

# **The CO-IN<sup>©</sup> Model**

## **Strengthening collaboration, strategic partnerships and innovation eco-systems**

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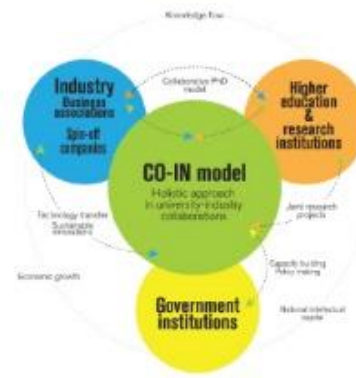
WHY

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# SETTING THE SCENE

<b>0,38%</b> GDP BUDGET ALLOCATIONS FOR SCIENCE in 2023	<b>27.3</b> INNOVATION INDEX (1 MIN – 100 MAX)	<b>82<sup>th</sup> place</b> FROM 141 COUNTRIES GLOBAL COMPETITIVENESS INDEX
<b>52.58</b> GLOBAL KNOWLEDGE INDEX (1 MIN – 100 MAX)	<b>0,1%</b> BUSINESS EXPENDITURE ON R&D	<b>48<sup>th</sup> place</b> GLOBAL KNOWLEDGE INDEX FROM 141 COUNTRIES
<b>21</b> NUMBER OF UNIVERSITIES	<b>84,2%</b> MICRO ENTERPRISES (1-9 EMPLOYEES)	<b>0,3%</b> LARGE ENTERPRISES



# MAIN ACTORS



## CIVIL ENGINEERING INSTITUTE MACEDONIA

- **50 years of experience**
- **North Macedonia, Western Balkans, Romania**
- Services in all areas of construction:  
planning, research, design, quality control,  
surveillance and construction.
- **320** talented and dedicated professionals
- **CEIM Strategies:** Development Strategy, HRM  
Strategy and KM Strategy



# INSTITUTE FOR RESEARCH IN ENVIRONMENT, CIVIL ENGINEERING AND ENERGY

- **Established in 2014.** Accredited by the Ministry of Education and Science
- **Interface** for academia and industry
- **3 pillars:** Research, Education and Consultancy
- Building **innovation eco system** through collaboration and strategic partnership
- IECE is author of the **CO-IN© Model**





# INSTITUTE FOR RESEARCH IN ENVIRONMENT, CIVIL ENGINEERING AND ENERGY

## MISSION

“To empower businesses and public institutions to achieve sustainable transformation by integrating research, policy insight, innovation methods, and future-skills development—creating measurable impact in circular economy, climate resilience, and economic modernization.”

## VISION

“To be a leading regional and international centre of excellence that accelerates the transition toward a circular, climate-resilient and sustainable society through research, innovation, and collaborative transformation using the CO-IN© model.”



# Two perspectives

## RESEARCHERS

- ✓ ROI of R&D&I
- ✓ Measuring intellectual capital
- ✓ Co-creation, transfer & exchange of knowledge in the quintuple helix

