

A revolution in plastics management

Third international open seminar of the Interreg project PLASTIX

Faculty of Environmental Protection (**FEP**) and the Development Agency of Savinja-Šalek Region (**RA SAŠA**), participating in the international Interreg Europe project **PLASTIX** - Plastics Revolution for European Regions, organised the 3rd partner and stakeholder meeting OSDD Slovenia (On Site Deep Dive) in Velenje on 5 and 6 March 2024. In addition to partners from 6 European regions (Catalonia, Fryslân, Lombardy, Savinja-Šalek Region, Tampere and Värmland) and their guests, the seminar also brought together companies, institutions and organisations working in the plastics industry. They presented examples of good practices that are leading the way towards a greener, climate-neutral circular economy in plastics. All European regions are facing similar challenges related to plastics, so exchanging good practices, showcasing innovations and networking with each other are key to improving regional policies that facilitate the transition to a resource-efficient, green and competitive low-carbon economy. At the seminar, the FEP research team presented their project research activities, first focusing on their own prototype for sampling microplastics in small rivers and the results of its initial testing, and secondly, on the field survey of riverine litter.

Plastic is an important material in our economy and plastic products make our everyday lives easier. But most plastics are still produced from fossil fuels, so there is an urgent need to tackle the problems that the production, use and consumption of plastics pose for the environment today. A decisive shift towards a more prosperous and sustainable plastics economy could bring many benefits and requires, in particular, investment in the development of advanced recycling technologies, increasing the reuse of plastics, the use of bio-based raw materials and the exploration of alternative packaging materials. Reducing plastic pollution in aquatic ecosystems, with a focus on microplastics, is also crucial. Indeed, the millions of tonnes of plastic waste that end up in the oceans every year are one of the most obvious and worrying signs of these problems and are a cause of growing public concern.

Monitoring microplastics in rivers is crucial to understanding the ecological and human health risks associated with plastic pollution. We need to be aware that 80% of all plastic waste found in the oceans originates from land-based activities, with rivers being one of the key transport media for plastic particles. Although large rivers may have a greater overall contribution to microplastic pollution, smaller watercourses and water bodies play a key role in understanding local pollution and identifying sources of pollution.

At FEP, we are proud of our research contribution to the international PLASTIX project. After a year of hard work, we have succeeded in developing our own prototype for sampling microplastics in small rivers. The FEP project team, supported by the technical expertise of the College of Industrial Engineering Celje, developed and built a field prototype based on the use of a filtration system with a portable water pump, with small upgrades to allow accurate monitoring of the physico-chemical sampling conditions. The advantage of such a system lies in the independence of the measurements from the water flow and sampling site depth, and the control over the amount of water filtered, which makes the measurements more accurate and representative. The system is mobile, easy to use and maintain, time and cost efficient, and versatile for use in other water bodies.

"I am very pleased that the European regions have recognised us as a good project partner and given us the opportunity to contribute to finding environmental solutions to plastics or microplastics in water. I believe that monitoring microplastics in the two main rivers of the SAŠA region, the Paka and the Savinja, will make an important contribution to identifying potential plastic and microplastic pollution in the addressed area. At the same time, we believe that such applied projects can contribute to the development of a standardised microplastics sampling methodology, which has not yet been adopted at EU level," said **Anja Bubik, PhD**, researcher on the PLASTIX project from the Faculty of Environmental Protection.

Besides the project partners and their guests, the seminar was also attended by regional stakeholders, interested individuals from the business sector, various interest groups and the public of the SAŠA region, such as the Savinja-Šalek Chamber of Commerce and Industry, Plastika Skaza, BSH Home Appliances Group, Nazarje, Coal Mine Velenje, Faculty of Polymer Technology, Gorenje Household Appliances, Hisense Europe, Utility Company Velenje and the Chamber of Public Utilities of Slovenia. Focusing on the challenges of the project, knowledge exchange, innovative approaches to promote sustainable practices, the development of circular economy models and the growth of environmentally friendly industries/technologies, the participants visited the companies Veplas and Plastika Skaza.

In addition to several good practices in the field of plastics management, the guests also got to know a part of the rich tourist offer of the SAŠA region. They took the oldest working elevator in Slovenia down to the underground part of the Slovenian Coal Mining Museum, where 160 metres below the surface, the symbiosis of a raw industrial environment and gastronomic delights awakened all the senses. They also enjoyed the unspoilt nature of our highest waterfall, the Rinka, the first source of the Savinja River, which, surrounded by the mighty Kamnik-Savinja Alps, impresses in all seasons.

About PLASTIX:

PLASTIX addresses the growing issue of plastic waste, its recyclability and substitutability, as part of the transition towards a more circular and climate-neutral economy. But moving towards a more successful and sustainable plastics management requires commitments to action and mobilisation across sectors and levels. Therefore, through the identification of good practices and new solutions through inter-regional exchange and co-creation, the project aims to help regional policy makers to improve and create policy mechanisms that facilitate the industrial transition towards a resource-efficient economy.