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# Eurasian Center for Food Security

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*In 2019, ECFS began to develop an Integrated Food Security Index for Eurasia, which we describe in the first article of this issue.*

*The Newsletter also discusses the major organizations that are dealing with the problems of soil organic carbon in the world and the issues they face, as well as a meeting with the GRA and CIRCASA in Colombia.*

*At the end of the Newsletter you will find an updated Calendar with events of 2019.*

## ECFS Develops an Integrated Food Security Index

*By Alexey Belugin*

Following the results of e-consultations and training courses for representatives of countries of the Eurasian region, experts of the Eurasian Center for Food Security (ECFS) realized that there is a need to improve approaches to the assessment of food security. A comparative analysis of widely used systems of food safety indicators developed by various international organizations—for example, the [Global Food Security Index](#) and the [Global Hunger Index](#)—revealed

that existing indexes do not fully take into account specific needs of some countries. Furthermore, these systems are not adapted to the particular available national statistical information and do not reflect many factors that significantly affect food security. This recognition has led to an acknowledgment of the need to develop an integrated system for assessing food security that takes into account the specific features of the focus

region. In 2019, ECFS experts began developing an integrated food security assessment system based on **12 particular indicators**, including:

- saturation of the domestic market with food, including domestic food;
- the level of expenditure of the population on food;
- income inequalities of the society;
- the availability of retail premises;
- sufficiency of the country's international reserves and grain reserves;
- deviation from the usual reserves of soil nutrients;
- the quality and nutritional value of food products; and
- the quality and availability of drinking water.

This rating system reflects the six internationally recognized components of food security: food's existence, food's availability, food safety, the stability of food safety, water consumption safety, and nutritional value.

**A key feature of this assessment system is the consideration of the qualitative and quantitative characteristics** of water and soil resources available. Thus, a decline in the quality and productivity of the soil adversely affects the possibility of food self-sufficiency, as

well as the stability of food supplies.

An integrated food security index (IFSI) is calculated from the 12 indicators noted above. The calculation of the index uses an approach by which elevated values of one indicator do not compensate for the low values of another. For example, excessive carbohydrate intake does not compensate for the lag in protein intake relative to the established norm. For many indicators, a norm can be set; a significant excess in this norm will not be interpreted as an improvement in the food security situation.

In addition, the indicators of food self-sufficiency are adapted to the conditions of possible foreign trade restrictions and can be correctly applied and interpreted regardless of the existence of such restrictions.

This integrated system will allow for the creation of a unified database of food security indicators for the Eurasian region. Using this platform, it will be possible to carry out intercountry comparisons, identify national experience in ensuring food security, and determine priority areas for the provision of state support. The results of this work will be useful for decision makers, advisors, and analysts in the field of food and agriculture policy.

This year, ECFS experts plan to calculate food security indicators for the focal countries for five years (2013–17). The results of the work will form the basis of a report on the state of food security in the Eurasian region.

ECFS conducts a series of open scientific workshops on food safety assessment so the expert community can keep up with research progress and researchers can present their latest results. ECFS has already held a scientific workshop on the IFSI concept, as well as a workshop on the resource component of the indicator system. Information about the next seminars will be posted on the [ECFS website](#)— stay tuned!



Participants of the IFSI Workshop, 2019

# International Cooperation on Reducing Greenhouse Gas Emissions in Agriculture and Soil Organic Carbon Sequestration

By Anna Kontoboytseva

Interest in the conservation and accumulation of organic carbon in agricultural soils in the context of global climate change and food security is growing both among the international scientific community and among policy makers, government officials, non-profit organizations, agricultural specialists, and other stakeholders around the world. This interest is manifested in an increase in the annual number of international and interdisciplinary research publications on the topic of sequestration of organic carbon in soils as well as in the growing number of thematic events and publications on this topic in the media.

In 2018, with the support of the [Eighth Framework Program of the European Union for the development of research and technology Horizon 2020](#), the [CIRCASA project](#)—Coordination of International Research Cooperation on Soil Carbon Sequestration in Agriculture—was launched.

CIRCASA collaborates with international programs and initiatives—including the [4 per 1000 initiative for Soils for Food Security and Climate](#); [The Global Research Alliance \(GRA\) on agricultural greenhouse gases](#); and the [Joint Programming Initiative on Sustainable Agriculture, Food Security and Climate Change](#), among others—as well as with leading universities and world research organizations. In Russia, the project partner is ECFS.

On February 4–8, 2019, the Third Annual Meeting of the GRA Integrative Research Group, the first meeting of CIRCASA project participants, and the joint meeting of the two organizations took place in Cali, Colombia, with the participation of invited experts from the [European Commission](#), [CIAT](#), [The International Soil Reference and Information Center \(ISRIC\)](#), and other international and major national organizations, such as the [French Agricultural](#)

[Research Centre for International Development \(CIRAD\)](#). The event was attended by ECFS experts **Anna Kontoboytseva** and **Alexey Sorokin**.

