

BBI JU flagship project in Latvia- VIOBOND



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LATVIJAS VALSTS
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LATVIAN STATE INSTITUTE OF WOOD CHEMISTRY

Mission

Development of knowledge-based, environmentally friendly low-waste technologies for obtaining competitive materials and products from wood and other plant biomass for sustainable utilisation of natural resources for economic, social and ecological benefits.



LATVIAN STATE
INSTITUTE OF
WOOD CHEMISTRY

- **Founded in 1946**
- **101 employees**
- **41 Dr.**
- **turnover 2023 – 4.5 mill. EUR**



International evaluation – Shared third place
In Natural Science Panel – First place



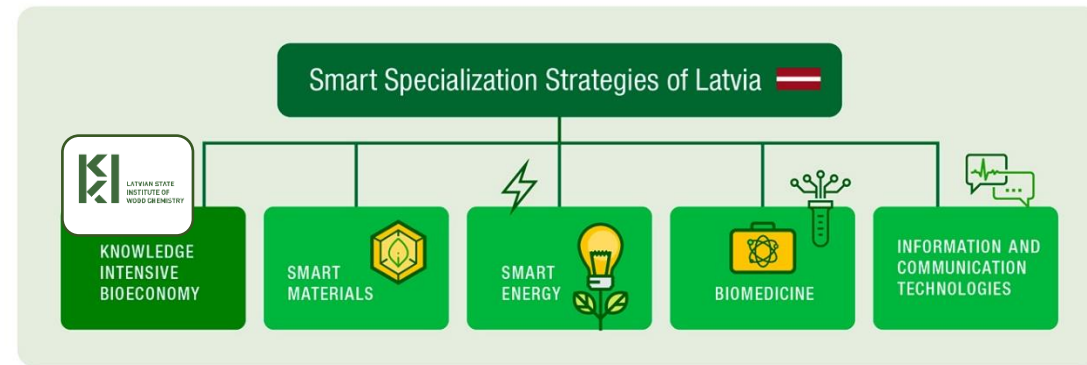


VISION



- **Modern research centre**
- **Wood and other biomass**
- **Broad research infrastructure potentialities**
- **Tradition-based creative and dynamic researchers' staff**
- **Open to new ideas and science challenges**

STRATEGY



Industrial, research, innovation and bioeconomy policies, R&D requirements from forest, agricultural and wood processing industries, which allows identifying three excellences



Wood Materials

Wider use of wood and wood-based materials in building and construction:

improving the durability properties and providing a predictable service life. In the studies, ecological and economical products and technologies are sought for improvement of biodurability and ageing resistance.



Biorefinery

The valorization of European and local plant biomass:

mainly wood and its by-products, considering biorefinery and wasteless conceptions, is the vital conditions for the development of bioeconomy. The advanced analytical tools for chemical analysis of natural products and processes of their obtaining are directed to complete sustainable use of raw materials, through designing of a multi product or feedstock portfolio.



Green Chemistry

Renewable feedstock as raw materials for synthesis and production of chemicals and polymers:

which substitute petrochemical origin materials. Ecologically and economically viable polymers synthesis method, up-scaling of polymer production. Life cycle analysis (LCA) of developed processes.





