Research and innovative solutions for smart agriculture in Agricultural Academy - Bulgaria

Violeta Bozhanova
Agricultural Academy - Bulgaria

Who we are ?

Agricultural Academy

The only specialized scientific institution in Bulgaria for research, consulting and training in the field of agriculture directly subordinated to the Ministry of Agriculture and Food .

Our strengths

- Established regional network of institutes and experimental stations performing research, application and consulting services.
- Integration of all functional units of the innovation process in agriculture from the idea to the scientific product.

92 % of certificates for plant varieties and breeds, which are issued by the Patent Office of Bulgaria are possessed and maintained by the Agricultural Academy, as well as 4 patents and 31 marks.

smart agriculture

Activities - what we do

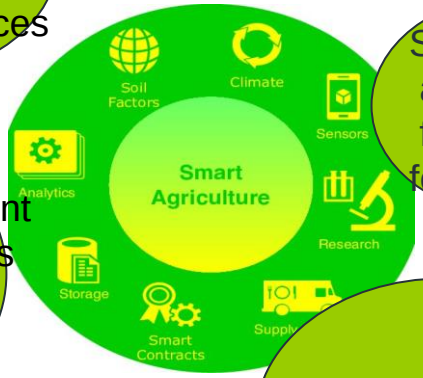
- Research activity
- Applied activity
- Control and evaluation activities
- Expert and Advisory
- Information, consulting and training

Plant and animal Breeding

Fish resources Aquaculture

Sustainable use of resources – Soil, genetic resources

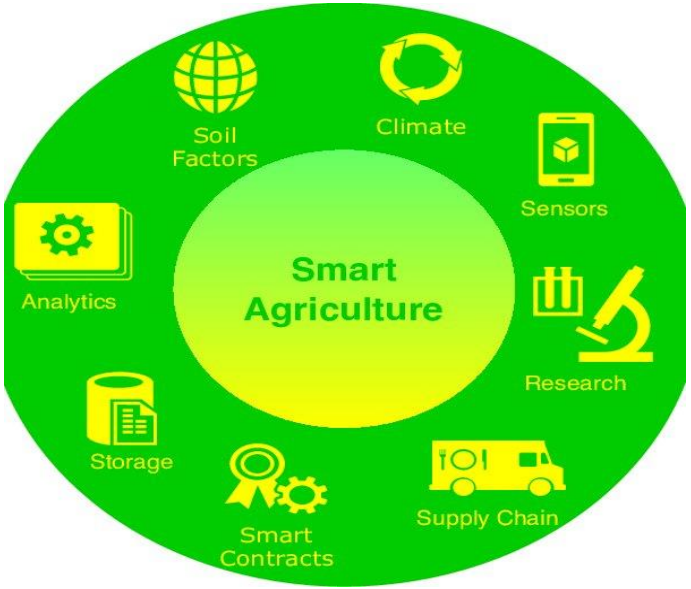
Safe, quality and healthy food, animal feed

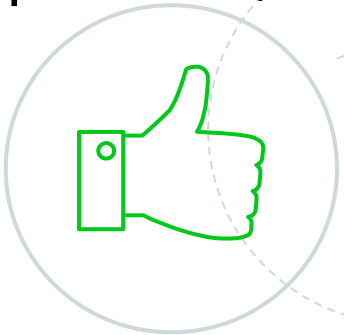


Technology development and technological units for conventional and organic farming

Improving the quality of life in rural areas

Our projects experience,





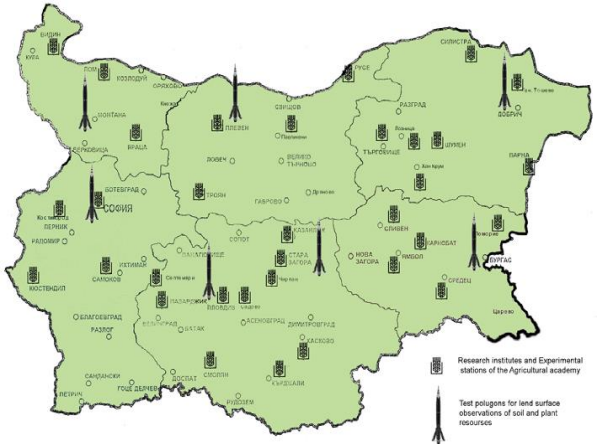
Previous experience -MARS-MERA Project JRC

The European Earth Observation Programme (GMES, Global Monitoring for Environment and Security)

We have experience in assessing the state of soil and plant resources based on joint aerospace and ground measurements. Conducting synchronous and quasi-synchronous terrestrial agronomic observations and agrophysical measurements.

