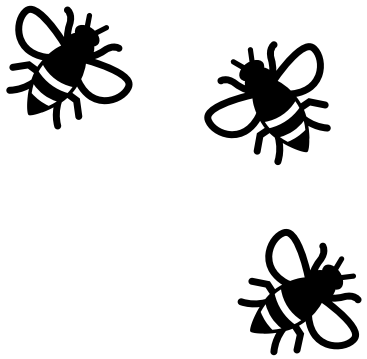
Kick off meeting ProTechBee Project

Promoting capacity building in Serbia through the transfer of **Tech**nical knowledge and environmental protection measures in **Bee**keeping sector

crea
Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria



ProTechBee
Project

ПОЉОПРИВРЕДНИ ФАКУЛТЕТ
УНИВЕРЗИТЕТ У НОВОМ САДУ
1954

Rome
26/07/2024
CREA Headquarter
Via della navicella 2/4

Ministry of Foreign Affairs
and International Cooperation

CEI
CENTRAL EUROPEAN INITIATIVE

The project is part of the Know-how Exchange Programme (KEP) and received funding from the CEI fund at EBRD under Grant agreement n 304.4.2023.004

Council for agricultural research and economics (CREA)

It is the most important Italian research institution in the agro-food, supervised by Ministry of Agricultural Food and Forestry Policies:

- *5000 ha farm*
- *advanced instruments and labs*
- *1800 employees*
- *600 researchers*

6 disciplinary CENTERS:

- Genomics and bioinformatics
- Agriculture and environment
- Plant protection and certification
- Engineering and agro-food processing
- Food and Nutrition
- Policies and the bio-economy

6 supply chain CENTERS :

- Cereal and industrial crops
- Olive, citrus and tree fruit
- Viticulture and enology
- Vegetable and ornamental crops
- Animal production and aquaculture
- Forestry and wood

CREA IT - Research Centre for Engineering and Agro-Food Processing

CREA-IT carries out activities in the field of biosystems engineering, agroindustrial and food processing, especially of fruit and vegetables, cereals and olives, for the sustainable management of the agro-ecosystems, agricultural, agro-food and agro-industrial sectors.

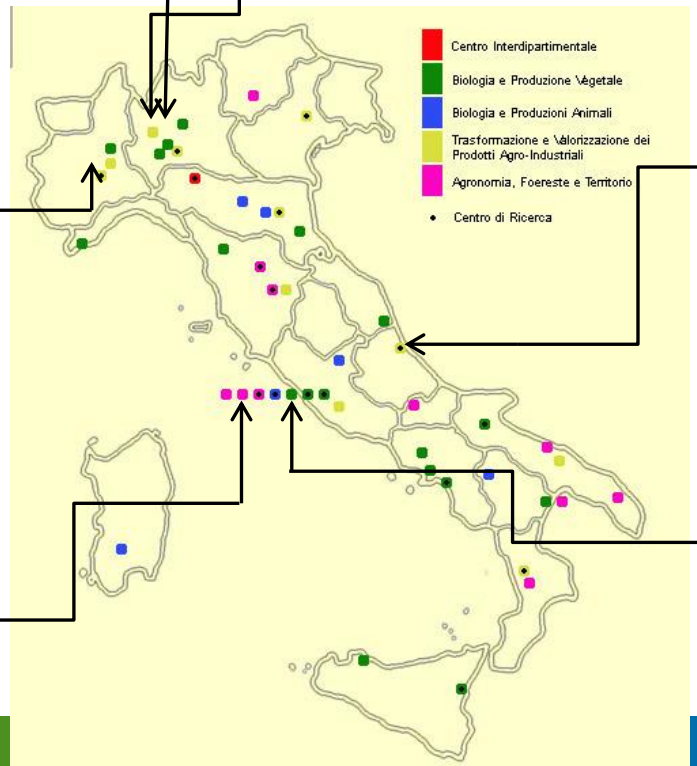
role	TOT
Researchers	55
Technicians	53
administratives	22
Non permanent	25
Tot	**155**

