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Katerina Medkova, Susanna Vanhamäki

Päijät-Häme Action Plan towards Bio-based Circular Economy

Introduction

The circular economy is rapidly evolving. The circular economy aims at closing the material loops, as opposed to the currently prevailing linear economy. In these loops, the value of products, materials and resources is maintained in its highest utility for as long as possible (EC 2015). Cycles can be divided into biological and technical as defined in the Butterfly diagram of Ellen MacArthur Foundation (2015).

An economy relying on renewable biological resources (e.g. crops, forests and animals) and their conversion into food, feed, products, materials and energy, is called bioeconomy (Figure 1). Industries like agriculture, forestry, fisheries, food and pulp and paper production, as well as parts of the chemical, biotechnological and energy industries, belong to bioeconomy. (EC 2012) Bioeconomy is, however, not always circular or sustainable. Therefore, when combining bioeconomy with the circular economy principles, a bio-based circular economy evolves and the full potential of the circular economy can be obtained. Bio-based circular economy or bio circular economy is the circular economy of bio-based materials, which are wholly or partly derived from materials of biological origin (EC 2018).

The Interreg Europe programme stimulates cooperation between different European regions through the exchange of experience and Good Practices (Interreg Europe 2018a). BIOREGIO is a five-year-long Interreg Europe project aiming

to boost the bio-based circular economy. The partnership consists of eight partners from six countries. The main goal of BIOREGIO is to improve regional policies and programs related to the circular economy of biological streams by transferring knowledge and developing action plans. (Interreg Europe 2018b.) This article presents the action plan of the Päijät-Häme region in Finland.

From Good Practices towards an Action Plan

Good Practice can be related to technology, such as biogas production or biorefinery, or cooperation models, such as ecosystems and networks. All BIOREGIO partners and stakeholders carefully select successfully proven Good Practices in their regions based on the defined criteria. The full list of the criteria (n=8) of bio-based circular economy Good Practices, commonly identified by the BIOREGIO project consortium, is available on the project website (Interreg Europe 2018c). To name a few, resource efficiency, transferability and scalability in different European regions are listed.

Good Practices identified in BIOREGIO are available on the project website (Interreg Europe 2018d). Interreg Europe experts assess all practices. If a Good Practice is seen to have potential for being transferred in other regions, it is published at the Policy Learning Platform. The Policy Learning Platform is an online database launched by Interreg Europe, where expert-

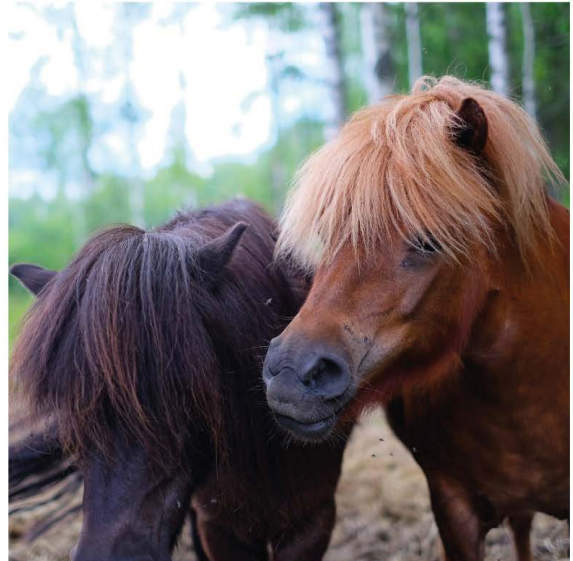


Figure 1. Biological resources create the foundation for the bio-based circular economy. (photo by Oona Rouhiainen 2018)

validated Good Practices from European cities and regions are shared. By sharing knowledge, experiences and practices, everyone can benefit from already tried-and-tested solutions. (Interreg Europe 2018e)

As an outcome of Interreg Europe projects, an action plan on how to develop the use and focus of regional policy instruments (e.g. Structural funds like the European Regional Development Fund, ERDF) is set up (Interreg Europe 2018a). In terms of BIOREGIO, the action plan defines the goals of long and short-term regional development of the bio-based circular economy. The action plans set in BIOREGIO regions enhance the transfer of the Good Practices.