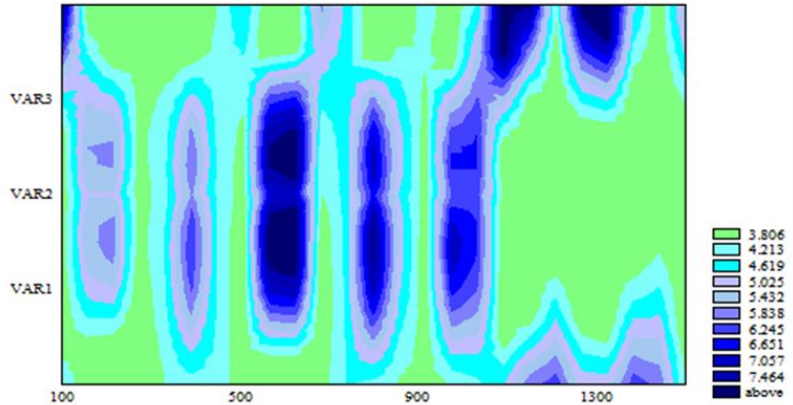
A national network of test sites for aerospace and ground measurements has been established.

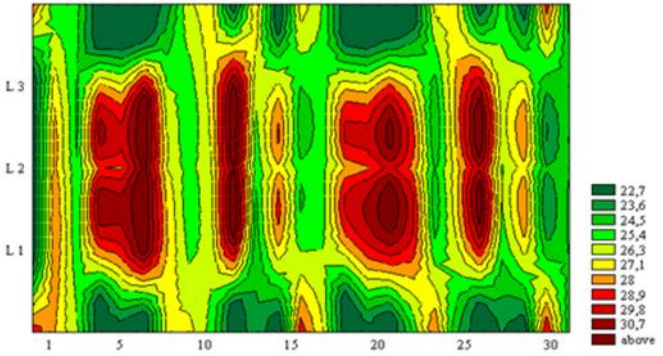
Databases with soil and agrochemical characteristics of the areas and vegetation calendars for main crops.



Ntional network of test areas and spatial distribution of research institutes and experimental stations of the Agricultural Academy

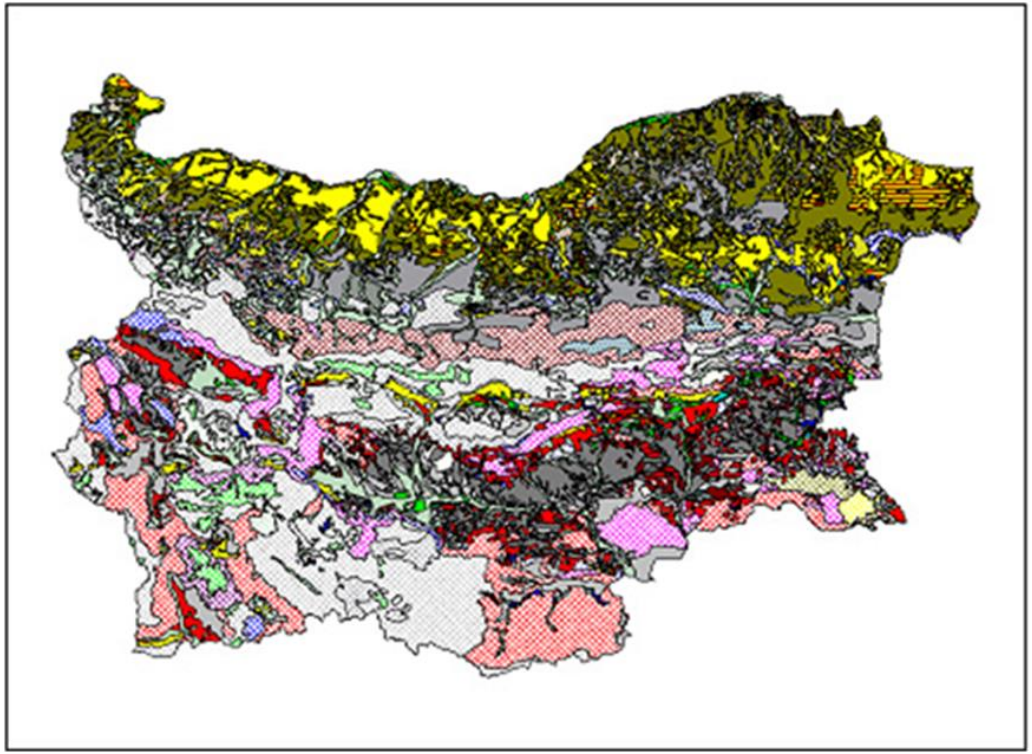
Pavel Milenov, Vassil Vassilev, Anna Vassileva, Radko Radkov, Vessela Samoungi, Zlatomir Dimitrov, Nikola Vichev:, **Monitoring of the risk of farmland abandonment as an efficient tool to assess the environmental and socio-economic impact of the Common Agriculture Policy**. Int. J. Appl. Earth Obs. Geoinformation 32: 218-227 (2014)





