

Biologization - the key to sustainable agriculture
Biologizacja - klucz do zrównoważonego rolnictwa**I International Project Meeting: “Biologization – the key to sustainable agriculture”****Date:** /March 1, 2021, Monday**Place:** EDISON Hotel, Poznań**Host:** POZNAŃ UNIVERSITY OF LIFE SCIENCES

The meeting began with the welcoming of its participants by the project manager Dr. Anna Rosa, from the Institute of Rural and Agricultural Development, Polish Academy of Sciences (IRWiR PAN), and Dr. Paweł Siemiński from Poznań University of Life Sciences. Afterwards, the present persons introduced themselves. Dr. Anna Rosa informed all participants about the agenda of the meeting and presented the most important information concerning the project “Biologization – the key to sustainable agriculture”. The information included, among others, the duration of the project, information related to the schedule, budget and allocation of tasks. As pointed out by the representative of the IRWiR PAN, the main objective of the project is to raise awareness by improving vocational training in the workplace of persons working in agriculture in Europe. The project leader also emphasized that this objective could be achieved through joint learning of partners, exchange of experience, and confrontation of applied practices and methods. Dr. Rosa underlined that the overarching objective of the activities will be to develop a catalog of good biologization practices that will be available on open access terms for all interested entities. The project will also result in creation of lasting partnership between the organizations involved.

Another speaker was Dr. hab. Arkadiusz Sadowski, Professor of Poznań University of Life Sciences, who presented the issue of sustainability of agriculture at the level of selected countries and farms. While presenting various methods of defining agricultural sustainability, Professor Sadowski emphasized that the non-reducing function of the sector is the food production. Nevertheless, in particular, in Europe, there is, according to the speaker, a trend to reduce the environmental impact of agriculture, e.g. by reducing CO₂ emissions. In the second part of the presentation, the results of the sustainability surveys of Polish farms for three governances separately, namely environmental, economic and social governance were presented. The analyses carried out by Professor Sadowski based on the Polish FADN data, allowed identifying five types of farms: permanent and sustainable, average, socioeconomically sustainable, environmentally sustainable, and farms with limited development possibilities. The surveys indicated that the first of these types of farms included on average the largest farms in terms of area, providing significant income to their users. Relatively most often, they implemented environmentally-friendly practices. The highest level of sustainability in three governances in the collectivity of permanent and sustainable farms, as emphasized by Professor Sadowski, was associated with their high resources of material and human capital.

Subsequent presentation during the project meeting was given by Dr. Michał Dudek, representing the IRWiR PAN. His speech concerned current trends in agriculture in the world and Europe, as well as the determination location of processes related to biologization and regenerative agriculture in the current agri-food systems. Dr. Michał Dudek emphasized that the issue of trends in agriculture can be considered very broadly, i.e. from the perspective of subjective (supply and demand), objective and spatial (geographic) aspects. In his opinion, when referring to agricultural trends, it is also necessary to bear in mind organizational transformations, introduced product, process, and marketing innovations, as well as to analyze niche or prospective phenomena which are only becoming popular. The speaker included regenerative farming and practices of its biologization in the latter. The representative of the IRWiR PAN emphasized that alternative approaches to agricultural production are not that popular as the industrial approaches. Their range is estimated at several to ten-odd percent of all agricultural land in the world. However, civilization, cultural and social changes, as well as the need to reduce the adverse environmental impact of human

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activities, will result in the growing importance of new production systems such as agroecology, organic farming, regenerative farming, conservation agriculture, and holistic management.

At the end of the first part of the meeting, the representative of the Poznań University of Life Sciences, Dr Paweł Siemiński, presented and showed the results of the profitability surveys of individual types of farms which are in the field of observation of the Polish FADN in the lecture entitled “Profitability in agriculture – yesterday, today and tomorrow”. His analysis concerned changes in profitability of agricultural production in investigated entities in the period before and after Poland’s accession to the EU. The surveys carried out showed that, over the period in question, the relatively most profitable activities concerned granivorous animals, horticultural crops, and milk cows, and that the lowest profitability of production was in farms with mixed production. In addition, the economist from the Poznań University of Life Sciences observed an increasing share of CAP payments in the incomes of the farms concerned in his surveys. In his presentation, Dr Siemiński also presented a case of a noticeable reduction in the operational costs incurred by the farm selected for the survey due to the use of precision farming tools and the analysis of the agrochemical composition of soils.