MILANO

Fruit and vegetables processing: quality, postharvest conservation, biocomponents extraction, new processing techniques (i.e solar dehydration)

TREVIGLIO (BG)

agricultural engineering applications: tractors, operative machines, testing OCSE code, mechanization, precision and smart farming, digital agriculture



TORINO

Microbiology and food quality

PESCARA

Olive oil and table olive processing: quality analysis and certification

MONTEROTONDO (RM)

agricultural engineering applications: tractors, operative machines, testing, mechanization, precision and smart farming, digital agriculture

ROMA

Cereal processing: durum wheat quality and pasta production

Site of MONTEROTONDO

MONTEROTONDO Via della Pascolare 16, Monterotondo (Rome), Italy

About 80 ha

Funding mechanism of the project

ProTechBee is a project supported by the Central European Initiative (CEI) through the Know-how exchange program (KEP).

The Know-how Exchange Programme (KEP) is an instrument supporting projects and programmes focused on the transfer of know-how and best practices from EU to non-EU CEI Member States. By co-financing capacity building and technical assistance projects, the KEP offers grants to institutions willing to share their experience with their partners, thus helping non-members to advance on their path towards EU standards and policies

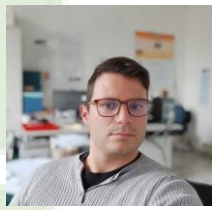
Project idea

The idea of ProTechBee is to transfer the know how gained by the italian researchers on digital beehive systems toward the serbian colleagues in order to connect the two countries (Italy and Serbia) in the beekeeping sector, to face the problems of beekeeping and to contribute to bee preservation.

ProTechBee has also the ambition to propose alignments in agricultural regulations between EU and Serbia, raising political awareness on the beekeeping sector, but also to give elements to support the future perspective of including Serbia as a EU Member State.

Consortium and team members

CREA is the leading Italian research organization dedicated to the agri-food supply chains, operating as a legal entity under public law and supervised by the the Ministry of Agriculture, Food Sovereignty and Forests (MASAF).



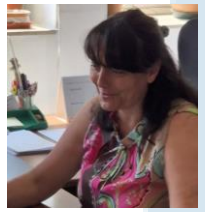
Ph.D. Antonio Scarfone, Project coordinator

Ph.D. Simone Bergonzoli WP leader

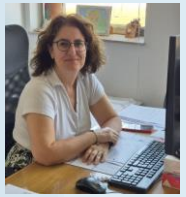
Ph.D. Elio Romano WP leader

Mr. Alex Filisetti Technical expert

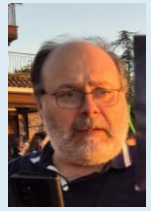
Ph.D. Alessandro Saurdi collaboration in WP4



Mrs. Elena Certelli Administrative staff



Mrs. Beatrice Bassottti Administrative staff

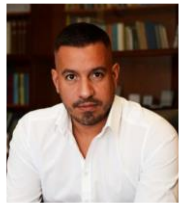


Mr. Paolo Mattei IT expert, Web site developer

The Faculty of Agriculture - Novi Sad University is a higher education and scientific research institution whose aim is to promote high-quality educational processes, scientific discipline development, and knowledge diffusion in the economy and society.

Ph.D. Marko Kostic Serbian project coordiantor

Ph.D. Krstan Kešelj collaborator in WP3 and WP4



Ph.D Zoran (Slobodan) Stamenković collaborator in WP3 and WP4

Project Structure

ProTechBee

Project

WP1

Setup of the monitoring system in Serbia and development of the web platform

Lead by CREA

WP2

long term data acquisition and system upgrade

Lead by CREA

WP3

student training

Lead by NOVISAD

WP4

Matching EU and Serbian perspectives in the agricultural sector

Lead By NOVISAD

Project Objectives

ProTechBee

Project

- Exchange adequate technologies and knowledges
- Demonstrate the opportunities of agricultural digitalization
- Rise interest of students in beekeeping and digital sector
- Promote the resilience of beekeepers and facilitate the beehive control
- Promote alligned EU-Serbian legislation
- Rise political awareness and support environmental programs

Project Planning – First Year

We have three month delay – evaluate if we need three month extension

M1 - (January 2024) - Web meeting to inform partners about administrative status of the project, organize the Kick-off meeting in Rome, discuss the content of project roll-up, poster and leaflets.

