

## *First workshop on circular economy and forestry in mountain supply chains successfully completed in Skrad, Croatia*

On 29 November, 2016 in Skrad, Croatia, Euromontana, in partnership with its Croatian member, PINS, and Mr. Radoš, Croatian Member of the European Parliament, hosted a workshop on the circular economy in forestry entitled: "Innovation and Circular Economy in Mountain Forest Supply Chains: How to Close the Loop?". The workshop gathered 62 participants from 13 European countries and included plenaries on good practices and thematic presentations from European experts and practitioners. The objective was to better understand how a more circular economy could be developed in the forestry sector in mountain areas.

The workshop began with introductions from the hosting organizations. Mr. Radoš, Member of the European Parliament (MEP), explained how the RUMRA (Rural, Mountainous and Remote Areas) intergroup of the European Parliament supports mountain areas. He emphasised how the European Parliament can support a more circular economy in forestry through the adoption of the circular economy package and with the new European strategy for forestry. As a Croatian MEP, he insisted on the fact that the circular economy is just beginning to take hold in his country and that Croatia could benefit from targeted efforts to promote the circular economy. These efforts could include the sharing of good experiences with the general public and public administration.

Juanan Gutierrez, President of Euromontana, explained why the circular economy is particularly important in mountain areas, even more so than elsewhere. Strong pressure on natural resources and diminishing availability of resources will force actors in mountain areas to turn to more circular models in order to maximize the value of extracted resources and to manage them more sustainably. The specific constraints of mountain areas (lack of infrastructure, difficulties in access) require new approaches, be it new governance, new technical processes, or new innovative tools and technology. The forestry sector is particularly important in mountain areas as forests cover 41% of Europe's mountains. Forests provide critical ecosystem services and natural resources and are thus very important economic and environmental resources for mountain areas. It is insufficient for one sector, such as the forestry sector, to become circular. Instead, mountain territories in their entirety must adopt the circular economy. Juanan Gutierrez also introduced the following general objectives of the workshop:

- To better understand the policy framework (EU, national and regional policies and programmes) supporting the circular economy in forestry
- To explore visions for a circular economy in the forest supply chain – what does a circular economy in the forest supply chain look like, how will we achieve it?
- From theory to practice: to explore innovative tools, instruments and processes that can improve the circular economy in forestry.
- To facilitate the exchange of experiences and good practices, ideas and proposals among the different mountain forest actors in Europe.

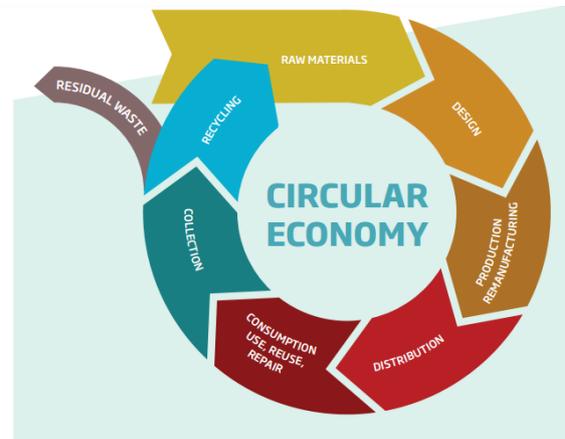


Danijel Bertović, director of PINS, made a presentation on “Forestry and the circular economy in Croatia”. The total area of forests and forest land in Croatia amounts to 2.688.687 ha, which is 47% of the country’s total land area. 75% of this forest is state-owned. Forests represent 9% of the GDP of Croatia, making the topic of the workshop a particularly important one for Croatia and particularly for Skrad, a town surrounded by forests.

### *Circular Economy in Mountain Forestry: What might the circular economy in forestry look like? How can we achieve it?*

The circular economy is based on “sharing, leasing, reuse, repair, refurbishment, and recycling” of products and materials in an ideally closed loop<sup>1</sup> (Figure 1). This contrasts with traditional linear economic models that assume an infinite supply of resources and therefore do not consider the end life of a product.

