



DELIVERABLE D.T2.2.2 REPORT BASED ON THE OUTCOMES OF THE BUSINESS SUPPORT SERVICE

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1. TRENDS IN EUROPE

1.1. BIOPLASTICS

According to the forecasts, there is an increasing demand for the use of bioplastics, so the market certainly could use a TPS or PLA production plant with a capacity of 100 to 130 tons per year. The production of TPS in any other Western European country exceeds this amount. During the production, TPS in itself is used rarely, usually mixed with other types of plastics, so the amount of produced raw material can be multiplied and be able to supply the local market. It is important to emphasize that there is no similar initiative in this region - for setting up PLA or TPS factory - and it cannot be expected in the catching-up countries, so the establishment of the factory is justified from several point of view.

1.2. PACKAGING MARKET

Consumer applications such as food, beverages and cosmetics account for the bulk of the global packaging market. In 2018, the consumer sector was worth almost \$511 billion, or 56.4% of the overall packaging market. Since 2013, the consumer sector has grown by a rather modest 1.4%, owing to factors such as the maturity of the packaging market and many leading end-user sectors across much of the developed world. The share taken by the consumer sector is expected to decrease slightly within the next decade at the expense of its industrial counterpart, shrinking to just under 56% by 2023 and 55.5% by 2028.

1.3. NEW POTENTIAL MARKETS OF PLA (HELPS TO SPREAD PAPER AND PLA COMBINED MARKET)

Method of processing: polylactide, in addition to its advantageous characteristics, still has a beneficial feature that can be processed with existing polymer processing technologies and equipment.

- extrusion,
- blow molding,
- injection molding,
- injection blow molding,
- thermoforming.

It can be used for producing extruded products with different profiles, injection molded parts, decomposable foils, biaxially oriented films, hollow objects, thermoformed trays, anti-cracking foams, fibers, textiles. Packaging and medicine industries are the main users of PLA. Syringes, sachets for blood storage, catheters, surgical catguts, implants, prosthesis, tissue engineering products for patients with burn injures, and also can be used in pharmacy, e.g. by controlled release drug delivery.

1.4. REGULATORY ENVIRONMENT

Sustainability issues are having a profound effect on regulatory activity within the packaging industry at present, driven by the growing desire for a truly circular economy. Europe and the EU appear to be at the forefront of much of the regulatory activity currently taking place as far as sustainability is concerned, via legislation such as the Packaging Waste Directive and the new law banning single-use plastic items such as plates, cutlery, straws and cotton buds stick by 2021.

An important driving force would be the propagation and impact of the EPR system at EU level. Extended Producer Responsibility (EPR) involves the extension of a producers' financial and/or physical responsibility for its product to the post-consumer stage of the product's life cycle.

2. COUNTRY SPECIFIC DATA – SLOVENIA

2.1. SLOVENIAN MARKET

Slovenia is a small country with a highly diversified economy, which is dominated by small and medium companies and a smaller number of large companies. Due to the small domestic market even medium companies, especially if operating in niches, export a significant part of their production. Slovenia's export is mainly oriented towards other EU countries, mainly Germany, Austria, Italy and France but also further afield. A consequence of high exports even in smaller enterprises are very active contacts with players in other economies, integration in international value chains and an understanding of sectoral trends. Exports of goods and services (% of GDP) in Slovenia was reported at 77.65 % in 2016.

2.2. MULTIMATERIAL PRODUCTS AND PAPER INDUSTRY

Multimaterial papers and products are the production domain of the paper value chain. Plastics converters do not produce such products. So the more important industry for this sector is the paper industry. Multimaterial products are mainly used in packaging, especially in retail (e.g. large quantities of windowed paper bags) and for food stuffs where they serve to display, protect and preserve the product. Other less specific and very varied products are also packaged in combined materials (pharmaceuticals, batteries ...). Products mainly consist of laminated papers for print, packaging or other products and of packaging and other products with added barriers, windows, plastic envelopes etc.

Packaging market trends are focusing on sustainable packaging solutions, growing popularity of flexible and lightweight packaging, consolidation of the packaging market, improving product recyclability, optimizing packs for ecommerce and on smart packaging solutions.

There is no actual existing raw material producers of bioplastics (this is the only missing actor in value chain in our country but it does not pose any problem due to possible imports) and just a small number of bioplastics packaging producers (no paper-bioplastics packaging producers) in Slovenia. There is no market developed for the paper-bioplastic packaging products yet, nevertheless, it has a good potential to develop as demand for such products is rising.

The paper industry has a long tradition and is organized through The Paper and paper converting Industry Association (PPCIA) which serves as a joint meeting point and is also part of labour negotiations and an industry representative in dealing with government and policymakers. It is associated with the Chamber of commerce and industry of Slovenia (CCIS) which provides essential services for enterprises operating in Slovenia, and it is the ideal local partner for foreign investor.