M2 - finalization of the project LOGO, enrollment in social channels (Facebook, twitter, Instagram and YouTube channel).

M3 - finalization of the project roll-up bunner, poster and leaflet in English.

M4 - Kick off meeting in Rome specific management structure; governance, communication flows and methods will be presented in the Kick-Off Meeting.

M5 - Project Web-site ready. **Translation** of the project roll-up banner, poster and leaflet (ready for printing at the end of M5)

M6 - Setup of upgraded beehive in Serbia and their connection to the web platform. The CREA IT will be also responsible to train the colleagues from Faculty of Agriculture about the digital beehive systems and its main components, including sensors, hardware and cables.

M9 - Web meeting to evaluate the beehive sensors functionality; presentation of the promotional project video.

M12 - Web meeting finalized to organize the mid-term meeting in Novi Sad, optimize resources, discuss the project progress and fix eventual problems.

Project Planning – Second Year

M15 - Mid-term meeting at Novi Sad University, Faculty of Agriculture. The meeting will be useful to discuss the project progress with respect to apiary status, sensor functionality and identification of potential elements of synergies in agricultural and bee legislations between EU and Serbia. This will be done through physical presentations that will summarize the work done by the partners in the first part of the project.

M21 - web meeting finalized to organize the final meeting in Novi Sad, optimize resources, discuss the project progress and fix eventual problems.

M18 - web meeting finalized to optimize resources, discuss the project progress and fix eventual problems. Minutes of the meeting will be reported to the referring CEI officer by the Coordinator. A progress report will be presented to the referring CEI officer by the Coordinator as according to GA

M24 (December 2024) - Final Meeting at Biosense institute – Project results will be presented in presence of different institutions and political authorities – the meeting has also the objective to show potential lines of alignments in legislation to match EU and Serbian perspectives in the agricultural sector.