Towards a regional action plan in Päijät-Häme, Finland

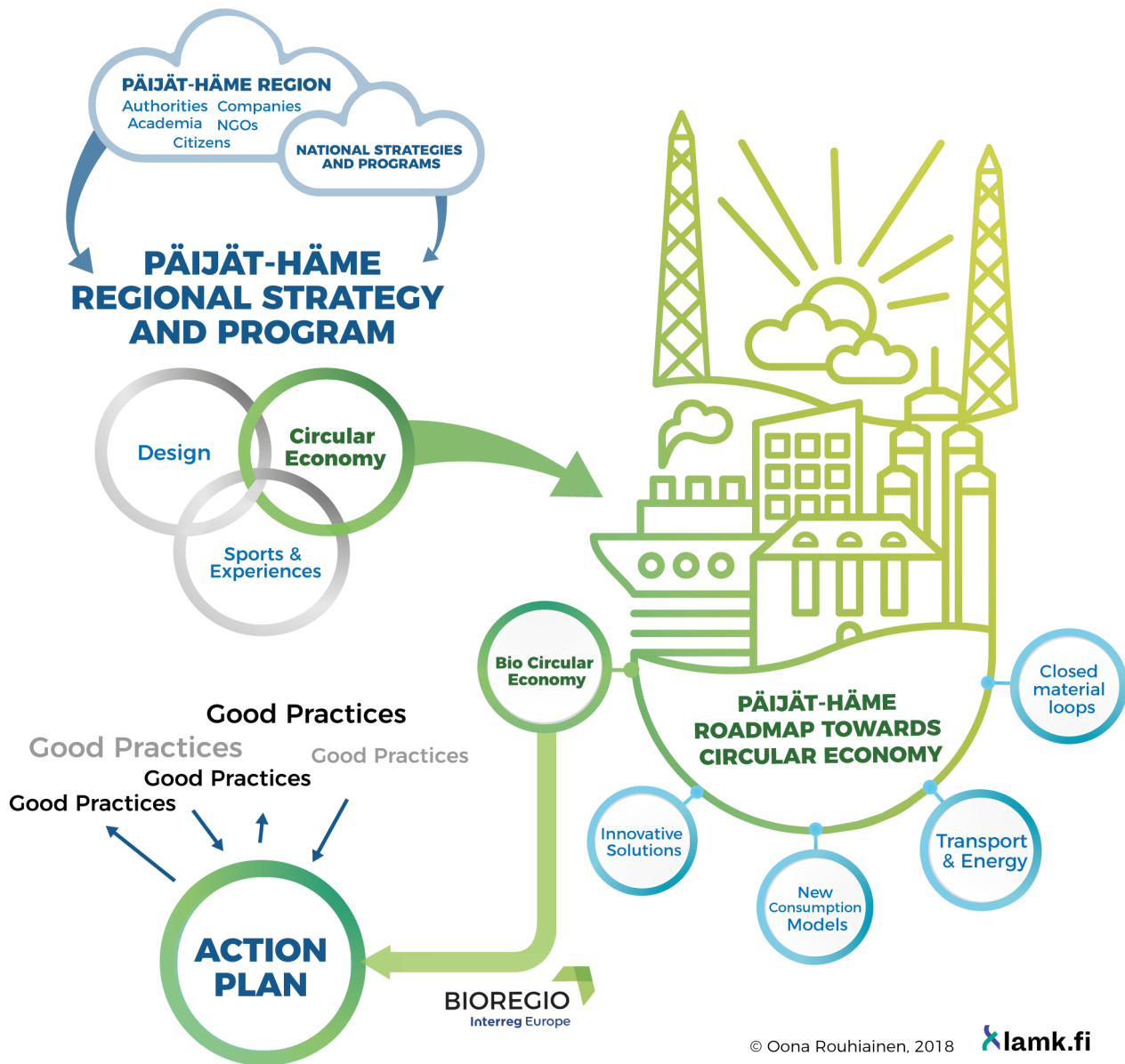
As a part of the Regional Development Strategy and Programme for the Päijät-Häme region for 2018–2021, the Päijät-Häme road map towards a circular economy was launched in the autumn of 2017 as a part of the regional strategy and programme. The road map is described in detail in the article written by Virtanen in this publication.

