

**Interreg  
Danube Region**



Co-funded by  
the European Union



**TEX-DAN**

# **TEX-DAN**

## **Study trip**

### **Slovakia**

**18th and 19th September 2024**  
**Zvolen, Slovakia**

# TEX- DAN 1st Study trip

*"The main purpose of TEX-DAN study trips is to present best practices from different regions on the application of new technologies and business models with a focus on the circular economy. Each participating country makes every effort to provide 10 best practices from their own country. In total, the partners of the TEX-DAN project will organize 4 study trips, each of which will be focused on one of 4 areas: bioeconomy clothing, design, production processes and recycling. Study trips to Slovakia, Serbia, Slovenia and Austria are planned. The participants of the study trips are project partners, interested ASPs and SMEs involved in the projects' pilots. In addition, the organizing partners mobilize the local stakeholders of the QUADRUPLE HELIX model – public administration and self-government, educational institutions, business entities and knowledge organizations of the third sector. For business entities, it is important that SMEs and social economy entities are involved in the study trips. If they are interested, they will also take them on other study trips to the countries of the project's partners."*

**The first study trip is dedicated to recycling  
and creation of new products from recycled textile waste.  
It is organized by  
National Recycling Agency of Slovakia.**

**[REGISTRATION LINK](#)**



## Meeting venue: Zvolen

First day venue is Banská Štiavnica and the lake Počúvadlo.  
Second day venue is at the Technical University in Zvolen.

## Practical information

Zvolen is approximately 2,5 hours of driving from Bratislava/Budapest Airport. There are bus connections that can be found at <https://www.flixbus.com/>, alternatively you can try to find connections at <https://cp.sk/vlakbusmhd/spojenie/> and we are ready to help you with choosing the right connection.

### Accommodation – list of different possibilities

#### Hotel Polana

Námestie SNP 64, 960 01 Zvolen <http://www.hotelpolana.sk/>

#### Hotel Franko Zvolen

Ľudovíta Štúra 11, 960 01 Zvolen <http://www.frankohotel.sk/>

#### Hotel Academic

P. O. Hviezdoslava 230/13, 960 01 Zvolen <http://www.hotel-academic.sk/>

#### Pension AIRA Zvolen

Trhová 1457/4, 960 01 Zvolen <http://www.aira.sk/index.php?id=1>

#### Pension ALMADA

Hronská 705, 960 01 Zvolen-Pod Harajchom <https://www.almada.sk/>

All suggested hotels are within walking distance to the meeting point for bus transportation for day 1 venue and meeting point in Zvolen for day 2. Meeting point for bus transportation will be provided at a later stage.

## Contact persons for the meeting

Host contact persons regarding arrival, registration and practical matters:  
Tatiana Sanisló , [networknarask@gmail.com](mailto:networknarask@gmail.com), +421915271700, +421904161929  
Radovan Grollmus, [reusenarask@gmail.com](mailto:reusenarask@gmail.com), +421918132402



Contact to the coordinator regarding the agenda of the meeting and the content of the meeting:  
Zoltán Bendó, [bendozoltan@ddriu.hu](mailto:bendozoltan@ddriu.hu), +36-30-4360431