Cotton cannopy themperature map on 12:00, based on infrared measurements on the field.

Soil moisture map of the soil surface of the cotton field



Reduced version of the digitalized soil map of Bulgaria, based on the soil map (Koinov et al, 1973) in scale 1:400 000.

Recent projects

National Scientific Program "Healthy Foods for National a Strong Bioeconomy and Quality of Life"

Algorithms for distinguishing conventional and organic crops using field measurements, aerial drone photos and satellite images from Sentinel 2

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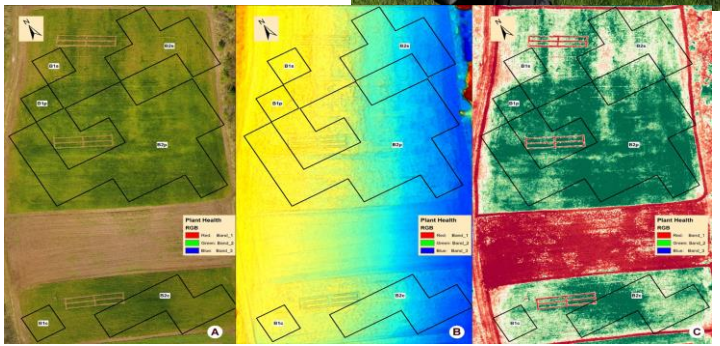
Bulgarian Academy of Science

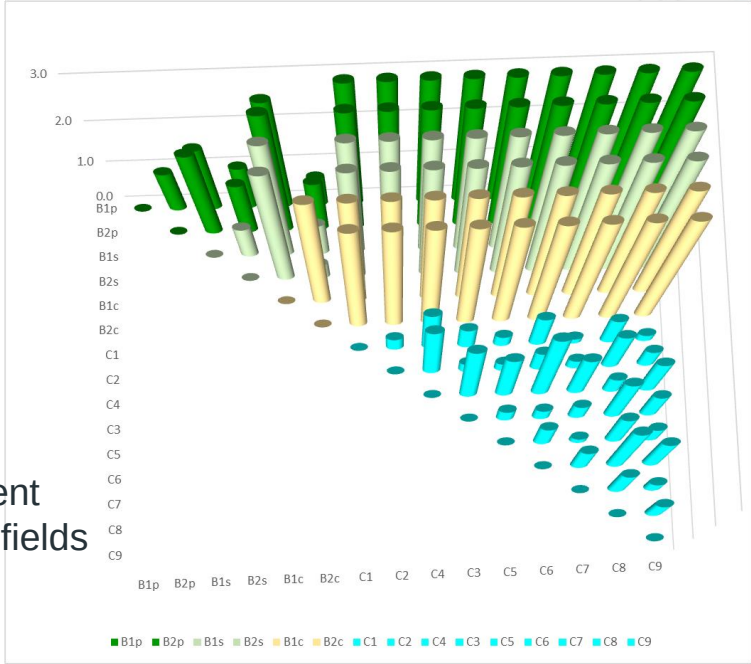


Algorithms for distinguishing conventional and organic crops using field measurements, aerial drone photos and satellite images from Sentinel 2

polygons in the organic field after 3 different predecessor

polygons in the conventional field

Differences in dynamics and development during the different growth stages of the crops in the organic and conventional fields can be traced by spectral characteristics from satellite images and they can be used to distinguish them.



Multidimensional clusterization

Recent projects - National Scientific Program Smart Crops Science

WP 2.3 Use of data from specialized phenomic platforms for selection of plants with a set of valuable traits to facilitate the plant breeding.