At the heart of the circular economy in forestry is the sustainable consumption of primary materials from European forests, a decrease in waste production along the entire supply chain, and an associated increase in the use of waste as raw material. The EU has set clear objectives pertaining to the usage of renewable energy resources. By 2030, 20% of energy should be obtained from renewable resources<sup>2</sup>. While these objectives may not be achieved, they provide clear goals towards which the circular economy should strive.



The circular economy involves intrinsic recycling and feedback loops and applies to the whole economy. source diagram: European Commission

Figure 1

### *How does EU legislation facilitate a more circular economy in forestry?*

Sarah Whitaker, mountain products and forestry officer from Euromontana, outlined the characteristics of the **2015 circular economy package and its action plan**<sup>3</sup> for the circular economy as well as the list of measures and legislative proposals on waste policy in the EU. Of particular relevance to the forestry sector and mountain areas is the circular economy package action plan, which addresses production, consumption, innovation, markets, waste management, and monitoring. The action plan has five priority areas: plastics, food waste, critical raw materials, construction and demolition, and biomass and bio-based products. The EU Commission is developing measures addressing each of these priority areas. Each of the themes of the action plan and each of the priority areas are relevant to mountain areas and forestry, but, in particular, critical raw materials and biomass and bio-based products are important because the forestry sector is a primary source of raw materials, namely wood, and of biomass and bio-based products extracted from or designed using forest products. Though forests are renewable, they are also limited. Forests must be properly managed in order to ensure that the critical raw materials in forests are not depleted and so that biomass and bio based products may continue to be extracted from forests.

Effective forest management for the circular economy must consider competing demand for forest products versus services, the natural constraints associated with the landscape features of the areas where the forests are located, and political and economic constraints. In 2013, the EU launched its new Forest Strategy. The strategy calls for: (1) sustainable forest management that preserves primary resources, goods, and ecosystem services from forests; (2) resource efficiency that promotes rural development, economic growth, job growth, and the competitiveness of the forestry sector, and (3) coordination, cooperation and communication within the

<sup>1</sup> Didier Bourguignon, EPRS Closing the loop – new circular economy package [http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS\\_BRI\(2016\)573899\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS_BRI(2016)573899_EN.pdf)

<sup>2</sup> European Commission (30.11.2016) DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the promotion of the use of energy from renewable sources (recast). COM(2016) 767 final. Brussels. Available from [https://ec.europa.eu/energy/sites/ener/files/documents/1\\_en\\_act\\_part1\\_v7\\_1.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/1_en_act_part1_v7_1.pdf)

<sup>3</sup> European Commission (2/12/2015). COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Closing the loop - An EU action plan for the Circular Economy. COM/2015/0614 final. Brussels. Available from: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52015DC0614>

sector. These objectives are coherent with the overall and specific objectives of the circular economy. For example, sustainable forest management that preserves primary resources and protects ecosystem services contributes will ensure that the primary resources in the circular economy are not overexploited or wasted and that the circular economy is itself sustainable.

### The linear economy is no longer sustainable

Saša Čegar, researcher from the University of Rijeka in Croatia, explained that in a linear economy, energy and resources are obtained from the environment, processed, and consumed at which point they become waste and harmful sub-products which cannot later be converted into other useful products. This waste is disposed of in landfills and incinerators. Profits are made through increased production and sales, which are not sustainable if products end up as waste. **The circular economy provides an alternative** to this production-consumption model. Mr. Čegar also showed research indicating that Eastern European countries need more energy for production in comparison to other EU28 countries. At the same time, the Eco innovation index in Croatia and most Eastern Europe countries is behind that of the EU28 countries, which means there is an urgent need to develop new strategies for the environment and the economy. The circular economy is one such strategy.