2024-07-23

changes in the program may occur

# Program

Day 0 Tuesday 17th September 2024	
19:00	Informal optional dinner in central Zvolen, costs covered by partners
Day 1 Wednesday 18th September 2024	
08:30	Meeting point near TUZVO
09:00 - 12:00	Bus transfer to Banska Stiavnica, visit to SVETRO facility
12:00 - 14:00	Transfer to lunch and project meeting venue Pocuvadlo lake, networking lunch
14:00 - 17:30	Project progress meeting for project partners <span style="float: right;">also ONLINE</span>
14:00 - 17:30	Networking agenda for stakeholders, stakeholders invited by NARA-SK: <i>Slovak Association of Textile Manufacturers, Distributors, Processors and cooperating partners (SATEX) - SK</i> <i>Slovak association for reuse and recycling of clothes and textiles (SZOPROT) - SK</i> <i>Association of textile-clothing-leather industry (ATOK) - CZ</i> <i>Center for investment, development and innovation (CIRI) - CZ</i> <i>Institute for Ecology, Technology and Innovation (OETI) - AT</i>
17:30 – 20:00	Study and cultural program in Banska Stiavnica: Textile exhibition and city tour
20:00	Dinner in Banska Stiavnica old town
22:00	Bus transfer to Zvolen
Day 2 Thursday 19th September 2024	
8:30	Meeting at TUZVO University in Zvolen
9:00 - 11:00	Presentation of research and its role in the circular economy, invited researchers: <i>Doc. RNDr. Danihelová, PhD.</i> <i>acoustic properties and fire resistance of recycled textile products</i>  <i>Prof. Ing. Marek Potkány, Phd.</i> <i>LCC - life cycle costs of new products</i>  <i>Prof. Ing. Jozef Krilek , PhD.</i> <i>UNIVNET national platform for recycling technologies in the automotive industry</i>  <i>Dr. Ing . Jaroslav Šálka - prorektor TUZVO</i> <i>international cooperation in the field of education and applied research</i>
11:00 - 11:30	Coffee break & networking
11:30 - 13:30	Representatives of Slovak circular textiles, solutions, presentations and connections of SMEs <i>LUNA World, small textile production from leather and recycled textiles</i>  <i>WAKI VAKI - successful student startup, second life for textile waste</i>  <i>SK-TEX - textile recycling and production for construction and green infrastructure</i>  <i>CHEMOSVIT FIBROCHEM - PROLEN® polypropylene multifilament yarn</i>  <i>HEMP CLUSTER - natural fiber from hemp</i>
11:00 - 15:00	His Excellency the Ambassador of the Serbian Embassy in the Slovak Republic Aleksandar Nakić
14.00 – 15.00	Networking lunch and goodbye
	Technical university in Zvolen - TUZVO University is right next to the bus and train station.

# Partners for international networking invited by NARA-SK

## SATEX



The Slovak Association of Textile Manufacturers, Distributors, Processors and Cooperating Partners, Interest Association of Legal Entities (SATEX) - SK was founded on the initiative of EKOCHARITA, the largest textile collector in Slovakia. The association uses its complete management with textile waste. It thus offers its solutions not only for textile manufacturers associated with SATEX associations, but also for cities and towns. SATEX brings circular solutions to the separate collection of textiles in Slovakia.

## SZOPROT



### **Slovak Association for the Reuse and Recycling of Clothing and Textiles (SZOPROT) -SK**

The aim of the association's activities is to protect the interests of members in the performance of their business activities in the field of trade in used clothing and textile materials, to coordinate mutual activities in this area, to cooperate with the members of the association in solving any related problems and to contribute to the fulfilment of this goal with their activities, namely especially activities:

- Protection of common industry interests and rights of association members from state authorities and institutions, as well as from any other similar authorities or organizations in the country and abroad;
- Providing assistance to members of the association in clarifying any new legal requirements resulting from legislation and regulations related to the subject of business activity of members of the association;
- Protecting the interests of association members in connection with the development of trade in used clothing and textile materials and increasing public confidence in this area; support of its members and the entire industry in market economy conditions;
- Coordinating relations and balancing interests in the business chain with used clothing and textile materials between suppliers (importers), network of stores, e-shops and consumers;
- Creating professional standards of ethics and increasing industry safety among association members;
- Increasing the economic efficiency of the activities of its members;
- Observance of professional ethics and establishment of loyal business relations under conditions of free and transparent competition;
- Cooperation with state administration bodies in the creation of rules and regulations regarding the trade in used clothing and textile materials, as well as in the supervision of their implementation;
- Guarantee of consumer rights;
- Developing relations with international and other national organizations operating in the field of trade in used clothing and textile materials.