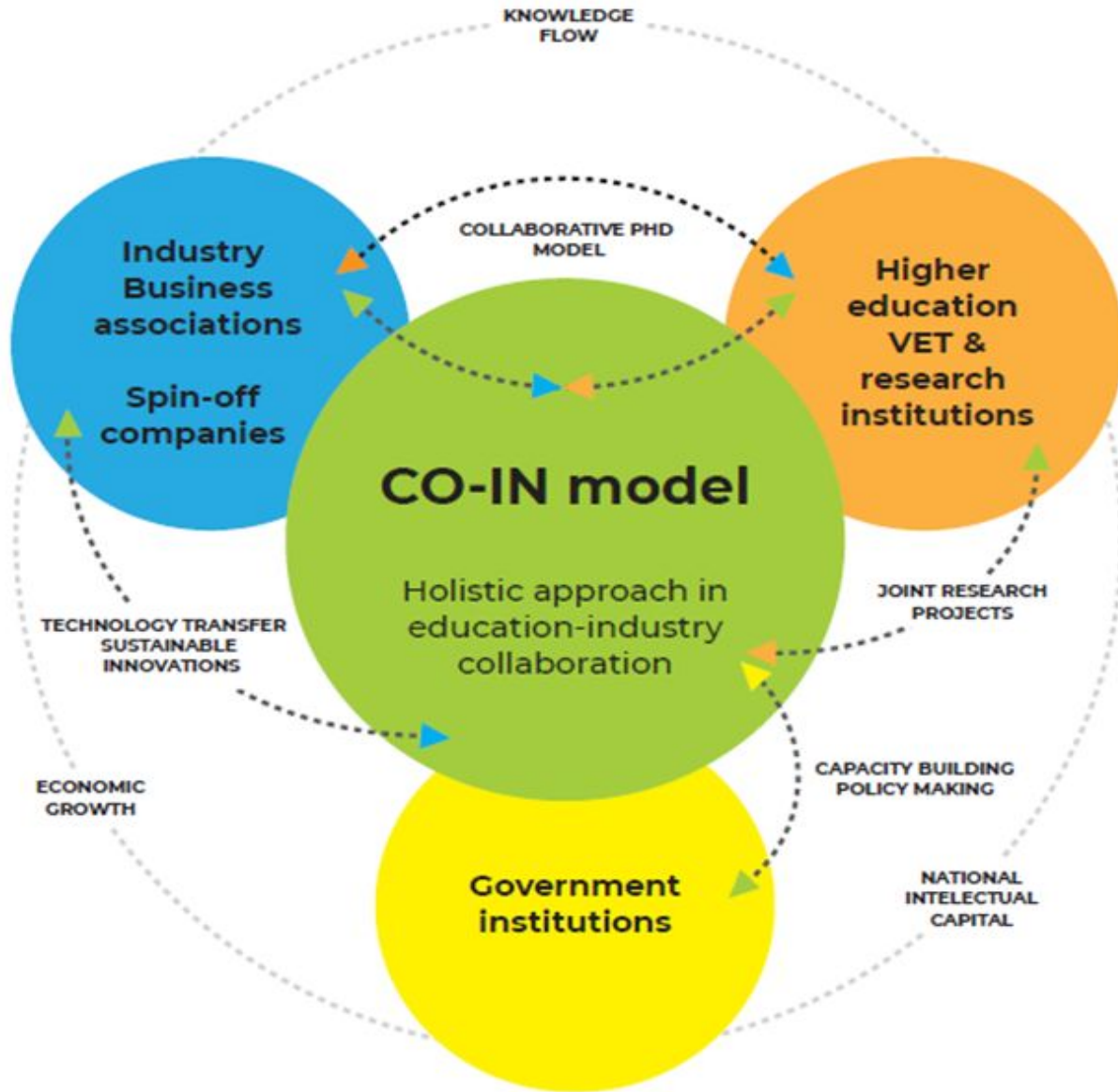


## PRACTITIONERS

- ✓ Useful knowledge
  - ✓ Managing intellectual capital
- ✓ Added value from knowledge (Industrial MSc and PhD)
- ✓ Transformation of universities and companies



**Change agents on micro and macro level**



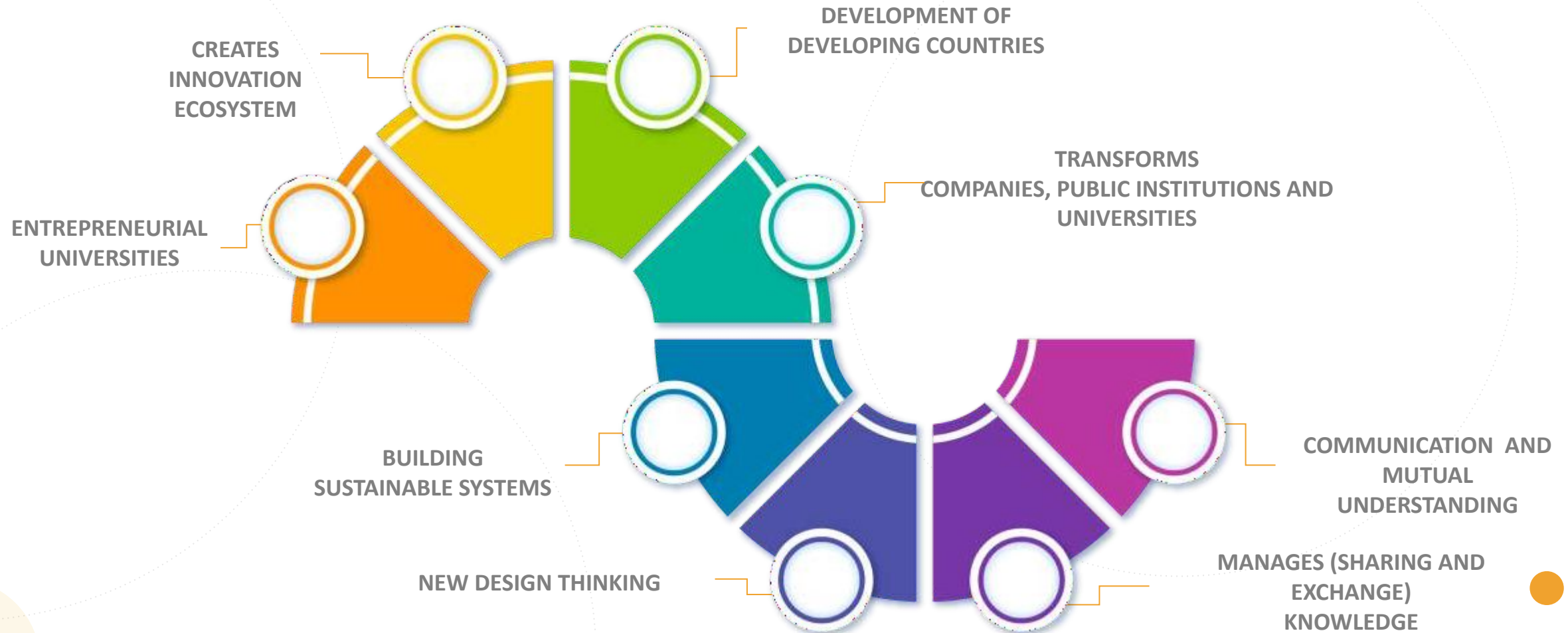
The aim of the CO-IN© Model is to build sustainable systems and business models, strengthening the eco-innovation system and supporting the establishment of learning organisations.