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ORGANISATIONAL STRUCTURE



LATVIAN STATE
INSTITUTE OF
WOOD CHEMISTRY



LABORATORIES

WOOD BIODEGRADATION
AND PROTECTION LABORATORY

LABORATORY OF BIO-ENGINEERING

POLYMER LABORATORY

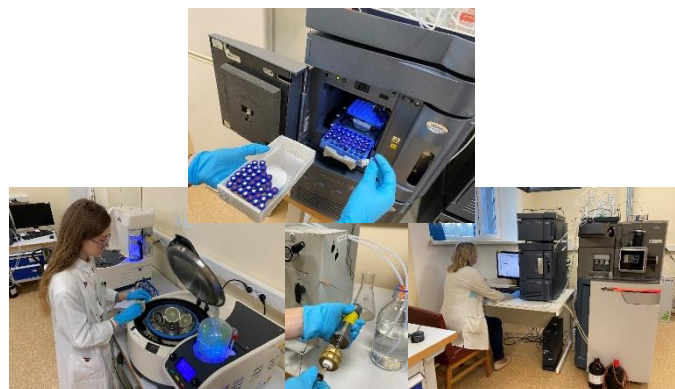
CELLULOSE LABORATORY

LABORATORY OF BIOREFINERY

LABORATORY OF LIGNIN CHEMISTRY



PILOTSCALE HANGAR



LIQUID CHROMATOGRAPHY CENTER



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FINANCIAL INSTRUMENTS IN LATVIA AND EUROPE



- University incubators, Innovation Vauchers et.c.
- European Regional Development Fund - support (R&D) activities of scientific organization for raising capacity for innovations together with industry as in the early stage, as in the commercialization stage.
- Post-doctoral Research Aid - to develop the skills of new scientists and to increase the scientific capacity
- National scale scientific and commercial contractual research projects
- Latvian Council of Science – Fundamental studies
- Horizon 2020, CBI-JU, ERANET, Norway grants and FP7 et.c.



M-era.Net



Participation in BBI (CBE) JU

Reinvent

The automotive industry is constantly looking for new materials in order to reduce the vehicle weight and comply with legislation while Buildings...

Project focus: Construction

Completed Spin-off

US4GREENCHEM

The US4GREENCHEM project aims to design a bio-refinery concept for the complete valorisation of lignocellulosic biomass that is energy and cost...

Project focus: Bio-based chemicals

Completed LSIWC

SuperBark

Adhesives and coatings are an integral part of everyday consumer products, but most of them are made with harmful fossil-based chemicals. SuperBark...

Project focus: Bio-based polymers & plastics

In progress RTU

VIOBOND

Phenolic resins are one of the most versatile polymers invented, with a wide range of industrial applications ranging from vehicle components to...

Project focus: Construction

In progress LSIWC

Polymers-5B

Today's society increasingly relies on plastic materials leading to an important impact on climate change and planetary health. Over 97% of plastics...

Project focus: Bio-based polymers & plastics

In progress LSIWC

Zest

Traditional protein sources struggle to meet the global demand due to the ever-growing population and sustainability concerns. The ZEST project...

Project focus: Food, feed & cosmetics

In progress LSIWC

Latvia

First-of-its-kind industrial biorefinery

Opportunities for the bioeconomy

Socio-economic benefits

- INNOVATION
- INCOME DIVERSIFICATION

Main resources in CBE JU projects

- AGRO RESIDUES
- FORESTRY RESIDUES

Bio-based Industries Consortium

€9 million
CBE JU funding in Latvia

€8M (Private companies) | **€1M** (Universities & research centres)

1 SME participant

€221 125 SME funding

4 beneficiaries

1 coordinated project

VIOBOND

Biorefinery location: Riga

Company: Latvijas Finieris

Resource: Wood residues (lignin)

Products: Bio-based resins.

Benefit: This industrial biorefinery showcases the feasibility and market potential of bio-based resins for eco-friendly wood panels and construction materials. The project could be replicated across Europe, highlighting Latvia's leadership in promoting greener construction materials.