## ATOK



### **The Textile-Clothing-Leather Industry Association (ATOK) - CZ**

is an organization of employers active in the field of textile, clothing and leather production and in other related activities in the territory of the Slovak Republic, which was founded in May 1990. Its members are mainly manufacturers, but also research institutes, schools and business organizations. ATOK is a member of the Confederation of Employers' and Business Unions of the Slovak Republic ([KZPS SR](#)) and participates in the negotiations of the Economic and Social Agreement Council ([RHSD – tripartita](#)). It represents and defends the interests of the Czech textile, clothing and leather industry and establishes and develops bilateral relations with partners at home and abroad.

It strives for social harmony in the industry and concludes a collective agreement of a higher level, advocates for a closer connection of education with the production needs of companies. For these purposes, the ATOK Commission for human resources, labour law and social issues, collective bargaining and vocational education has been established.

It strengthens the perception of the industry as a promising field both here and abroad. It makes it easier for its members to navigate business activities, and if necessary, also provides protection, help and advice in technical, organizational, social and legal issues. It publishes the professional magazine e-ATOK Revue and other industry publications.

At the European level, it is a member of the European Clothing and Textile Confederation ([EURATEX](#)), in which he actively participates in setting the conditions for sustainable textile and clothing production. For this purpose, the ATOK Platform for Circular Economy operates.

It deals with the presentation of Czech manufacturers on foreign markets. It mediates contacts in foreign trade, provides information on global innovations, was and is involved in many international projects within the EU.

## CIRI



**The Center for Investments, Development and Innovation (CIRI) – CZ** - is a regional investment and development agency of the Královohradecký Region. "We support the healthy and sustainable development of the region and are a helping hand to regional actors in fulfilling their goals. We want to build on our long-standing cooperation in the field of innovation and business development. We will continue to support technological innovations, participate in the implementation of innovative research, share know-how and initiate the development of educational activities in the field of advanced textile-based materials," said the director of CIRI.

OETI



### **Institute for Ecology, Technology and Innovation (OETI) - AT**

OETI is an independent provider of testing and certification services with worldwide operations. We have decades of experience and our experts offer comprehensive services and safety in the field of OEKO-TEX® certificates and OEKO-TEX® marks, textiles, leather and due care within the textile and leather value chain, as well as in the field of personal protective equipment (PPE), floor technologies, interior materials and indoor air quality.

"We are a founding member of the "International Association for Research and Testing in the Field of Textile and Leather Ecology OEKO-TEX®" - OEKO-TEX® for short. Together with our parent company TESTEX, we are the official representatives of OEKO-TEX® in many countries around the world."

OETI is an accredited and notified testing and certification body. In addition, OETI is a recognized testing institute for various other fields and is a member of various organizations. You can find an overview of accreditations and notifications, areas for which OETI is an examination institute [here](#).

## **Presentation of research and its role in the circular economy**



### **Doc. RNDr. Danihelová, PhD.**



- **Acoustic properties and fire resistance of recycled textile products**

Research: The treatment of selected materials from recycled technical textiles with fire retardants deals with the fire-technical and acoustic properties of insulation panels from recycled technical textiles and the possibility of their fire protection treatment. The composition of these panels consists mainly of polymer materials, which to some extent determines its other properties, which must meet the criteria for use in building structures. The panels were subjected to a test of the flammability of construction products, a test of exposure to a radiant heat source, a test to determine the heat of combustion, and the coefficient of sound absorption in the impedance tube was determined. The results of the tests evaluating the fire-technical properties of the investigated material indicate that after the treatment of the insulating panels with selected flame retardants, their resistance to flame increased, they resisted high temperatures longer and there was only a minimal change in the sound absorption of the material.

Buildings play a very important role in energy consumption and air emissions. Therefore, one of the most important challenges in the construction of new and renovations of older buildings is the reduction of energy consumption and its consumption used for their heating or cooling. The research task presents

the fire-technical and acoustic properties of insulating panels made of recycled Senizol AT XX2 TL60 technical fabric treated with two liquid retarders (Isonem Antifire solution and HR Prof), as well as carbon fabric that was mechanically attached to the insulation surface of the panels. The flammability of construction products exposed to direct flame and calorific value were studied.