The effects and benefits of the CO-IN© model are:

- Building innovation ecosystem through collaboration and strategic partnerships.
- Added value from education and research by creating useful knowledge.
- Adopting a holistic approach to solving complex, open and connected problems, providing guidance via frame innovation methodology.



# Processes of the Collaborative Innovative Model



# Interdisciplinary and transdisciplinary approach

Three-lateral agreement between IECE, CEIM and Civil Engineering Faculty



Holistic approach via frame innovation methodology in solving complex, open and connected problems.

Education, research and capacity development programs are set around the following fields: **Environment, Civil engineering, Energy, Management, Economics, Social sciences and IT**. Through each of these fields, we address the major sustainable issues and challenges societies are facing today.

# Joint Applied Research Projects

The aim of this approach is to accelerate cooperative research, innovation, knowledge and technology transfer through enhancing strategic academia-industry alliances between business and academic organisations.

## Companies

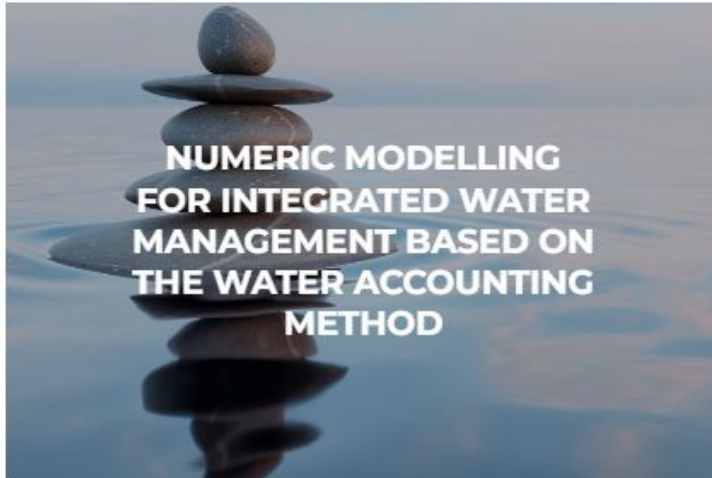
- Support to solve problems, address innovation challenges
- Commercialise concepts, develop new services or products
- Applicable and practical solutions relevant to everyday operations
- Access to research talent and potential future employees
- Curriculum co-design, co-development, and co-delivery
- Access to new technologies and new markets
- Possibilities for new funding
- Increased competitiveness

## Universities

- Access to subject matter experts, contemporary workplace and equipment
- Curriculum co-design, co-development, and co-delivery with industry experts
- Enriched programs and learning materials with relevant case studies
- Creation and sharing of new knowledge
- Commercialisation of innovation
- Local and regional development
- Availability of new funding



# Joint Applied Research Projects



**Project** Numeric modelling

Water accounting principle    Water balance

Water management



**Project** Circular economy    Civil engineering

Re-use    Sustainability



**Project** Construction skills    Digitalization

Indicators    Performance    Twin transition



# RECOGNITION AND AWARDS

Winning case:

**“Innovative Model for Development of Learning Organisations Through Knowledge Management and Intellectual Capital”.**



The CO-IN<sup>©</sup> Model has been validated by:

- **The European Commission in 2018**, by co-funding an Erasmus+ project: All4R&D, aiming to accelerate research, innovation, knowledge and technology transfer through enhancing strategic academia-industry alliances.
- **The European Commission in 2022**, by funding the multi-million project CATALYST. The core aspect of the project is applying the CO-IN<sup>©</sup> Model, which directly fosters knowledge triangles, and enables the collaboration between educational and business organisations.
- **Western Balkans Circular Economy Hub** – accelerating the CE through collaboration, capacity building and innovation.