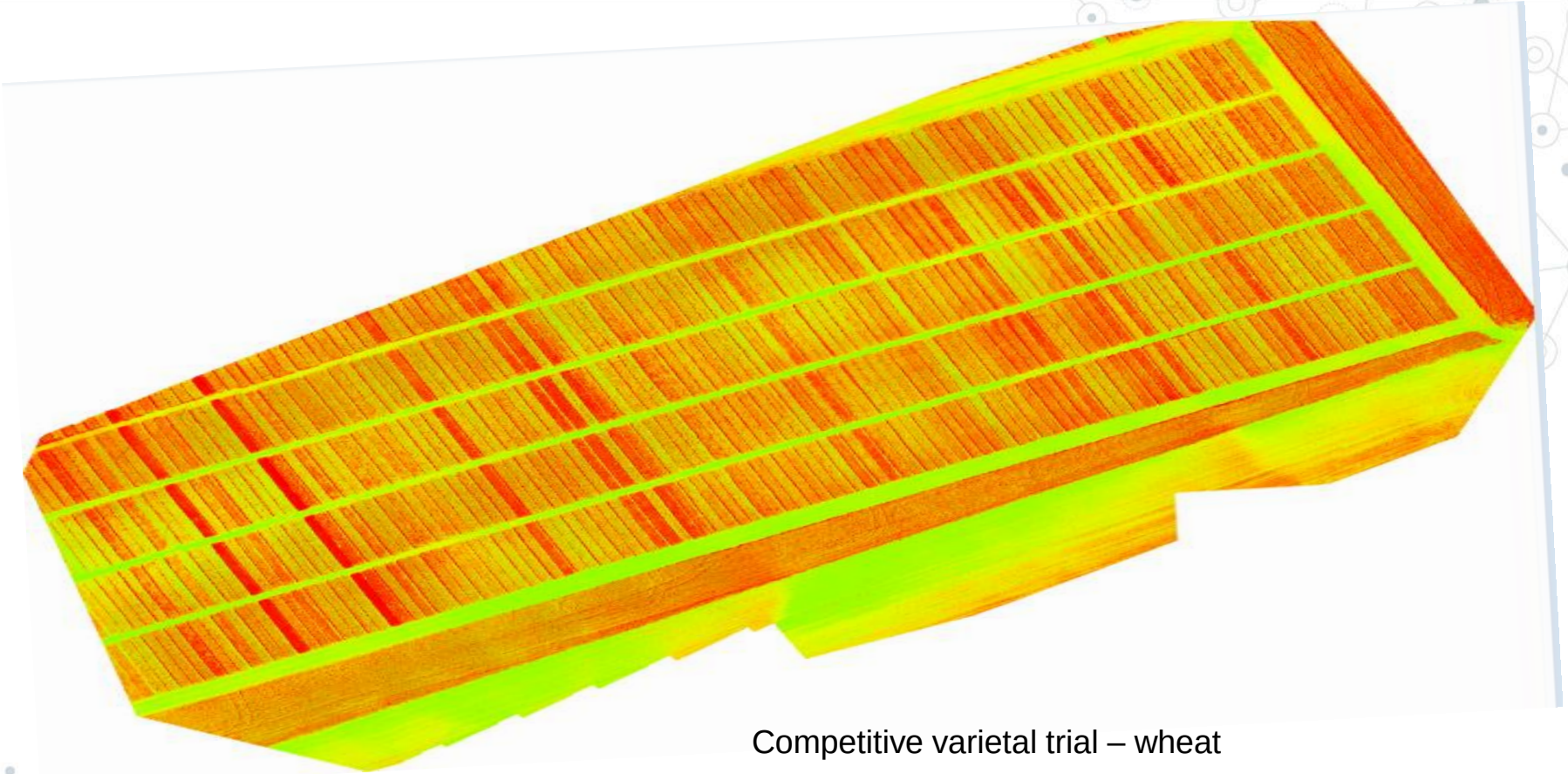
Scientific task 1. Research of the possibilities of the new generation of high-performance technologies for plant phenomics, based on remote and non-invasive measurements of a large number of plants on a complex of valuable breeding traits.

Scientific task 2. Generation of phenomic data and their combination with genomic data in order to identify suitable genomic markers for accelerated creation of new genotypes (varieties) of important agricultural crops with increased yield and adaptability to changing climatic conditions.