The results of the measurements confirmed the inclusion in class E reaction to fire. After the fire protection of insulation panels with retarders and carbon, it can be assigned to a lower class of reaction to fire, but it must be confirmed by performing the Single Burning Item (SBI) test. Fire treatment with liquid retardants was also shown to be effective in the radiant heat test as it prevented complete thermal degradation of the samples. The results of the sound absorption measurements show that the treatment with liquid retarder is more advantageous than the treatment with carbon fibers, as the difference from the original sound absorption of the panels was minimal.

## Prof. Marek Potkány, PhD.



- **LCC – life cycle costs of new products**

From the point of view of environmental protection, it is important to use the principles of circular economy (CE). These principles are based on the assumption that components of end-of-life products are reused in new products. The goal of the project is to demonstrate and apply the potential of CE in the Slovak business environment for the production of innovative products using recycled materials based on wood - rubber - plastic - textile combinations as raw materials. Innovative products based on wood-plastic composites, or wood-rubber, wood-textile will be examined in the project from the point of view of selected economic-environmental aspects. Specifically, they will be the preparation of business plan concepts with an assessment of economic efficiency, but also from the point of view of preparing modifications of conversion calculations and alternatives for the final version of products in comparison of calculations of the impact on the environment or the context of their market allocation.

## Prof. Ing. Jozef Krilek, PhD.



- **UNIVNET - national platform for recycling technologies in the automotive industry**

The UNIVNET association, coordinated by the Slovak University of Technology in Bratislava and bringing together a critical mass of research, development and application potential of the Slovak Republic, focuses on the issue of new technologies and techniques of effective waste recovery, especially in the automotive industry, with the aim of minimizing negative impacts on the environment and saving primary energy and raw materials resources and which was recognized by the Ministry of Education, Science, Research and Sport of the Slovak Republic, the Ministry of Economy of the Slovak Republic and the



Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization as a national platform for the field of recycling and recovery of waste with their application outputs in the industry.

UNIVNET is a continuation of the research integrated platform initiative from 2016-2017. The need for such a platform arose in accordance with the EC's intentions to review the objectives in the field of recycling and other wastes set out in the key directives governing waste management. The creation of the platform reflected the EU's intention to move towards a circular economy and through the "Zero Waste Program for Europe" to promote recycling, reduce the consumption of primary raw materials, ensure access to important raw materials through the recovery of waste, and thus create space for sustainable economic growth.

## Prof. Dr. Ing. Jaroslav Šálka,



### • International cooperation in the field of education and applied research

The continuity of scientific and educational work is a guarantee that universities will prepare experts capable of using scientific knowledge in their work, participating in the creation of new knowledge and implementing challenging tasks in specific social conditions. Universities are the place where scientific talents mainly appear, workers are trained for scientific work for the needs of their own institutes or for other scientific and professional facilities, and this is how the scientific and research base of society is renewed.

The strategic goal of TUZVO is the direction to achieve an ambitious vision by 2030 - to be an internationally recognized, research-oriented university, to be among the Slovak leaders in its scientific research focus, to provide modern education as a systematic transfer of knowledge and to fulfill the concept of a "green university" by strictly observing the principles of sustainable living .

TUZVO, like most universities in Slovakia, also provides education to foreign students who are enrolled as regular students in accredited study programs.