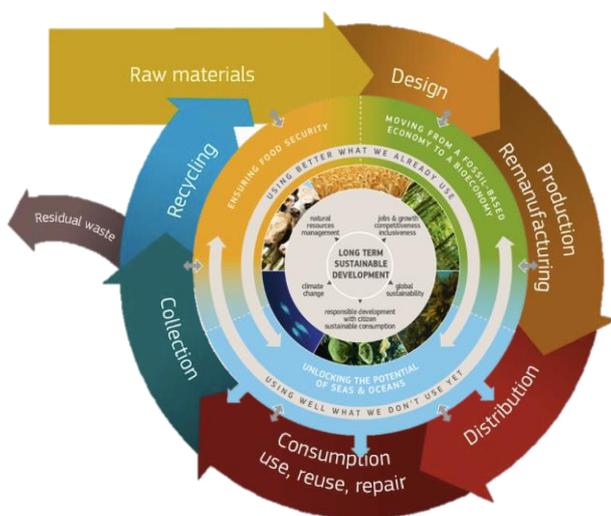


Figure 2

### What might the circular economy in mountain forestry look like and what makes it unique?

Ben Allen, Senior Policy Analyst at the Institute for European Environmental Policy (IEEP) in the United Kingdom, spoke about the **importance of the circular economy in mountain forests and how the circular economy could change the scenario of how items are produced and waste is disposed**. To achieve a circular economy, we must keep resources within the economic loop. Primary resources, such as trees, are limited, fragile and vulnerable to external agents such as climate change. By adopting a reuse strategy, such as that which underlies the circular economy, that takes waste from along the production cycle and reuses it again, we can keep resources in the production-consumption loop,

decrease waste, and reduce demand on primary resources. Dr. Allen showed how the bio-economy, which is based on the production and use of biological resources for conversion into commercial products, ranging from food and feed to bio-based products and bio-energy, connects to the circular economy (Figure 2)<sup>4</sup>. But challenges were also a key factor in his presentation:

*“How can waste from the production-consumption cycle be safely returned to the forest? [referring to products] how can we recover the value produced? Wood for example is a material that biodegrades through time which itself is a challenge and can be contaminated, how do we get it back to the forest? The successful adoption of the circular economy in mountain forestry can stimulate innovation, lead to new forms of employment, and strengthen communities”* stated Mr. Allen.

### What funding is available at the EU level?

There is no specific funding for circular economy in forestry in mountain areas, but there are different and interesting EU programmes that could help fund innovative projects. Marie Clotteau, Director of Euromontana presented five possibilities with some relevant calls for proposals.

<sup>4</sup> Institute for European Environmental Policy (IEEP), Ben Allen, What might the circular economy in mountain forestry look like and what makes it unique? Challenges and opportunities. Srkad, Croatia. Available from: [http://www.euromontana.org/wp-content/uploads/2016/09/Allen\\_B-Mountain-Forests-CE\\_Croatia.pdf](http://www.euromontana.org/wp-content/uploads/2016/09/Allen_B-Mountain-Forests-CE_Croatia.pdf)

Some existing EU policies and programs include:

Main Target	Project name	Co-funding rate
For research, innovation and industrial application	Horizon 2020 programme	Research and innovation action: 100% Innovation action: 70% Coordination and support action: 100%
For local actors	Operational Groups –EAFRD	Depending on the actions
For the collection of Good Practices and policy making	Interreg Europe	85% or 75% (public or private bodies) – 50% for Norwegians
For SMEs	COSME	Between 40 and 60%
For training and skills of workers	Erasmus	Depending on the actions

### From the theory to practice: good practices in forestry

The workshop also served as a tool to facilitate the exchange of experiences, good practices and new ideas among the different mountain forest actors in Europe. The following good practices were presented.



