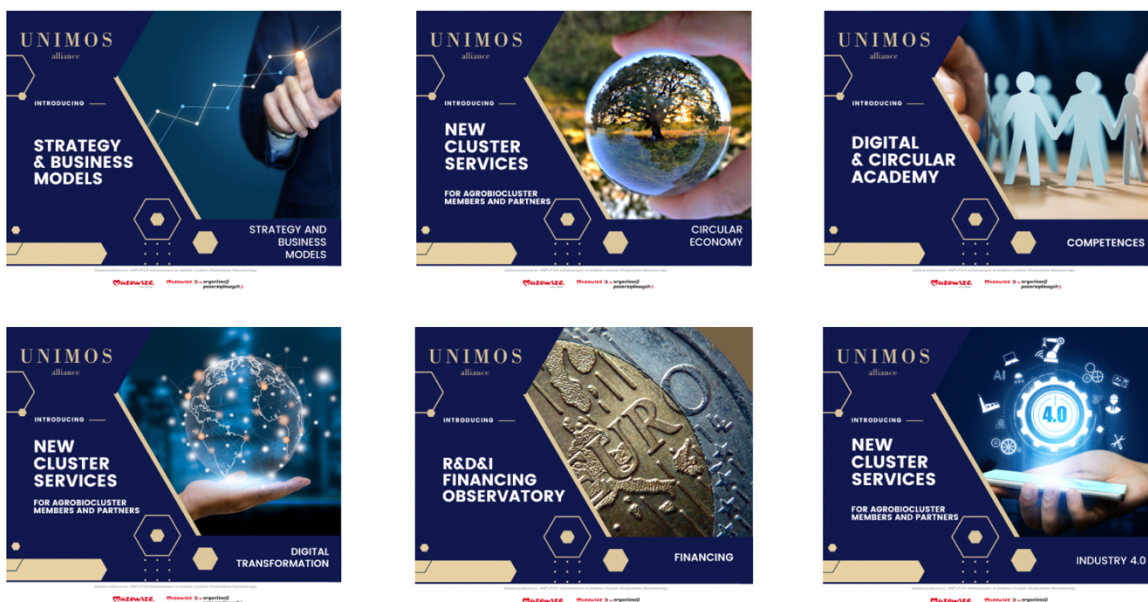


## How to create new cluster services in the field of digital transformation, circular economy and Industry 4.0?

Since April 2022, UNIMOS Foundation has been working on the development of three new cluster services to support members of AgroBioCluster in digital transformation, Industry 4.0 and Circular Economy within the project called AMPLIFICA and co-financed from the Mazovia Regional Government funds. The project was oriented on strengthening competitive position of the cluster on the market by expanding a catalogue of development services.



The three new services have the following components:

- Strategy & new business models with examples of companies that implemented those models;
- Financing - R&D&I Funding Observatory – related to the structured format of monitoring and selecting financing opportunities that can serve as a funding line for digital transformation, circular economy and Industry 4.0 development
- Competences – linked with the skills and capabilities needed to create international consortia for Horizon Europe calls for proposals and examples of companies and organizations that successfully implement the process of digital and circular transformation and Industry 4.0.

The building blocks services were implemented according to different types of innovation drivers and in speed, agile and collaborative sessions that were required by cluster members. As an added value, the implementation was supported by international experts in the cluster services field who work together along and across agri-food value chains, having as a common topic apple production – one of the biggest assets of the Mazovia region.

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1. **Digital transformation cluster service** was focused on **challenge-driven innovations** to solve solving existing challenges creatively. In this case, product passport for apples was a topic brought to consideration by cluster members who collectively search for solutions related to the standardization of the information about concrete product lot (relevant information that should be included in the product passport), how to motivate farmers / producers to include it and how to foster its authenticity and real-time collection.
2. **Circular economy cluster service** was aimed at **resource-driven innovations** that uses availability of biomass, by-products / waste streams as a new source of value. In this case, the implementation was focused on upcycling, revalorization and re-purposing (waste-to-value) from apple production and apple juice processing. The main idea was to identify new ways of usage of waste streams, by-products and

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underutilized resources from apple production and apple juice processing, such as apple pomace, apple prunings, etc.

3. **Industry 4.0 cluster service** was oriented on **technology-driven innovations** (new business models, ideas and processes) which are driven by new technological capabilities. In particular, members and partners of AgroBioCluster worked together on Space, satellite solutions and unmanned aerial vehicles (UAV) for apple production that could be applied for sustainable and predictable apple production. At least four new project concepts have been conceptualized with the analysis of potential competences needed to implement it.

As a new potential services, new concepts were identified for further development of new cluster services, such as:

- expertise-driven innovations driven that use know-how, expertise and new (collaborative) way thinking for new product development from apples and apple juices
- consumer-driven innovations that consider customer needs and expectations for the design of new affordable, consumer-centric packaging and more sustainable packaging solutions for apple juices

For each of the services, required competences and skills have been identified and potential funding opportunities have been presented to select the most appropriate call from Horizon Europe Programme. The preselection of 80 open calls from Horizon Europe draft Work Programme have been distributed to the cluster members and partners to match the most appropriate and of major interest. The following Horizon Europe - Work Programme 2023-2024 destinations have been analyzed: Food, Bioeconomy, Natural Resources, Agriculture and Environment (including FARM2FORK, CIRCBIO, Zero Polutions, Communities and Governance), Digital, industry and space (including Twin Green and Digital Transition, Resilience, Digital & Emerging Technologies for Competitiveness and Fit for the Green Deal and A human-centered and ethical development of digital and industrial technologies), Culture, creativity and inclusive society, European Innovation Ecosystems (including European Innovation Ecosystems (EIE) and INNOVSMES - Partnership on Innovative SMEs) and WIDENING. The implementation of the services was promoted at the Mazovia Development Forum with a promotional stationary event, as well as by online publications elaborated both in Polish and English.

The implementation of the AMPLIFICA enables increasing of knowledge, awareness and skills of cluster members, partners and cluster management team in transformation processes towards industry 4.0 and circular economy. Three new services were created for the members of the cluster with a focus on the development of innovation, new products and services and digital forms of promotion for the development of domestic sales and international products. Additionally, regional and international recognition of the cluster was boosted thanks to PR and community building activities, facilitating both personal and virtual interconnections and offering cluster products and services on international markets through joint foreign promotion in prestigious international events. Moreover, AMPLIFICA supported the development of new concepts and opportunities for participation in R&D projects consortia (such as Horizon Europe), increasing the involvement of Mazovian clusters and SMEs in international projects for the development of research and innovation.

Zadanie publiczne pn. AMPLIFICA dofinansowane ze środków z budżetu Województwa Mazowieckiego.

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Contact details:

UNIMOS Foundation – Coordinator of AgroBioCluster

Katarzyna – [kkowalska@unimosalliance.com](mailto:kkowalska@unimosalliance.com)

Anna – [abialik@unimosalliance.com](mailto:abialik@unimosalliance.com)