## Representatives of Slovak circular textiles, solutions, presentation and connections of SMEs

### Luna WORD – Barbora Holienková



*"Hello, my name is Barbora and I have been creating since childhood. I was most interested in knitting. I also create jewelry. I like natural and slightly extravagant style. My daughter Luna is my inspiration. Feel*

*free to take a look at my shop."* Barbora Holienková

The project **What a mother can do** was created in June 2015. With the initiative What a mother can do, we also try to contribute to solving the issue of unemployment or the more difficult entry of mothers into employment after the end of maternity/parental leave. Mothers who would have been forced to remain registered at the Labor Office due to a lack of job opportunities or the unwillingness of their current employers, are now establishing their own workshops, where they employ their first employees. Through our activities and competitions, we do extensive marketing as a result of the creative activity of moms from all over Slovakia, which helps them in finding new customers and in the development of their start-up business. <https://www.codokazemama.sk/obchod/luna-world>

Crocheted and leather handmade barefoot shoes, bags and other unique things in a natural style.

## WAKI VAKY – Radovan Lucina



Rado is a person who tries to move things forward. He has a head for numbers and sees the future. At WAKIVAKY, he manages project strategy, controls financial processes and communicates with investors. He is known for the fact that little surprises him and he almost always keeps a cool head, with which he also approaches solving problems. He likes to travel and learn new things, but he also enjoys sitting and barbecuing with friends and family.

*"It was originally a school project for the subject "Development of entrepreneurial skills in intergenerational teams" at FMUK in 2014. A team of 6 people came up with the concept of making backpacks from recycled materials. From this idea, Dominika Bukatovičová gradually created the basis for STARTUP. During the first years, they were looking for ways to introduce this idea to the commercial world. The steps were gradual and the start-up was limited by finances, which were never enough. Gradually, the first products were launched on the market, and the startup began to fulfill its mission in the field of recycling and upcycling."*

Today we are a manufacturing company with an environmental and social dimension. We produce original leather and textile products for personal use or for companies. All product designs were developed at WAKIVAKY and passed multiple tests. In our company, we care that our activities make sense and bring benefit. By popularizing topics about upcycling and recycling, we want to point out the positive effects and synergies that arise in society. <https://www.wakivaky.eu>

We design, develop and then test the products ourselves. The origin of the materials is mainly from the automotive industry or from other production sectors. This is mainly unconsumed and subsequently discarded material, in which we discovered the potential for its further use. We upcycle this material and use it to make our entire production under the WAKIVAKY\* brand.

## SK-TEX – Miroslav Futrikanič



*"Extended producer responsibility should not end with collection and sorting in the case of textiles. The key will be to support the consumption of products made from recycled materials. Today, thanks to technology, it is possible to process any textile. The only important thing is whether we are interested in it."* Miroslav Futrikanič

The company SK-Tex has been dealing with textile recycling for 23 years. Currently, it recycles approximately 3,500 tons of textile waste annually. The recovery of recycled textiles creates new products for the house, apartment, garden, and transport infrastructure. Due to their specific properties, they are used in the field of water retention, thermal, technical and acoustic insulation with a longer service life compared to the ones used so far. It sends new products from its products to several European countries, including Germany, France and Poland. SK-TEX supplies fibres with special treatments for the automotive and furniture industries, we produce insulation for buildings and vehicles from recycled textile fibres.

<https://sk-tex.com/>

**Textile recycling and the creation of new products is our mission and passion. We hear about responsibility, sustainable management, product recycling from all sides. Mostly, however, only plastics or paper are talked about, and textiles remain in the background. However, there is more and more textile waste and it overwhelms our planet just like any other waste. Therefore, we consider it our task not only to process textiles, but also to create new products and educate society in this direction.**

## Hemp Cluster – Dušan Knežovič



*"Slovakia and the entire area of the Pannonian Plain, basically the region from Southern Poland to Serbia, was once full of hemp. I claim that hemp is the greatest gift, because it has incredible possibilities of utilization. From food, cosmetics, medical preparations, to textiles and building materials - this is already known, but today there is also a huge sector of biocomposites, as substitutes for petroleum plastics. That is one big challenge."* Dušan Knežovič

The Hemp Cluster continues the Slovak tradition of growing and processing hemp in a modern way. We focus on research and development of new hemp products or we innovate already known ones. We are a partner for farmers, industry and technology-oriented companies, and together we are looking for ways to sustainably develop hemp production that brings value to people. We do so cooperatively, circularly and regionally. <https://hempcluster.eu/>