Check all the projects in the country

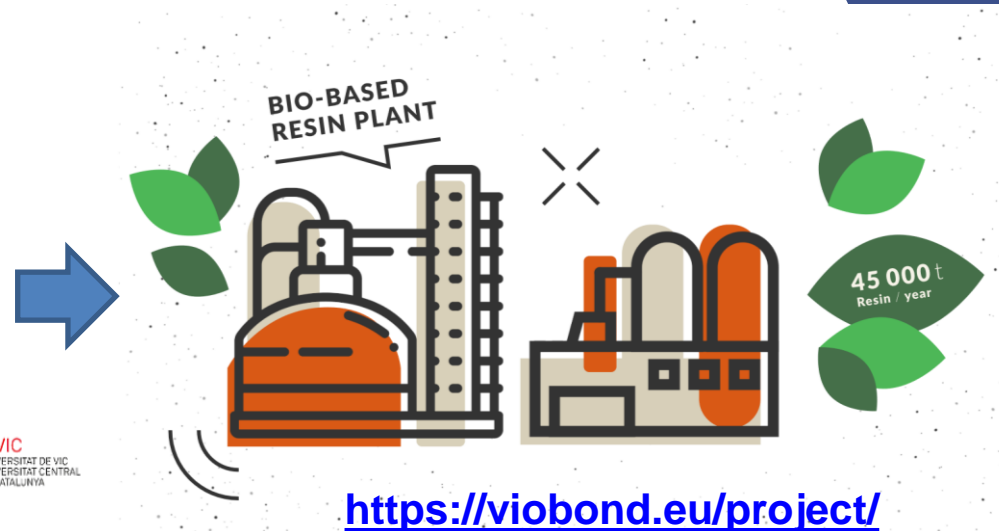
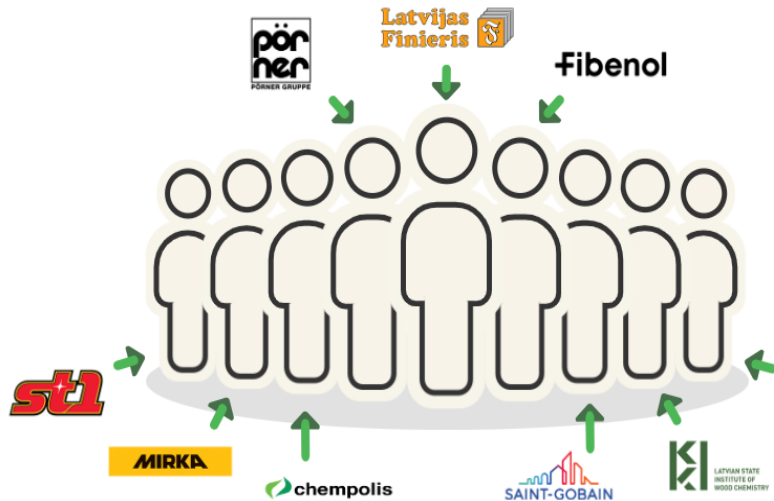
EUROPEAN PARTNERSHIP

Co-funded by the European Union

Call – H2020-BBI-JTI-2020

Topic - BBI-2020-SO1-F2 - Turn lignin into materials and chemicals for high-end applications

VIOBOND – sustainable binder: Upscaling new lignin-phenol-formaldehyde resin production with wood-based biorefinery lignin



Project Information

VIOBOND

Grant agreement ID: 101022987



DOI

[10.3030/101022987](https://doi.org/10.3030/101022987)

