

12.04.2025

Lyudmila Orlova: “Soil-protective agriculture is in demand, but underestimated”

It is no secret that during the lifetime of the current generation, critical changes have taken place in the ecological system of the planet. Resource opportunities are largely exhausted. Up to 40 percent of the world's land has been degraded, and more than 3.2 billion people are feeling the negative effect. Soil degradation occupies a special place among all the misfortunes, which leads to loss of yields and undermines food security in many countries and regions.

What’s to be done? **Lyudmila Orlova, President of the non-profit partnership National Movement of Conservation Agriculture**, offers an answer to the bread-and-butter question in an interview for ***Moscow Foresight*** journal.

- The concept of "conservation agriculture" has not yet been heard and has not become commonplace. But farmers, both experts and practitioners, are probably well acquainted with it, aren't they?

- The answer can be two-fold: yes and no. Every year, 2 million hectares of land globally are losing their original productivity. Russia is no exception in this regard. Approximately 30% of our land is subject to degradation and 60% is in a state of erosion. Monitoring has shown that desertification is taking place in 35 regions of the Russian Federation. And this is not a horror story in the style of Hollywood horror blockbusters: the first anthropogenic desert in Kalmykia has already appeared before our eyes.

© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.

At the same time, a state program has not been developed and adopted with clearly defined strategic objectives for soil conservation and methods of their implementation. The very concept of "soil" has disappeared from official documents. In many government papers, the word "soil" has been replaced by "land," but these are fundamentally different things.

- You are the founder or, as they say, the "godmother" of the Agroengineering agricultural carbon landfill in the Samara region. What is the purpose of this project?

- Comprehensive studies are being conducted at the landfill to study the deposition of soil organic carbon and greenhouse gas emissions. Experts are searching for the most effective methods of sequestering carbon in the soil and reducing the carbon footprint of products.

In addition to this goal, we see our task as to establish effective methods for managing the carbon cycle and photosynthesis in soil-based resource-saving agriculture (PRZ). The focus is on biological methods to increase soil fertility, yield and product quality, and to prevent erosion, degradation, and desertification.

© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.



© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.

- Is this a private grass-roots initiative at your own risk? Or do you have government support?

- The carbon landfill project was officially approved by the Russian Ministry of Education and Science in 2023. The expediency of its creation hardly needs to be confirmed. Our experts, for example, calculated the carbon footprint of the products of Orlovka AIC LLC at this landfill – over several years.

It was found that in 2020-2023, when producing spring wheat using a soil-saving and climate-oriented approach, the carbon footprint was two and a half times lower than the average for other countries. The overall climate effect, according to our estimates, amounted to 4,0924 tons of carbon dioxide equivalent (eq. CO2). Carbon deposition is about 2.5 tons per hectare.

- What technology does our crop production need to switch to?

- A zero tillage system has been developed, known as No-Till (from English – "do not plow"). Plowing, as is known, leads to wind and water erosion, it destroys the soil structure, soil biota. In addition, chemical additives have lost the effect of increasing yields. Previously, one kilogram of NPK mineral fertilizers applied to the soil yielded 28 kg of grain yield increase, now it is only 4 or a maximum of 5 kg.

Instead of plowing, it is proposed to grind the remaining organic residues after harvesting and turn them into mulch, which is then evenly distributed over the surface of the field. Worldwide, according to FAO statistics, this technology has been implemented on 210 million hectares in different soil and climatic zones.

- Can you prove that investments in this practice will pay off?

- The profitability of any farm only increases as a result. We must not forget about the environmental aspect. When carbon is deposited in soils, greenhouse gases emissions decrease. The carbon footprint is reduced. Today, agricultural products with a low carbon footprint are in demand. In this way, we will be able to support the national strategy for increasing exports of agricultural raw materials and finished products.

- Who are your like-minded people and natural partners in this field?

- We, the National Movement of Conservation Agriculture, have close and fruitful cooperation with quit a number of scientific and educational institutions. Our carbon landfill has become part of the project "Unified National Monitoring System for

© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.

Climatically active Substances", which is administered by the V.V. Dokuchaev. The research is conducted jointly with the Youth Laboratory of Carbomonitoring and Terrestrial Ecosystems of the Institute of Physico-Chemical and Biological Problems of Soil Science of the Russian Academy of Sciences.

- In the absence of understanding of a significant proportion of those who are employed in the agricultural sector and related industries, it is unlikely to be possible to give your undertaking the necessary scope and scale. How do you multiply the number of your allies and associates? How do you convert the ignorant into your faith?

- We use a variety of methods and resources to popularize soil-protective resource-saving farming technologies. A good example, in my opinion, was the

launching the first all-Russian competition for schoolchildren and students "Soil - Life" together with the Central Soil Museum named after V.V. Dokuchaev, Russian Society of Soil Science named after V.V. Dokuchaev, and the Russian Ecological Society.

We have posted more than 1,200 creative works on this virtual platform. These are drawings, essays, and answers to the questions we asked. The geography of the participants indicates the nationwide reach of this initiative. Works from 75 regions were presented, including from the Donetsk People's Republic and the Kherson region. In addition to awarding valuable prizes, we organized study tours for the winners to enterprises in the agricultural sector that are open to innovative solutions.

We publish the print magazine "Resource-saving agriculture". This is the only publication in Russia dedicated to resource-saving technologies, and additionally, we are running the AgroEcoMission social platform.

Our task is to bring together representatives of the state, agribusiness, science and agricultural specialists, to show the practical application of innovative technologies and modern technology using examples of real farms in various climatic zones, to talk about the use of biological farming methods, including the positive, proven experience of their use in other countries.

- Where should I start in practical terms? What is the sequence of steps along this path?

- Microbiologist Chris Nichols built the pyramid of the "brown revolution", which was based on the task of protecting the soil. Then there is the transition to direct seeding, the integration of cattle breeding, diversification and photosynthesis. Direct

© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.

seeding helps to restore the carbon content in the soil and maintain it in a stable state. By the way, direct seeding is included in the 2030 Agenda, one of the 17 Sustainable Development Goals.

- How do you explain the relevance of soil-saving agriculture for ordinary citizens who do not delve into the subtleties of the Sustainable Development Goals proclaimed by the UN General Assembly?

- The explanation is simple. After all, soils are not only one of the inputs in agriculture. Currently, soil erosion is taking place, their degradation is underway, and therefore the quality of products produced in the agricultural sector is under attack and, as a result, consumers are being harmed. Healthy soils are a source of human health.

© MOSCOW FORESIGHT - 2026. ALL RIGHTS RESERVED.