Hemp Cluster, as an association of legal entities, represents a platform for applied research. In addition to Hemp cooperatives, an organization for the shared economy, the cluster includes a recycling company, as well as a construction company and a private research institute, plus several specialized partner entities. As part of the tasks of the cluster, we mainly focus on the technical use of hemp. We are currently finalizing the development and production of a mobile version of the breaker so that the hemp straw does not follow the machine, but the machine follows the straw, and we are simultaneously working on new construction materials made of hemp. These are mainly boards or panels made of hemp stalks and recycled or compostable materials. Our goal is a sustainable hemp-based industry in conjunction with regional development.

## CHEMOSVIT FIBROCHEM – Alena Balogová

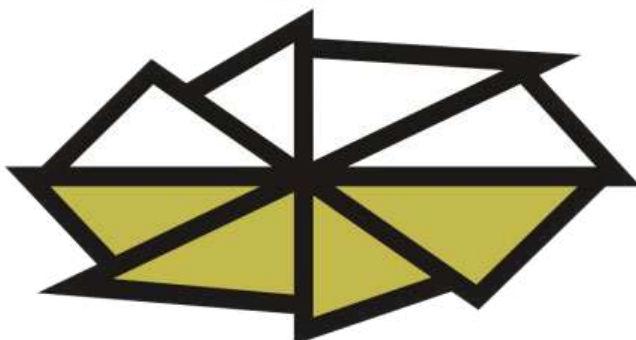


*"Our vision: to continue to be the world leader in the field of special polypropylene fibers. Our mission: Satisfying customer needs with high-performance special types of Prolen® fiber by improving customer health and protecting the environment." Alena Balogová*

CHEMOSVIT FIBROCHEM s.r.o. is part of the strong holding company CHEMOSVIT a.s. where polypropylene products for various applications represent the main activity. The headquarters of the company is in the town of SVIT under the High Tatras in the Slovak Republic. Svit was founded in 1934 by the company Baťa, and the beginning of traditional fiber production in this town dates back to those times. CHEMOSVIT FIBROCHEM is one of those that survived the changes in 1989. In the mid-1990s, it developed its own polypropylene microfibers, which are used today by world sports brands in their products. <https://www.fibrochem.sk/>

First viscose and later polyamide fibers were replaced in 1974 by polypropylene fine yarns under the name PROLEN®. During its more than forty-year history, PROLEN® has become a globally recognized brand. Own technological and production know-how and advanced management procedures are a guarantee of long-term stability for every customer. CHEMOSVIT FIBROCHEM is today the strongest and most experienced producer of multifilament polypropylene fine denier yarns in Europe. Currently, CHEMOSVIT FIBROCHEM also supplies fibers for world-famous sports brands such as Nike, North Face and Helly Hansen.

## Thanks for co-organizing Study trip Slovakia



TECHNICAL UNIVERSITY IN ZVOLEN



# Moving forward with circularity in textile and fashion value chains

## TEX-DAN

### The Danube Region

The area covered by the EU Strategy for the Danube Region stretches from the Black Forest (Germany) to the Black Sea (Romania-Ukraine-Moldova) and is home to 115 million inhabitants.



The geographical coverage is wide, including 11 countries from the Danube region and one international association.



TEX-DAN demonstrates a comprehensive partnership with 14 project partners and 7 strategically affiliated partners.