Start date

1 September 2021

End date

31 August 2026

Funded under

SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy

Total cost

€ 35 238 125,00

EU contribution

€ 15 897 000,00

Coordinated by
LATVIJAS FINIERIS A/S

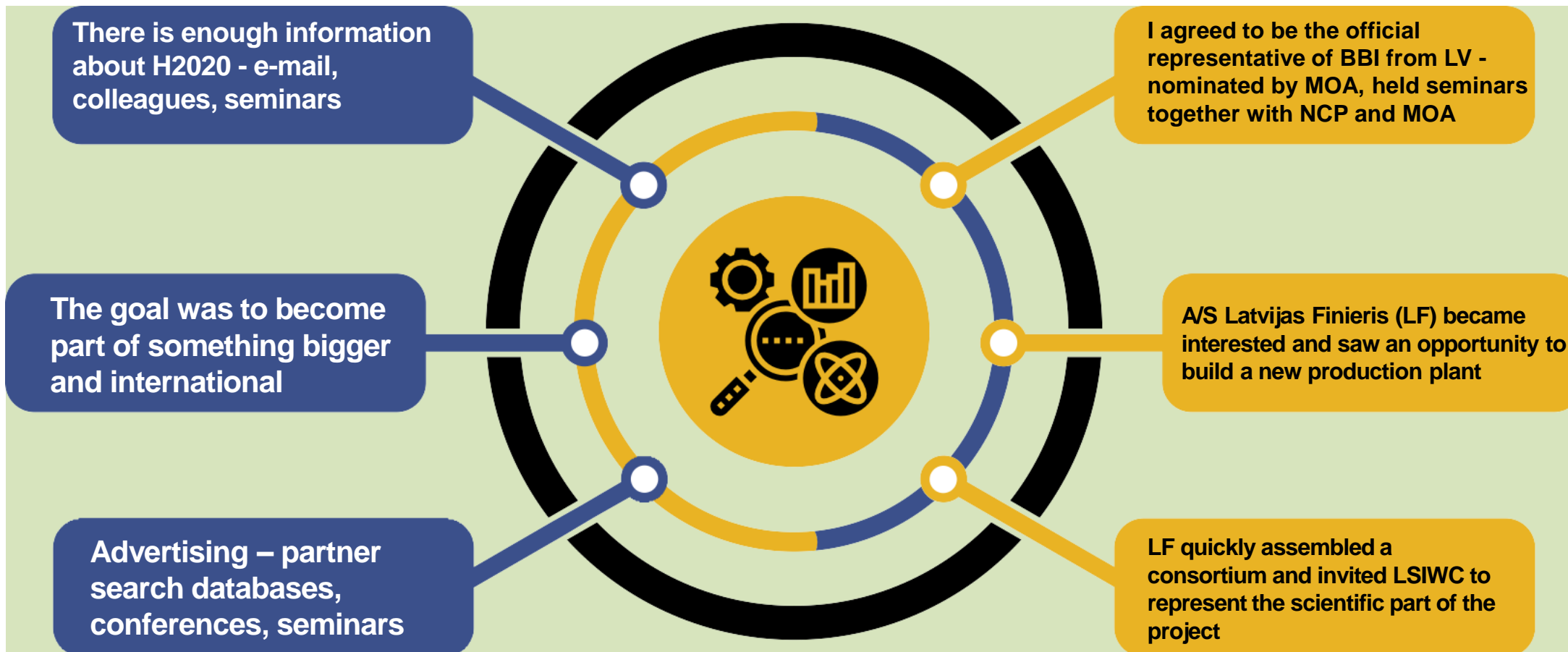
Latvia



9 partners from 5 countries



How we came to participation in H2020/HE – BBI?



Submission of VILOBOND - submitted 2 times

1st time - unsuccessful

Call: BBI2019.SO3.F3 – Produce high-performance bio-based alternatives to harmful products or processes to protect and enhance human health and the environment

7 partners

Excellence (5), Impact (4,5), **Implementation (2,5)**

Disadvantages:

- The rush was noticeable because we were short in time, so it appeared in the description of the implementation, as it is usually written the last:
- The partners did not have proportional TRLs in all value chains
- Risks were not adequately described
- WP cooperation was not described in sufficient detail
- Performance indicators and "milestones" were compiled near the end of the project, which would not allow to control the project's progress and mid-term
- Costs were not described detailed enough
- The call may not have been 100% appropriate

2nd time - successful

Call – H2020-BBI-JTI-2020; Topic - BBI-2020-SO1-F2 - Turn lignin into materials and chemicals for high-end applications

9 partneri

Excellence (5), Impact (5), **Implementation (3,5)**

- A more appropriate call
- covered all value chains – several suppliers of raw materials and several endproduct producers

There were some drawbacks:

- The description of the WP was still not described in sufficient detail - balanced PM and duration of WP - if more PM and longer WP - it is necessary to justify it - why.
- The business description of the final products was insufficient - there was a lack of competitor analysis, licensing options and a description of market demand.