# Promoting academia-industry alliances for R&D through collaborative and open innovation platform - All4R&D

The aim of the All4R&D project is to accelerate research, innovation, knowledge and technology transfer in Bosnia and Herzegovina and Armenia through enhancing strategic academia-industry alliances.

The specific project objectives are:

- To reinforce existing and to establish new university structures – **Cooperative R&D Units** together with industry; partners in the areas of knowledge creation and transfer, research and innovation, commercialisation of R&D results;
- To develop a **methodology for collaboration and open innovation** and establish web-based platform focusing on knowledge transfer, innovation and networking potential;
- To enhance career development and employability of students and alumni by offering new and innovative opportunities in research and education.

# Collaborative and Open Innovation All4R&D Platform



Erasmus + project – **Promoting academia-industry alliances for R&D through collaborative and open innovation platform - All4R&D**

- Setting up **4 Cooperative R&D Units** in B&H and Armenia
- **Digital platform** for education, knowledge exchange and networking
- **Achievements: 8 joint research projects; 50 courses for students and professionals and 35 innovative teaching practices**

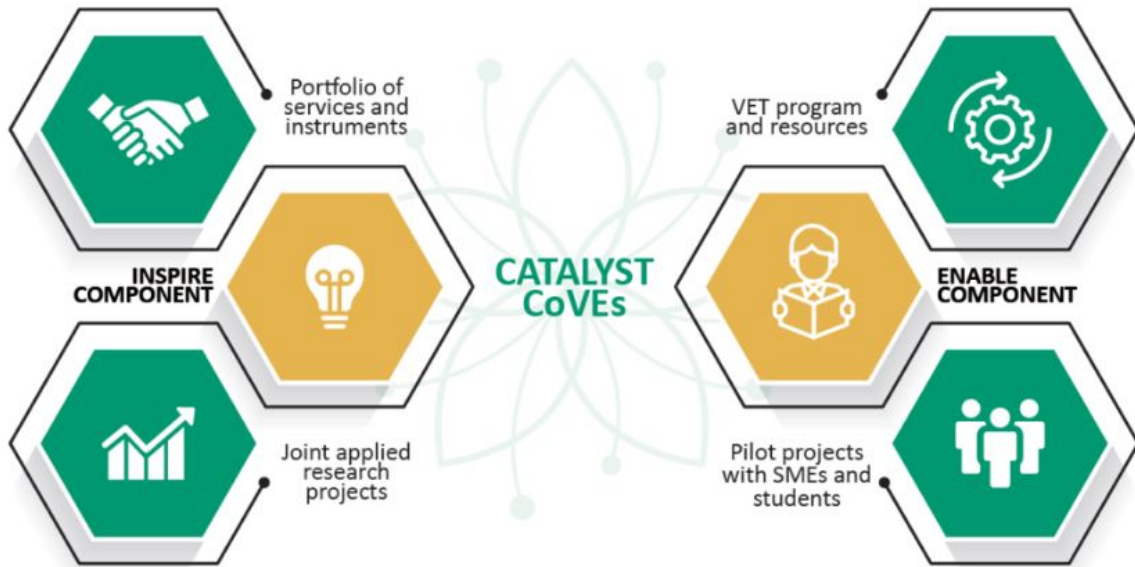
# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation



The vision of the CATALYST Centre is:  
to “Inspire and enable business sustainably”



# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation



The CATALYST Centre of Vocational Excellence (CoVE) for Leading Sustainable Systems and Business Transformation is dedicated to:

- providing support for professionals and students in personal and organisational development,
- encouraging organisations to embrace sustainability in their business models, and
- playing an advisory role in policy creation.

# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## CATALYST CoVE Values



# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## CATALYST Program



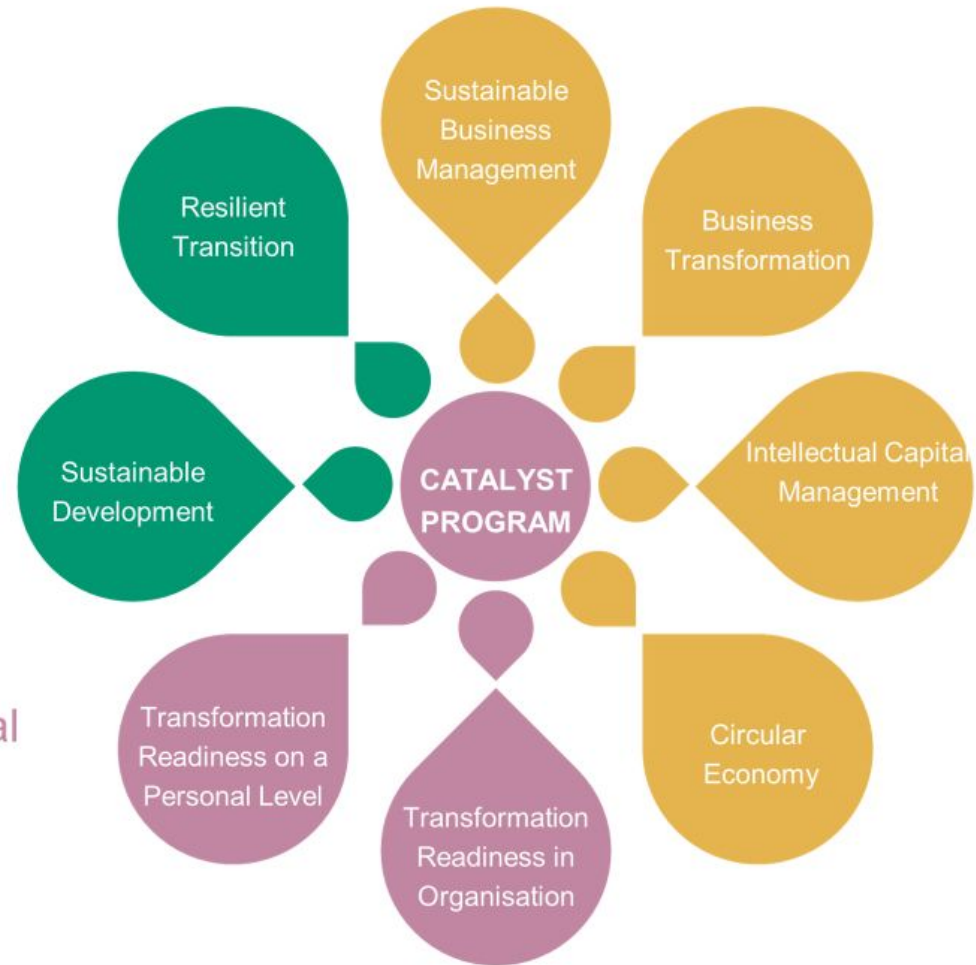
Leading Sustainable Systems - Systemic Level



Creating Sustainable Brands - Organisational Level



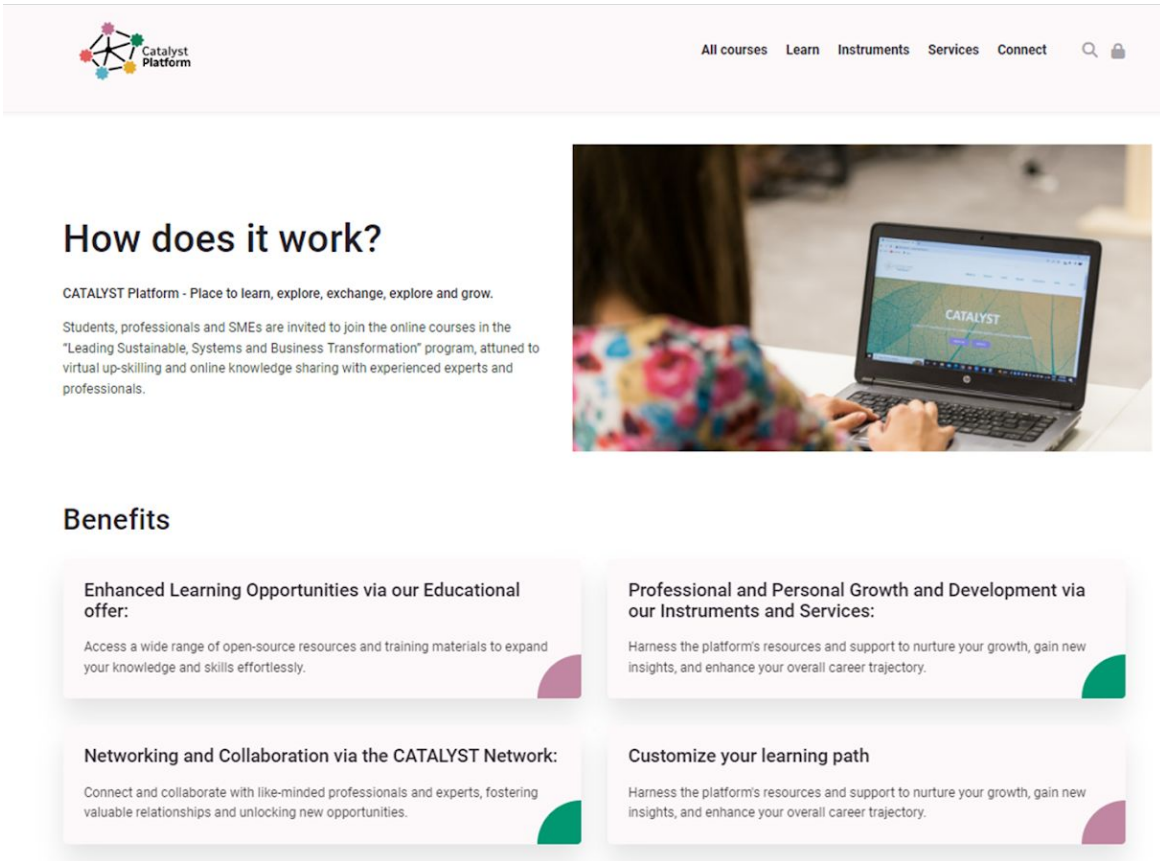
Embracing Sustainable Growth - Personal and Interpersonal Level





# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## CATALYST Platform



The screenshot shows the CATALYST Platform website. At the top left is the CATALYST Platform logo, which consists of a stylized network of colored dots connected by lines. To the right of the logo is a navigation bar with links: 'All courses', 'Learn', 'Instruments', 'Services', 'Connect', a search icon, and a lock icon. Below the navigation bar is a large image of a person's hands typing on a laptop, with the laptop screen displaying the CATALYST logo. To the left of this image is the text 'How does it work?' followed by a paragraph describing the platform as a place to learn, explore, exchange, and grow, and mentioning that students, professionals, and SMEs are invited to join online courses. Below this is a section titled 'Benefits' with four cards. Each card has a title and a brief description of a benefit.

**How does it work?**

CATALYST Platform - Place to learn, explore, exchange, explore and grow.

Students, professionals and SMEs are invited to join the online courses in the "Leading Sustainable, Systems and Business Transformation" program, attuned to virtual up-skilling and online knowledge sharing with experienced experts and professionals.

**Benefits**

- Enhanced Learning Opportunities via our Educational offer:**  
Access a wide range of open-source resources and training materials to expand your knowledge and skills effortlessly.
- Professional and Personal Growth and Development via our Instruments and Services:**  
Harness the platform's resources and support to nurture your growth, gain new insights, and enhance your overall career trajectory.
- Networking and Collaboration via the CATALYST Network:**  
Connect and collaborate with like-minded professionals and experts, fostering valuable relationships and unlocking new opportunities.
- Customize your learning path**  
Harness the platform's resources and support to nurture your growth, gain new insights, and enhance your overall career trajectory.

The CATALYST platform is an open-access platform developed as an engaging and dynamic learning environment that aptly addresses the evolving needs of learners.

It enables easy access to the CATALYST results:

- educational offer,
- portfolio of resources and services,
- CATALYST Magazine,
- access to the CATALYST Network and activities.

# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## Inspire Component

The aim is to implement the new skills in real-life scenarios, working closely in collaboration with SMEs by providing resources and consultation and engaging in applied research projects for SMEs, professionals, and students in using new and sustainable concepts in their organisations.

### Set of resources



# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## Applied Research Projects

An essential aspect of the “Inspire” component is co-creating new knowledge by applying the CO-IN© Model.

Applied research projects will be developed and implemented in collaboration between educational and business organisations.

Participants can be professionals, students, trainers, researchers, companies.

## Business Pilot Projects





# CATALYST - European VET Excellence Centre for Leading Sustainable Systems and Business Transformation

## CATALYST Network

CATALYST Network is a network of professionals and students where fresh ideas; new knowledge and best practices are exchanged to benefit all its members in the field of sustainability and management.

Join the CATALYST Network



# ENABLING CIRCULAR TRANSFORMATION WITH THE CO-IN© MODEL IN THE WESTERN BALKANS



**The Western Balkans Circular Economy Hub (WBCEH)** emerges as a catalyst, streamlining resources, building capacities, and connecting stakeholders to accelerate the transition, foster innovation, and unlock economic and environmental benefits for the region.



