2019 (updated website coming soon)
December 5–6	Sochi, Russia	World Soil Day–2019 (conference website will be available later)