The second part of the project meeting started with a lecture of Adam Baucz from the Terra Nostra Agriculture Development Foundation, who participated in the meeting with Ms. Ewelina Spłocharska (Ms. Ewelina participated in the project meeting via the Internet). The President of the Foundation presented the objectives of the represented organization activities, which include, among others, the initiation and promotion of the dissemination of agricultural knowledge and skills and practices relating to the rational management of natural resources and the promotion of the concept of agriculture biologization. Mr. Baucz defined the essence of the phenomenon of agriculture biologization, which, in his opinion, is a long-term and balanced system. It consists of six principles, namely soil and fertilization analysis aimed at nutrients balance; the use of natural fertilizers as substitutes to mineral ones; the use of pesticides and biotechnology in minimal quantities and only where strictly necessary; the use of appropriate agrotechnics; the cultivation of cover-crops; the promotion of biodiversity; the improvement of soil fertility by means of organic carbon (from compost, manure, and crop residues). In his presentation, the representative of the Terra Nostra Foundation also presented the assumptions and main principles of the certification system developed by the Foundation, as part of which Top Farms is the ambassador of biologization.

Afterwards, a representative of the company and a member of the management board of Top Farms Głubczyce (TFG) – Mr. Krzysztof Tkacz referred to earlier presentations and presented basic information about TFG’s activity, operating on 11 thousand hectares in the area of five communes of the Opolskie Voivodeship. As pointed out by the participant of the meeting, the main activities of the company are the production of cereals, rape, potatoes, beet, maize, and milk.

Mr. Paweł Kaczmarek, a member of the management board of Top Farms Wielkopolska, also took part in the project meeting. Mr. Kaczmarek presented the most important biologization activities implemented at Top Farms. These include, among others, the use of manure, the use of wide crop rotation, the reduction of the use of plant protectants, and the seeding of aftercrops (currently they occupy 2000 hectares in the company). The representative of Top Farms also specified the reasons why it was decided to reorient its activities towards regenerative farming from 2012 onwards. According to Mr. Kaczmarek, the increasing production costs, difficulties in maintaining competitiveness and deteriorating agro-climatic conditions in the territory of Wielkopolska have contributed to this. The changes introduced i.e. prioritizing biological production methods in agriculture significantly improved the soil fertility managed by Top Farms, which translated into an improvement in the quality of the agricultural raw materials produced. The representative of Top Farms also presented during his lecture the code of good biologization practices

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implemented at the company, referred to as the Code 5C from English names: calcium, carbon, cover-crops, cultivation, culture.

The representatives of foreign project partners – Iain Dykes from Spearhead Czech s.r.o. and Jurij Petrovic from Spearhead Slovakia – who took part in the meeting via the Internet, also spoke during the event. Mr. Iain Dykes presented the main areas of activity of Spearhead Czech. These include the production of high-quality agricultural raw materials within the plant production (including, among others, cultivation of winter wheat, barley, maize, rapeseed) as well as livestock production, i.e. pig farming and milk production. As pointed out by Mr. Dykes, Spearhead Czech implements the 5C principles in its business. Calcium is sought and used in cultivation as a key nutrient source for plants. Carbon, increasing the organic matter content in the soil, is also important in the production process. The Spearhead Czech actions have increased the organic matter in soil from 2% to 4.5%. Mr. Dykes also added that half of the area cultivated in the company is covered with cover-crops. Field works, for which appropriate machines and equipment are selected, are also minimized and simplified. According to the representative of Spearhead Czech, the applied practices noticeably improve soil quality, as evidenced by annual surveys.

On the other hand, Mr. Jurij Petrovic, Managing Director of Spearhead Slovakia, presented basic information about represented company in his speech. It manages 5 thousand hectares. The company cultivates classic plants such as maize, soybean, winter wheat, sugar beet. The new approach to the soil in cultivation began 7-8 years ago. Since then many experiences have been gathered. As Mr. Petrovic pointed out, healthy soil is the most important when conducting business. If such is available, we do not need large inputs of measures for production. As a result of the care for soil resources, Spearhead Slovakia has also seen a noticeable improvement in plant production. As highlighted by Director Petrovic, the soil is more lively. Weeds are rarely found in the field.

Subsequently, Ms. Katarzyna Seroka from Top Farms thanked representatives of Spearhead Czech and Spearhead Slovakia for attending the meeting and hoped that in the future project partners would meet not only online but also directly. At the same time, Ms. Seroka assured that, despite the unfavorable situation of the COVID-19 pandemic in all participating countries, the Czech and Slovak partners would be informed about the implementation of the project and that they would remain in constant contact with the rest of the group implementing the project.

The joint meeting allowed for an exchange of views on biologization and regenerative agriculture. Following the participants' presentations and discussions on the topics considered during the meeting (in accordance with the agenda), Dr. Anna Rosa took the floor and summarized the entire event. The date of the next meeting was agreed (April 7-8, 2021 – a study visit at Top Farms in the Wielkopolskie Voivodeship) and tasks for the partners and the project leader were determined.