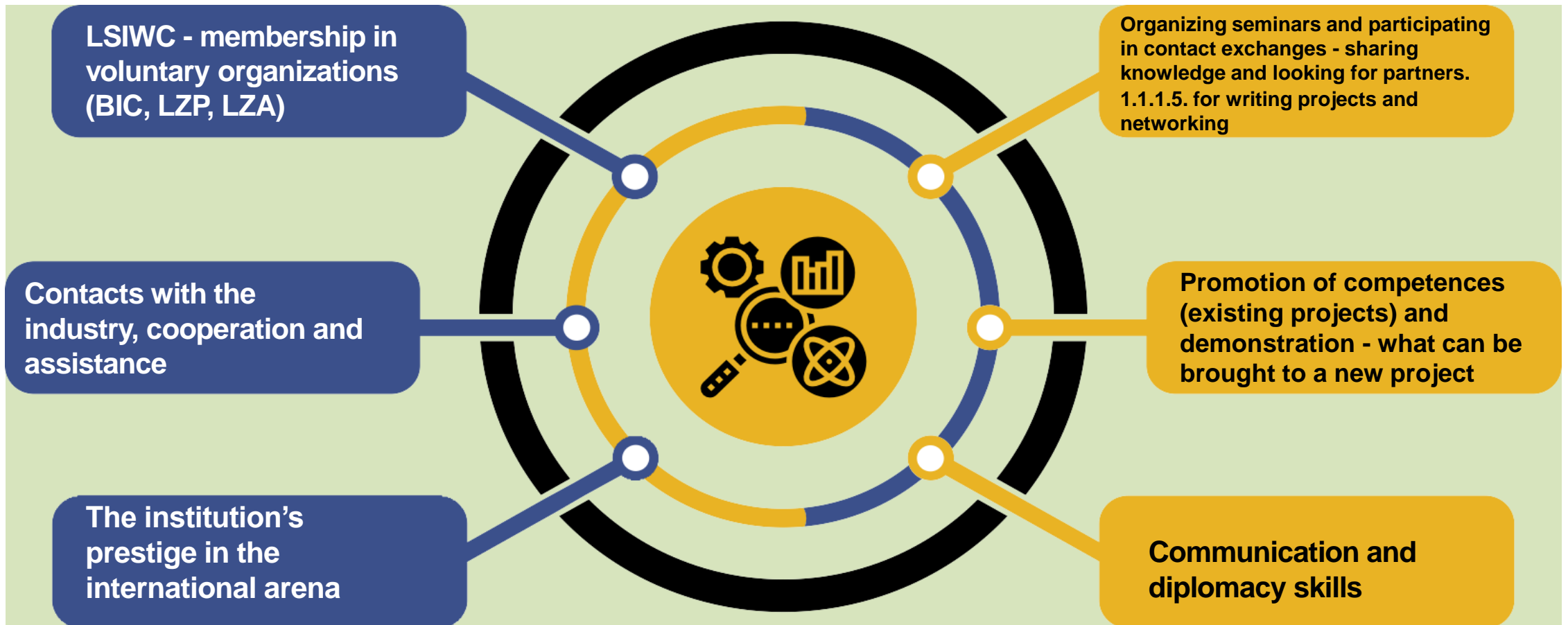
But it was enough to approve the project!



How we wrote?

- **Flagship project - coordination was undertaken by LF:**
 - ✓ Searched for and approved partners - existing cooperation partners;
 - ✓ Organized meetings to get on the same page;
 - ✓ Each partner prepared a presentation about himself and how he can contribute in the project.
- A project writer was engaged - Spinverse - selection criteria - obtained and realized projects.
- The project application was created by Spinverse, requesting the necessary information from each partner, and also helped with the search for partners
- The most responsibilities was on the coordinator, therefore LSIWC did not need additional help and new employees.





Recommendations

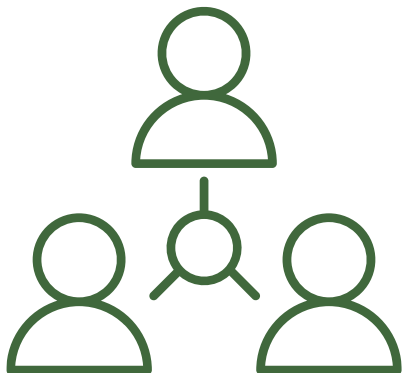
- More writing and participating - 1.1.1.5 support is very important;
- Searching for a suitable call;
- In the consortium collect representatives from the all value chains, from raw materials to final products. With similar TRLs.
- Start writing the project on time;
- Describe risks, costs and work packages in detail;
- Must promote your publications, projects and achievements - websites and social networks;
- Contacts with the industry should be established - you will be more interesting together with a representative of the industry;
- Must be visible - must participate in contact exchanges, seminars and conferences;
- Information about the organization/topic should be put in all possible databases.





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Thank you for your kind attention!



Acknowledgement

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