Project LOGO

provided by BioSense institute before leaving the project

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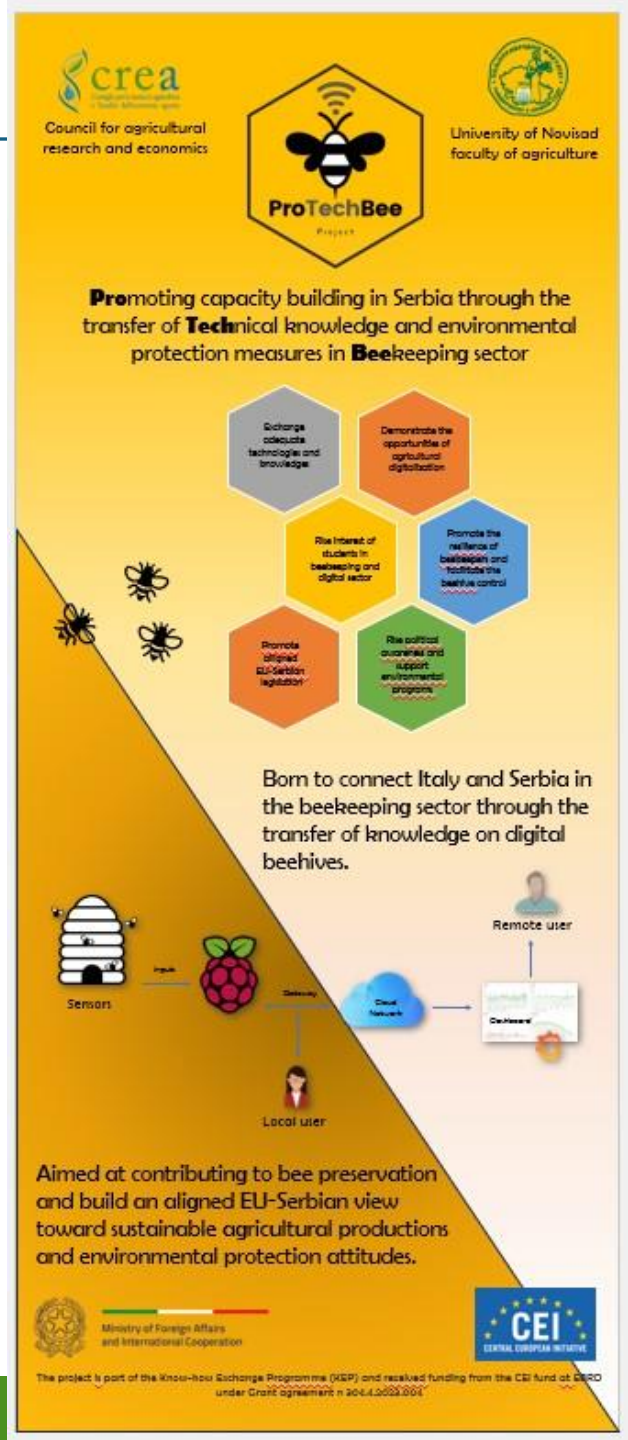
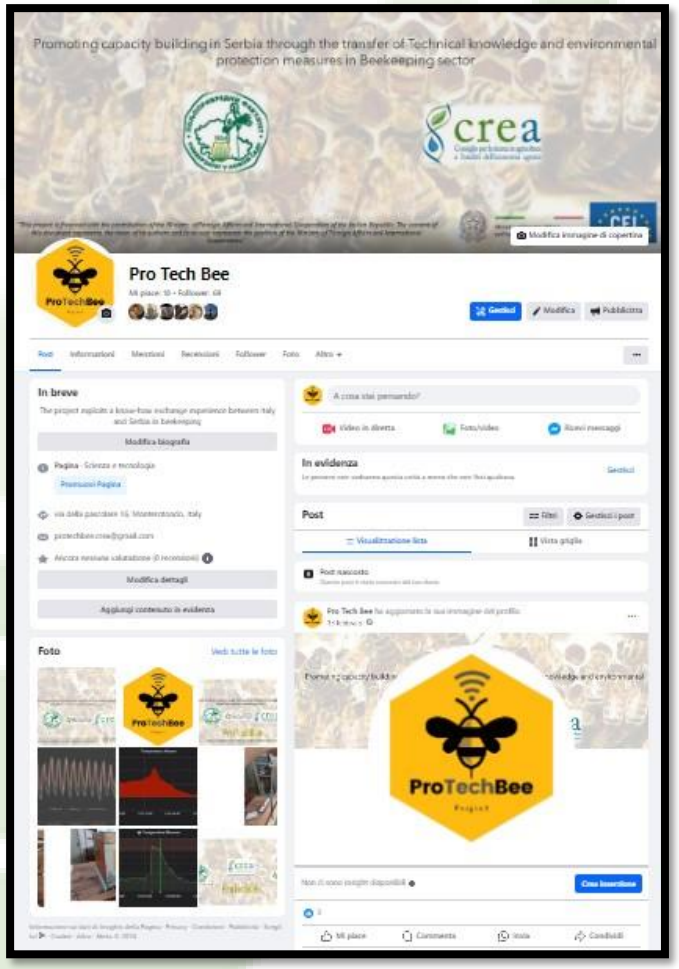
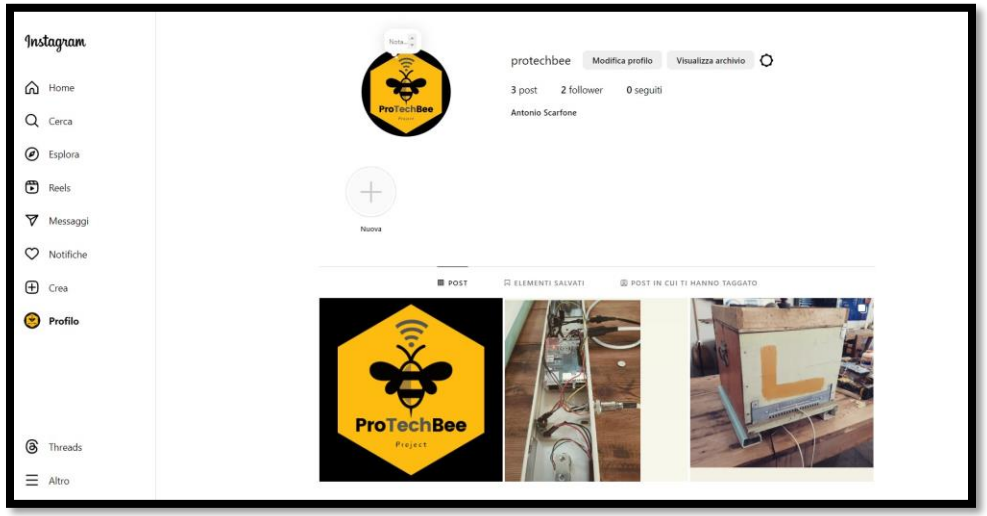
Roll-up bunner developed