The first two days were devoted to the work of the GRA, which celebrates its 10th anniversary in 2019. The goal of the GRA is to bring countries together to produce more agricultural products without increasing greenhouse gas emissions. On the first day, the activities of the GRA networks “Integration from Farm to Regional Level,” “Greenhouse Gas Management,” and “Sequestration of Soil Carbon” were reviewed. On the second day, country reports on activities in the field of reducing greenhouse gas emissions in agriculture from Australia, Brazil, Canada, Denmark, France, Great Britain, Holland, New Zealand, Norway, Spain, the United States, and Uruguay were presented.



Participants of the GRA & CIRCASA Meetings

Although Russia is not a member of the GRA, the organizers invited ECFS employees to review the research and public and private initiatives related to the preservation and accumulation of soil organic carbon and the reduction of greenhouse gas emissions in agriculture. In the ECFS experts' contribution, the current Russian federal programs Clean Country and Melioration, along with a list of



current and recently completed research projects on the study of organic carbon reserves in agricultural soils, were briefly presented.

The ECFS staff highlighted the research on managing the deposition of atmospheric carbon by arable soil of Russia based on a geographic network of long-term experiments with fertilizers. This work was conducted by ECFS employees as part of the federal target program Research and Development on Priority Areas for the Development of the Scientific and Technological Complex of Russia for 2014–2020.

On February 6, at a meeting of the GRA and CIRCASA, reports on regional experiences in the sequestration of soil organic carbon were presented. The presentations were followed by a lively discussion about how to move from research to policy and practice. This issue was given special attention throughout whole the week. CIRCASA project manager and GRA co-chairman **Jean-Francois Soussana** took an active part in all discussions.

On February 7 and 8, the results of CIRCASA's work for the year in two main areas were discussed: (1) strengthening the scientific community and knowledge structuring and (2) taking into account the opinions of stakeholders: knowledge and research needs. At the beginning of the project, an analysis of scientific literature was conducted. It turns out that the annual number of scientific publications on the sequestration of organic carbon in agricultural soils increased from individual works in 1991 to 700 works in 2015; moreover, most of them were in the field of soil science and environmental sciences, while in agronomic and multidisciplinary agricultural fields significantly less research is devoted to research (as reported by Soussana during the event).

Additional issues that need to be worked out include carbon stability in the composition of soil organic compounds, modeling long-term changes in agricultural systems and practices in different soil and climatic conditions, and understanding socioeconomic barriers and effective policies for implementing soil organic carbon management measures.

As part of the work to incorporate the views of stakeholders, in 2018 CIRCASA conducted regional seminars and an international online survey on the most effective ways to manage soil organic carbon, barriers to their implementation, possible ways to overcome them, and knowledge and research needs for improving the management of soil organic carbon. On October 4, 2018, ECFS organized a seminar entitled “Views of Stakeholders and the Need for Knowledge of Binding of Soil Organic Carbon” at the Faculty of Soil Science at Moscow State University. The seminar discussed existing problems in the management of soil organic carbon and possible solutions proposed by CIRCASA experts. In addition, priority steps were identified that can be taken by scientists, farmers, and politicians of the Eurasian region. The results of the survey will be discussed during the online meeting of the project partners at the end of May 2019. Information on the outcome of this meeting will be published on the [ECFS website](#).

Following the meeting in Cali, a working group of partners from the CIRCASA project was created to develop a Strategic Research Program for 2020–2025. ECFS continues to actively participate in the CIRCASA project and thanks the organizers for inviting them to the meeting in Cali.

## Event Calendar 2019

Date	City, Country	Event
March 24–26	Budapest, Hungary	<a href="#">3rd Agriculture and Climate Change Conference</a>
April 8–12	Moscow, Russia	<a href="#">International scientific conference of students and young scientists "Lomonosov-2019"</a>
April 15–17	Coventry, United Kingdom	<a href="#">The Agricultural Economics Society Conference</a>
April 23–24	Geneva, Switzerland	<a href="#">FAO/WHO/WTO/African Union International Forum on Food Safety and Trade</a>
May 13–15	Brussels, Belgium	<a href="#">Frontiers in Food Safety And Nutrition</a>
May 20–24	Antwerp, Belgium	<a href="#">AquaConSoil: Sustainable Use and Management of Soil, Sediment and Water Resources: 15th International Conference</a>
May 28	Moscow, Russia	The International Conference on Agriculture, Food Security and Nutrition in Eurasia Featuring IFPRI's 2019 Global Food Policy Report (Conference website will be available later)
June 4–7	Gelendzhik, Russia	<a href="#">Grain Market - Yesterday, Today, Tomorrow</a>
June 20–21	Istanbul, Turkey	<a href="#">International Conference on Agronomy and Food Science and Technology (AgroFood)</a>
June 26–28	Halle (Saale), Germany	IAMO Forum 2019: <a href="#">Small Farms in Transition: How to Stimulate Inclusive Growth?</a>
July 2–5	Stavropol and Kislovodsk, Russia	<a href="#">Conference of the Russian Society of Ecological Economics</a>

<b>September 10–13</b>	Leeuwarden, the Netherlands	<a href="#">Saline Futures Conference</a>
<b>September 25–27</b>	Braunschweig, Germany	<a href="#">59th GEWISOLA Annual Conference</a>
<b>October</b>	Yerevan, Armenia	<a href="#">The Eurasian Food Security Conference 2019</a> (Updated website coming soon)
<b>December 5</b>	Sochi, Russia	World Soil Day–2019 (Conference website will be available later)