## Partners:

- STRIA - [South Transdanubian Regional Innovation Agency](#) (HU) as the lead partner
- JAIP – [South Bohemian Agency for Support to Innovation](#) (CZ)
- NARA-SK - [National recycling agency of Slovakia](#) (SK)
- CECC - [Center of Excellence for Circular Economy and Climate Change](#) (RS)
- REGINNOVA - [Reginnova NE Association](#) (RO)
- RARS - [Development Agency of the Republic of Srpska](#) (BA)
- HAMAG BICRO - [Croatian Agency for SME, Innovation and Investments](#) (HR)
- RAPIV - [Regional Agency for Entrepreneurship and Innovations – Varna](#) (BG)
- FHS - [University of Applied Sciences](#) (AT)
- BSC, [Business support centre Kranj](#) (SI)
- IFKA - [IFKA Public Benefit Nonprofit](#) (HU)
- ISD - [Institute for Sustainable Development](#) (SI)
- ZIPHOUSE - [Technical University of Moldova](#) (MO)
- BLUE PLANET - [Blue Planet Climate Protection Foundation](#) (HU)

## Associated partners:

- HUP - [Hrvatska udruga poslodavaca](#) (HR)
- TTF - [Sveučilište u Zagrebu Tekstilno- tehnološki fakultet](#) (HR)
- PLUS - [Paris Lodron Universität Salzburg](#) (AT)
- ADR - [Agentia pentru Dezvoltare Regionala Nord-Est](#) (RO)
- TCBL - [Asociácia TCBL](#) (RO)
- REPRIK - [Regionálny priemyselný inovačný klaster Rimavská kotlina REPRIK](#) (SK)
- MPP RS - [Ministarstvo privrede I preduzetništva Republike Srpske](#) (SRB)

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA

Váš partner pre  
**Obehové hospodárstvo**

**AGENDA 2030**

Effects of investments in education for sustainability.

**Quadruple Helix Innovation**  
Government, Academia, Industry and Citizens collaborating together to drive structural changes far beyond the scope of any one organization could achieve on its own.

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA

Association since 2016

Members and Partners: 53

Experts: 10

Internal employees: 5

Volunteers: 2

Cooperating organizations SVK: 200+

Cooperating organizations in the EU: 45 from 24 EU countries

Cooperating organizations outside the EU: 2 (Turkey, Ukraine)

**tExtended**

European Commission | **HORIZON EUROPE 2021-2027**

**Expected Impact**

- Scientific**  
Production of new fundamental and applied knowledge for industries and scientific communities, produced on circular economy of textiles.
- Societal**  
Prevention of waste, sustainable consumption models via re-use, creation of jobs.
- Economic/Technological**  
Accelerate the twin green and digital transition in European textile industry by generating new business, strengthening competitiveness and resilience through sustainability, and digitalization.
- Environmental**  
More sustainable textile industry, less emissions, potential to reduce textile waste by 80 %.

Coordinator: VTT Technical Research Center of Finland Ltd.

Total budget: €15.3 million

Number of partners/countries: 20/10

Duration: 4 years, beginning on December 1, 2022

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA

**Interreg Danube Region** Co-funded by the European Union

**TEX-DAN**

The goal of transnational cooperation in the Danube macro-region is to create real circular economy solutions for producers to preserve value in the textile industry.

The four main areas of TEX-DAN:

- Bioeconomic clothing
- Textile design in the circular economy
- Circular economy in production processes
- Recycling

- Building synergies in legislative frameworks
- Supporting regional and national initiatives for the value chain of new products through EPR
- Setting up eco-modulation of products and green production technologies in the textile and fashion industry chain

Waste Framework Directive - Paving the way for a circular Textiles Industry

STUDIA NA POSUDENIE ZAVEDENIA SYSTÉMU PRE NAKLADANIE S ODPADOM Z TEXTILU, VRÁTANE POSUDENIA ZAVEDENIA ROZŠÍRENEJ ZODPOVEDNOSTI VYROBCOV (RZV) PRE TEXTIL A ZBER DÁT O OPÄTOVNOU POUŽITÍ TEXTILU

THE CHAIN OF SORTING AND EXPLOITATION OF TEXTILE WASTE

Coordinator: South Transdanubian Regional Innovation Agency

Number of partners/countries: 21(14+7)/11

Total budget: 2.7 ME

Duration: 30 months, beginning 1/1/2024

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA

**Circular City through circular economy educational methods for social enterprises**

The future of jobs is green: How climate change is changing labour markets

Greening with Jobs - World Employment and Social Outlook

**WELCOME TO THE CIRCULAR JOBS MONITOR!**

European Skills Agenda is a five-year plan to help individuals and create decent work and better skills and to put them to use, by strengthening sustainable competitiveness, as set out in the Council Directive

Putting people at the heart of the circular economy

DECENT WORK IN THE CIRCULAR ECONOMY

The goal is the systemic solution of the circular economy through the entities of the social economy to create new products - when waste is a source of new raw material.