Agricultural Academy
Agricultural University – Plovdiv
Nikola Vaptsarov Naval Academy
Space Research and Technology Institute

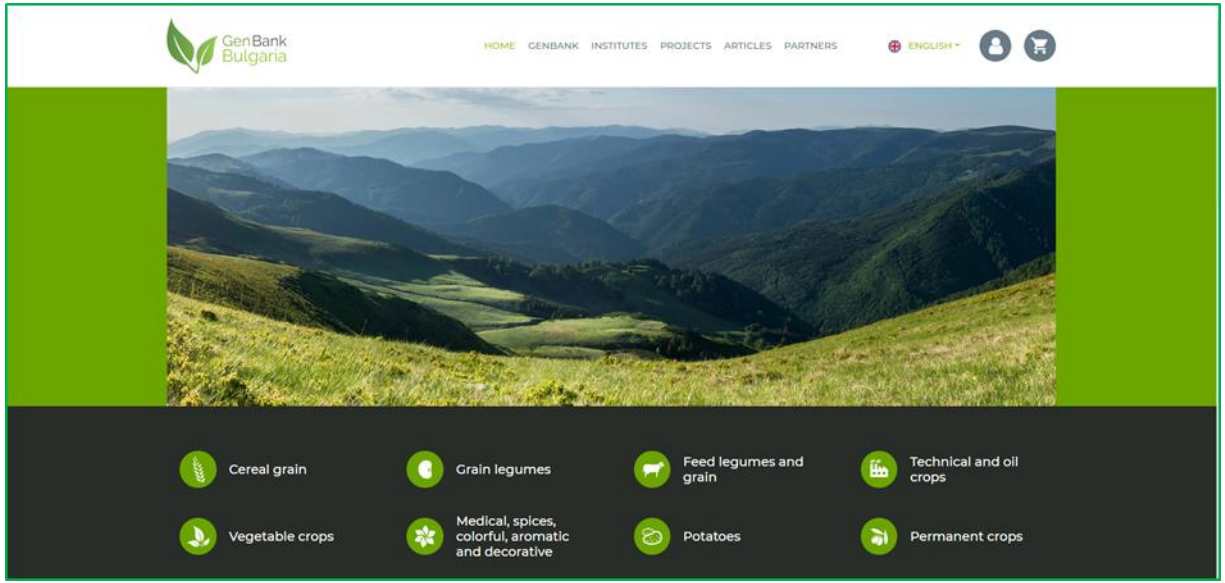
Smart Plant Breeding

smart agriculture



Competitive varietal trial – wheat

BG PLANTNET “Establishment of a national information network of the gene bank - plant genetic resources ”

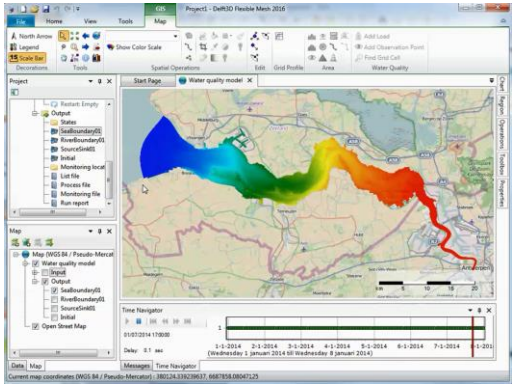


Institute of Plant Genetic Resources Sadovo, Agricultural Academy
Plovdiv University
Institute of Information and Communication Technologies -BAS

TIMMOD *- PROMOTING TECHNOLOGY INNOVATION IN ENVIRONMENTAL MONITORING AND MODELLING FOR ASSESSMENT OF FISH STOCK AND NON-FISH RESOURCES*

TIMMOD project unites the efforts of 6 Project Partners from 5 Black Sea countries (Bulgaria – Agricultural Academy – Institute for fish resources - Varna
, Romania, Georgia, Moldova and Greece)

1) Web-based open GIS tool for implementation of modelled data by stakeholders and end-users;
2) Operational Forecast Platform (OFP) for water quality/circulation in the Black Sea
3) Web-based Mobile Data Tool
4) Database tool of hydro-environmental monitoring and modelling output.



What would we like to solve in Horizon Europe, what projects are we interested in

What kind of partners are we looking for ?

Thanks!

Any questions?

You can find me at:

violetazb@gmail.com