2.3. BIODEGRADABLE PLASTIC PRODUCTION

A share of 27% of the world production of bioplastics is produced in Europe, mostly from starch, and experimentally from whey and other renewable sources. The EkoPlastik d.o.o. is the only Slovenian company,

distributing biodegradable polymers within the European Union. There is no manufacture of biopolymers in Slovenia, because there is no market for such products in our country yet. Some companies just process bioplastics, making a few packaging products as biodegradable bags are. The latter is meaningful for us, knowing, there is available biodegradable foil in our country. There is also a company producing PLA (polylactic acid) bottles, but only for the purpose of export. Large retailers have expressed interest in using more sustainable packaging however the (higher) cost is normally a limiting factor. Producers that use combined paper/plastic packaging are a group with high potential for use of paper/bioplastic products. Especially in product lines for bio- eco- food products where they wish to complement the environmental product with sustainable packaging. Several attempts at finding such packaging have been mentioned however at the moment none are used commercially.

Bioplastics and packaging made of it have no specific regulations in Slovenia. Bioplastics undoubtedly brings a change in the market both for consumers and producers. The market is turbulent and the supply/demand system uncoordinated. Recently in European Union the biopolymer products in the rise are thermoplastic foil products. Slovenia has a potential for a development of bioplastics and paper-bioplastics products market

3. ASSESSMENT REPORT

3.1. COMPANY PROFILE

Turizem Bled is a support organization, in 50% domestic private (interest groups from tourist economy) and 50% domestic public ownership (Municipality Bled). They are financed from the tourist taxes (the municipal budget) and from the funds gained from their activities. They have been operating in this form since 2007. Their profit doesn't grow, cause they are part of a Public Sector and they can't be profitable. Their revenue in the last year was slightly over 1 million EUR. In 2016 they employed 7 employees and 9 in the last year, so their company is expanding.

Innovation is important for them, they have a short term plan (up to 1 year). They invested less than 10 % of annual investment budget on average in the last three years in innovation. Innovation predominantly happens internally in the department and externally in private consultant services. They already have some innovative products in the last 5 years, that is around 10 %. Decision makers are top management, but we have to take in consideration that there are only 9 employees. Management support and staff attitude towards innovation is high. Their source of knowledge is mostly conferences where they exchange experiences within the associations in which their partners are involved. It is very important for them to have a possibility of public funding for research in order to develop their innovations. Certain projects are funded through EU projects, but otherwise they get funds by definition from Municipality. They still have to justify all funding, otherwise they are not eligible.

3.2. SUSTAINABILITY, USING OF BIOMATERIALS

Sustainable development is important for them, they already have quantitative sustainability goals with defined timeframe and already published a sustainability report. Bled has been advocating green tourism for several years now and is the proud recipient of the gold label of the Green Scheme of Slovenian Tourism. As part of the 2019 Green Destinations international non-governmental project, Bled was selected as the second best place in sustainable development in Europe, and since 2011 it is a member of the Alpine Pearls group, the objective of which is to promote sustainable mobility. Their investment budget that goes toward improved sustainability is about 10 to 20 % of annual investment budget, which is approx. 130.000 EUR.

Activities on sustainability are caused mostly by external factors. The importance of end-of-life management of their products and bio-based content in their packaging is not yet so important. There is no demand from tourists at this point, but sustainability is increasingly getting important within the destination itself. The price of products is very important, but at this moment the customers are not really sensitive to it.

As from the point of their environmental sustainability strategy, paper, bioplastics, plastic and bio-composites are very important. They are not familiar with legislation for sustainable products as it is recycling, composting, biocontent etc. They are not so much familiar with biomaterials, but already thinking to use them in the near future. Key limitations for this are knowledge, customer awareness and from that follows that is hard to justify a higher price of the final product, packaging to their customers.

3.3. PRODUCTION SPECIALITIES

Turizem Bled is included in development plan Unesco MAB areas of Julian Alps as a tourist destination. Their partners are Javni zavod Triglavski narodni park (TNP), Turizem Bohinj, LTO Bovec, LTO Zavod za turizem Kranjska Gora, Turizem Radovljica and LTO Sotočje. One of project strategies is to create a common brand for certain areas in Julian Alps that will bring together local growers, craftsmen from the food and non-food industries to raise the level of their products through a common brand, gain them visibility and position them in the market. Products have to be local and goal is to follow the sustainable circular economy.

3.4. SUMMARY AND SOLUTIONS

They are ready to make further steps and gain new knowledge from the side of biomaterials and biocomposites. They are already a sustainable tourist destination, but there are a lot of open questions still needed to be answered. There is a need to find manufacturers that already have a knowledge and production capabilities to produce sustainable and in the best case scenario a circular products, single use packaging for food and non-food products. They need a knowledge how to make a product or service that will be on a high level, but not at the expense of the environment.