ProTechBee on Social Media

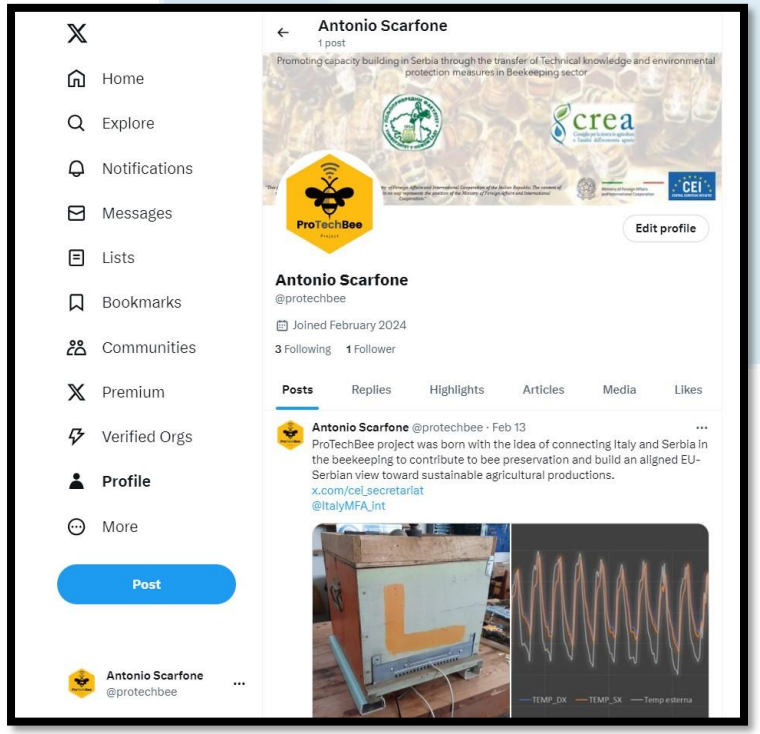


Facebook



Instagram

Twitter



NEXT STEPS

FOR CREA

Finalize the poster and leaflets in english and send rollup-bunner, poster and leaflet to Novisad (by early August)

Finalize the construction of the digital beehive and verify the functionality of both commercial and selfmade digital systems (by mid September)

Finalize the project website and the connection to the web platform (by mid September)

Instal the apiary in Serbia with both commercial and selfmade digital beehive (by end Septemebr)

Acquire all the material for the promotional video (by end September)

For NOVI SAD

Acquire three complete wood beehive with well developed bee colonies (mid septemebr)

Translate and print rollup banner, poster and leaflets (mid September)

Organize a seminar/training day for the students at the faculty on digital beehive (end of September in presence with CREA)