- Vademecum for low-threshold employability in the circular economy
- Training format for adult educators with methodology and activities for target groups
- Platform for sharing ideas, coordination, creation of networks with interconnections at the European level
- Conferences of project partners for networking pioneering activities and BATs in national landscapes

Coordinator: National Recycling Agency Slovakia NARA-SK

Number of partners/countries: 6/6

Total budget: €250,000

Duration: 24 months, beginning on August 1, 2023

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA

**A collaborative platform for sustainable production value chains of the QUINTUPLE HELIX model**

Turku University of Applied Sciences  
Univerzita aplikovaných vied v Turku

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKA  
naraslovensko@gmail.com

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKO

**EPR (extended producer responsibility)** is the main tool of the EU countries for sustainable production and controlled collection, sorting and recovery of textile waste.

**ESPR (ecodesign for sustainable product regulation)** by the manufacturer through **ecomodulation** based on the life cycle analysis (LCA), it sets the life cycle costs (LCC) of products, products in the circular economy system.

The economy of change and innovation of product creation processes are based on knowledge

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
Circular economy in general in textile industry	Collection and sorting	Reuse, remanufacture	Recycling technologies	Digitalization
Training materials	Training materials	Training materials	Training materials	Training materials

Open access: Training courses for company x, z, y

Non open access: Tailored training course for company x, Training course for company z, Training for z

Trainings to be organized by exploring training materials and expertise: Training course for company x, Training course for company y

**Waste hierarchy & ecomodulation of EPR fees**

Prevention  
Preparing for re-use  
Recycling  
Recovery  
Disposal

Current limited focus of EPR and ecomodulation  
Desired change of EPR fees

Lower fees  
Higher fees

**Life Cycle Costing - LCC**

Figure of LCC phases and cost appointment

Grade of cost appointment  
Grade of ability to influence cost development  
Incurred cost

Initial and acquisition cost  
Follow-up cost

Phase + Research + design  
Production  
Transportation, labor and deployment  
Operation  
Economic working

**SCALE.UP**  
Platforms for sharing international cooperation using digital modeling of mutual relations.

**K-IVS**  
Co je Katalog Inovatívnych verejných služieb?  
Vznikol v projekte se Slovenským veľvyslanectvom v Praze, Dagmar Urbanová  
Koordinauje CZECH.UP, jako otevřenou veřejně dostupnou službu  
Aby mohlo vzdělávání pracovat ve stejném prostředí, jako je v praxi

**CONNECT.UP**  
Rozšírenie projektov a tímy  
Komunity a síťové  
Certifikace

**JUKE.BOX**  
Cyberbox, Textilbox, Karelbox, Fila, Box  
Spoločná tvorba kariéry

**K\_ZO**  
Marketingové a softvérové služby  
Cez  
Fila, Box

**MARKET.UP**  
Tvorba a odlišná prírodná kolekcia

**CZECH.UP**

**NARA SK**  
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKO

**Living labs**  
Tvorba aktívnych komunitných skupín  
Kancelária miestnej akčnej skupiny Občianske združenie Ipeľ – Hont  
Program rozvoja vidieka SR 2014-2020

**Regional hubs of circular economy - RHCE**

Quadruple and Quintuple Innovation Helix (Q2H) Framework's Encyclopedia MCP

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NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKO

**PIOH**  
PODNIKOVÉ OBNOVY HOSPODÁRSTVA

**REPRIK**