The Päijät-Häme road map has been recognized by the Interreg Europe (2018f) as a transferable good practice. According to the Interreg Europe experts, the Päijät-Häme road map is a positive example of translating national priorities to a regional context by creating a joint regional strategy with a bottom-up approach. The experts see strong potential for transferring the road map example to other regions interested in a transition towards a circular economy.

One of the five goals of the road map is related to bio circular economy. As a part of updating the road map, as described by Virtanen, the bio circular economy or bio-based circular economy targets were specified. The action plan of the BIOREGIO project was set up based on the updated road map strategy.

Päijät-Häme regional council has chaired a regional bioeconomy working group since 2016. In 2018, the name and focus of the group were re-adjusted to become the Päijät-Häme circular economy group. Since the start of the BIOREGIO project, this group has also had the responsibility of being the regional BIOREGIO stakeholder group. The group consists of members from the administration, municipalities, business sector and academia.

The action plan was discussed in two meetings of the circular economy group/BIOREGIO stakeholder group. In June 2018, the preliminary ideas were collected among the attendants. Based on the discussion, the regional council together with Lahti University of Applied Sciences formulated topics for further processing. At the meeting in September 2018, the focus of the action plan was clarified as a part of updating the circular economy road map targets. Additional comments were also asked from all municipalities in the region as well as from the members of the group who were unable to attend the meeting. The draft of the action plan was sent for final comments to the circular economy group and the plan was approved in October 2010. Figure 2 presents the connection between the Päijät-Häme regional strategy, the road map towards a circular economy and the BIOREGIO action plan.



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Figure 2. The link between the Päijät-Häme regional strategy, the road map towards a circular economy and the BIOREGIO action plan. (Oona Rouhiainen 2018)

Bio-based circular economy action plan of the Pääjät-Häme region

The action plan is designed to include both short- and long-term targets to develop the bio-based circular economy in the region. The short-term targets are set up to be reached before the end of the current structural fund's programming period 2014–2020. The long-term targets express future goals related to the bio-based circular economy in the region and are also related to the coming programming period beginning in 2021. The actions are listed as follows:

1. Developing sustainable bio-based circular economy and enhancing the circulation of nutrients

Timeframe: long-term goal

- promoting utilization of bio-based materials and regional bio-based circular economy
- aiming towards closing nutrient loops of nitrogen and phosphorus
- developing sustainable business models in bio-based circular economy

2. New solutions in the collection and utilization of biowaste

Timeframe: ERDF programming period 2014–2020

- reducing the amount of biowaste and wasted food
- user-oriented development
- testing pilot solutions e.g. separate collection of biowaste, developing biowaste bins, composting pilots

3. Developing the utilisation of bio-products and bioenergy

Timeframe: ERDF programming period 2014–2020

- new possibilities of utilizing wastewater sludge
 - material utilization, developing and further processing by-products
 - utilizing by-products in small scale CHP production (related to a BIOREGIO Good Practice in Greece “Use of organic residues for energy production” (Interreg Europe 2018g))
- developing the use of biogas-driven vehicles

4. Developing the Pääjät-Häme regional circular economy strategy

Timeframe: long-term goal

- sharing the good practice of implementing a Smart Specialisation spearhead through a road map
- involving sustainability in bioeconomy, developing holistic circular economy perspective
- continuous updating in cooperation with the circular economy working group
- new ways of involving companies in the process

Conclusion

Including sustainability and circularity in bioeconomy is a precondition for reaching a bio-based circular economy. As a result of the BIOREGIO project, six European regions will set up plans on how to develop and support a better use of bio-based resources in a more circular way.

The road map towards circular economy in Päijät-Häme, i.e. the regional circular economy strategy, lays the foundation for future development and will be updated continuously. At the same time, as a part of the road map, the achievements in bio-based circular economy clarified in the BIOREGIO action plan will be followed up. The road map, as well as the action plan, are both living documents, meant to be updated and changed according to regional, national and international challenges and needs. The broader view of the circular economy, which the holistic road map setting allows, forms the base for a comprehensive understanding of the full potential of the bio-based circular economy.

This article reflects the authors' views; the Interreg Europe programme authorities are not liable for any use that may be made of the information contained therein.

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