WP1: Setup of the monitoring system in Serbia and development of the web platform (lead: CREA) M1- M6

In this WP, the CREA IT and the University of Novi Sad, Faculty of Agriculture will work closely to set up a demonstration apiary at the Faculty of Agriculture. The apiary will be composed of three sensorized beehives to acquire data for the entire duration of the project. The CREA IT will be also responsible to train the colleagues from Faculty of Agriculture about the digital beehive systems and its main components, including sensors, hardware and cables. The steps that will be followed are listed below:

- Creation of a web interface to be suited for acquisition of new apiary
- Acquire the material to set up the apiary.
- Setup of the demonstration apiary at the Faculty of Agriculture.

Creation of a web interface to be suited for acquisition of new apiary - **under construction**

https://protechbee.crea.gov.it/

The web site will be connected through a link to the web-interface of the beehives to monitor and dowload data

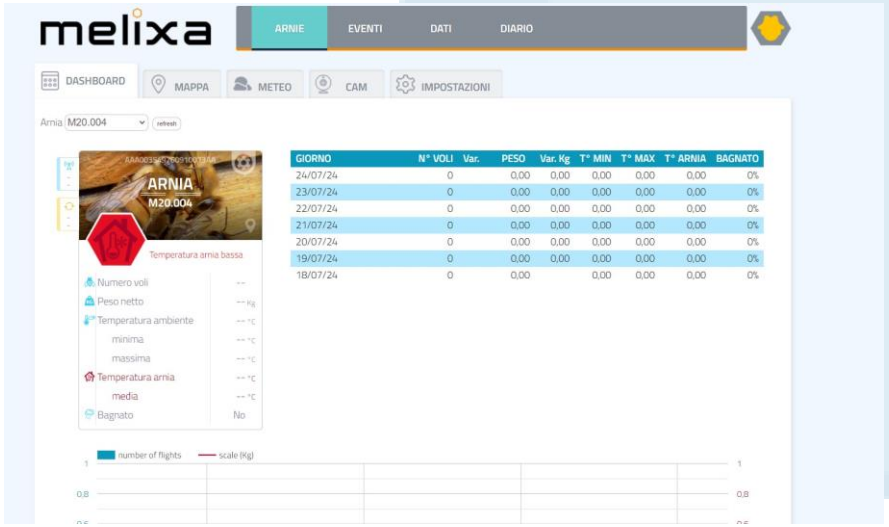
CEI CENTRAL EUROPEAN INITIATIVE

Promoting capacity building in Serbia through the transfer of Technical knowledge and environmental protection measures in Beekeeping sector

Ministry of Foreign Affairs and International Cooperation

Commercial beehive used as control

Material to set up the apiary: we already have the Master beehive with Sensors for measurements of weight, internal temperture and number of flights.

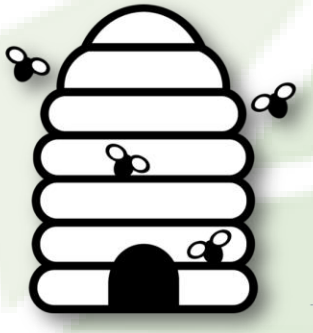


Experimental beehive proposed by CREA: main hardware components

Main hardware components

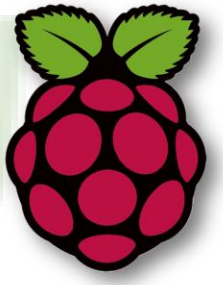
- load cell 20 and 50 kg capacity
- HX711 load cell interface module
- 64 GB UHS Micro SD
- 128 GB UHS Micro SD
- Black ABS case for Raspberry Pi 3 with fan housing
- Raspberry Pi 3 Model B
- Raspberry Pi 3 Model B+
- PT100 probes

Experimental beehive proposed by CREA: working scheme



Sensors

inputs



Gateway

Remote user

Local user

Setup of the demonstration apiary at the Faculty of Agriculture

How the apiary should look like

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Thanks