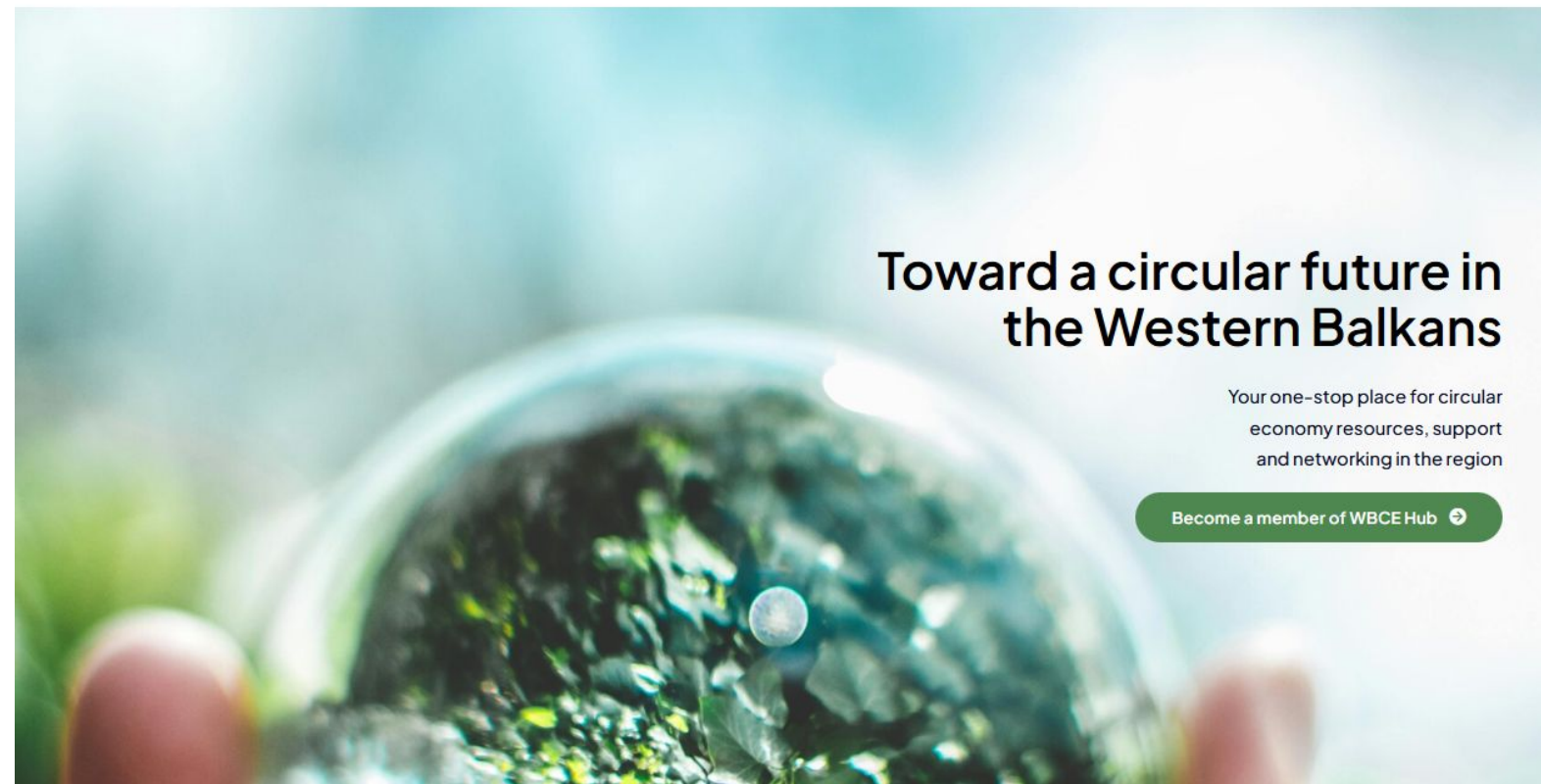
- Accelerating the transition in the Western Balkans by streamlining different types of information and resources in one stop place.
- Promoting circular economy growth in the region by enabling regional cooperation between different actors and stakeholders to provide and exchange knowledge, experience and best practices between them.
- Empowering individuals, businesses, and stakeholders with the necessary knowledge and skills to thrive within the circular economy framework.

# ENABLING CIRCULAR TRANSFORMATION WITH THE CO-IN© MODEL IN THE WESTERN BALKANS

The **Western Balkans Circular Economy Hub (WBCEH)** launched a platform offering companies and individuals to be members of the Hub, offering them training, networking, advisory services, and mentorship focused on circular economy topics.

Home WBCEHub ▾ Activities Resources ▾ Events News Courses

The established regional network withing the WBCE Hub connects stakeholders across the six Western Balkan countries, thereby consolidating efforts and facilitating knowledge exchange and innovation at a regional scale.



RESULTS – EFFECTS AND BENEFITS



# ENABLING CIRCULAR TRANSFORMATION WITH THE CO-IN© MODEL IN THE WESTERN BALKANS

To foster the co-creation of actionable and useful knowledge WBCEH invites organisations to join as **partners of the Hub and co-create** impactful activities, expand their network, and raise the visibility of their circular economy efforts.

As partners of the Hub, organisations can co-create joint events and activities, forge partnerships for long lasting projects, get access to a regional network of circular economy actors, including businesses, experts, and institutions.



## Become a Partner of WBCE Hub

Join us as a partner to co-create impactful activities, expand your network, and raise the visibility of your circular economy efforts as an organisation.

[Get in touch with us](#)

- ✓ Collaborate with the Hub and other organisations from the region to co-create joint events and activities, and forge partnerships for long-lasting projects
- ✓ Get access to a regional network of circular economy actors, including businesses, experts, and institutions, with the potential to exchange valuable contacts and expertise
- ✓ Amplify your outreach by leveraging the Hub's platform to disseminate your events, news, and circular economy initiatives to a wider audience across the Western Balkans
- ✓ Increase your visibility and recognition through featured promotion on the Hub's communication channels and dedicated Partner section on the upcoming digital platform

# EFFECTS AND BENEFITS

- Knowledge is co-created in joint research projects and transferred with Universities with applied research focus relevant to the business strategy of the company
- Knowledge is properly stored, visible, used, and has an added value
- Knowledge is shared with the training, mentorship and internship program
- Investments in IC positively influence the achievement of its business goals
- The productivity and the organisational performance is improved and sustainability-oriented

The advantages and benefits which emerged from the process of **KM and IC** have positive impact on all relevant stakeholders:

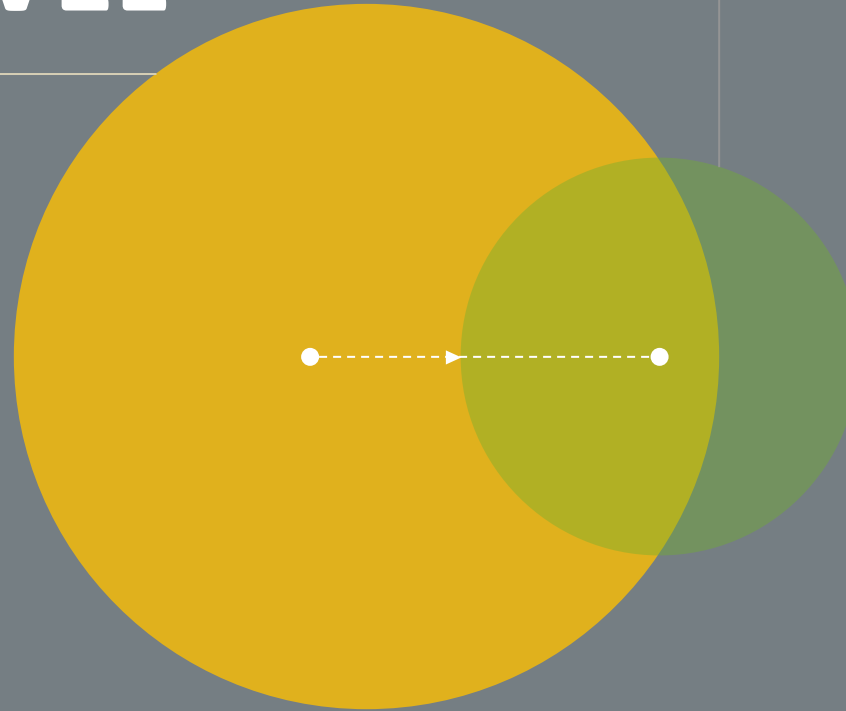
- meaningful jobs and career prospects for the **employees**
- navigating the company towards achieving its vision for the **managers**
- higher return on their investments for the **shareholders**



# IMPACT AND POTENTIAL

## MACRO LEVEL

- ECONOMIC GROWTH AND DEVELOPMENT
- QUINTUPLE HELIX
- CLOSING THE GAP BETWEEN THE DEMAND AND OFFER IN THE LABOUR MARKET
- KNOWLEDGE-BASED ECONOMY
- INTERSECTORAL COOPERATION
- NATIONAL STRATEGY FOR KM
- CIRCULAR ECONOMY



## MICRO LEVEL

- COOPERATIVE R&D CENTER
- MODEL OF LEARNING ORGANISATION
- ENTREPRENEURIAL UNIVERSITY
- INCLUDING IC IN THE BUSINESS PLAN AND CREATING INTEGRATED BUSINESS PLAN
- REPLICATE THE MODEL IN NEW COMPANIES
- INCREASE OF COMPETITIVENESS OF INVOLVED COMPANIES
- UPSKILLING EMPLOYEES
- TRANSFORMING RESOURCES INTO CAPITAL



# Exploring the possibilities to apply the CO-IN© model

The CO-IN © model has proven successful in many aspects:

- ❖ Powerful engine for innovation and economic growth in developing countries
- ❖ Strategic university-industry partnerships contributing to boost research, innovation, knowledge and technology transfer aligned with governmental policies and strategies
- ❖ Progress towards 4<sup>th</sup> generation Universities and learning organisations
- ❖ Significant impact on personal, organizational and societal level
- ❖ Contributing to added value and useful knowledge,
- ❖ Nurturing sustainable partnerships - “building bridges”



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CIVIL ENGINEERING AND ENERGY

**THANK YOU**  
**FOR YOUR ATTENTION**