### Forest’s Contracts: an instrument of development and participatory management

Enrico Calvo, officer from the Regional Entity for Services to Agriculture and Forestry (ERSAF) in Italy presented a circular engagement process for the governance of the Lombardian forests. He said that “*Italian forests face global challenges posed by the market, the environment, and society and the dynamic and interdependent relations between global and local actions*”. In order to implement international processes in Lombardy’s forests, the Lombardy region and ERSAF began a process in 2004 for the multifunctional and sustainable valorization of regionally-owned forests (over 20,000 ha distributed in 20 forests, FSC and PEFC certified since 2009). This process was born as a response to the need to implement and disseminate sustainable forestry management processes and to adopt modern and effective forest management tools to meet the needs of the Lombardy society. In addition, Mr. Calvo explained that a new forest contract is an agreement between public and private entities for the development of the territory of the Regional Forest and the surrounding area, it enables regional forests to act as local development tools.

### The use of drones for accurate data collection and sustainable forest management

Ivan Lukić explained the work of GDİ, a Croatian company based in Zagreb, which creates solutions for the efficient management of forest assets. The company produces technology to “*assist forest management through monitoring, data analysis, and planning*”. One example is geographic information systems (GIS) that integrate many different data sources - field work, UAV data collection and satellite imagery. Drones can provide rapid and accurate estimations of forest conditions. With these estimations in hand, forest managers can assess the state of their forests and ensure forest health. In terms of circular economy, the technology helps forest managers ensure that primary resources are sustainably maintained and assists them in optimizing costs.

### How to match nature and biodiversity conservation with sustainable exploitation of woody biomass for energy production?

Mario Grillo, from the Confederation of Italian Farmers in Italy, explained the *BioEuparks* project, a project that sought to reuse biomass in the Sila Park protected area in order to reduce waste, promote local development, and encourage sustainable biomass use. The Sila Park, as with the four other Parks involved in the *BioEuparks* project, developed and set up a local biomass supply chain which kept biomass from the park within the park as

opposed to the pre-existing model of export of biomass outside the park. The new supply chains have led to an economically and environmentally virtuous energy cycle in the Park area and nearby.

The creation of the supply chain in the Sila National Park area built a closer connection between local consumers and biomass harvesting areas, reducing the length of the supply chain and thus the costs and environmental impact of transport. The park developed a Green Procurement Model for the selection of the pellet provider. In so doing, it showed how public authorities can be active players in the development of local circular economies, namely through promoting short range and sustainable biomass supply chains. The BioEuparks project involved several key actors from the territory including forest cooperatives, farmers, associations, etc. and involved them in the potential benefits of activating a local and sustainable supply chain. This project was created in a network with four other European Parks, universities and associations and can serve as a model for other areas seeking to establish local biomass supply chains.

### Use of bioash granulators in the circular economy

Powerplants and paper and pulp companies burn biomass and produce bioash. Sakari Kiviniemi, General Director of Rakeistus in Stora Enso of Oulu, Finland, explained how his company takes discarded bioash and turns it into granules that can be used as fertilizer for forests. Currently, powerplant and paper and pulp companies must use an expensive process (due to the rules of the 2011 EU waste directive) to dispose of bioash in a dump. This waste could be productively recycled through granulation. The challenge for Rakeistus was to develop a process to effectively convert the bioash into a useful product, a challenge they overcame. Today, Rakeistus actively participates in research on bioash granulation with two universities in Finland as a strategy to remain up to date on the newest technologies and ensure that they are able to use the maximum amount of waste possible and to produce the best product.

### Good practices as a key factor from the implementation of circular economy

Sarah Whitaker, Mountain products and Forestry Officer of Euromontana, presented briefly four additional good practices which included:

- **3visjon AS a project between Sweden (Idre) and Norway (Drevsjø):** This company produces small environmentally friendly building elements which give buildings a traditional look while ensuring that the buildings follow all modern legislative requirements. One of the project's major contributions has been to boost local rural development through job growth and value creation.
- **PDO Bois de Jura, between the borders of France and Switzerland:** The project obtained a protected designation of origin (PDO) certification for wood. PDO was previously only used on food products. The certification adds value to the wood produced in the Bois de Jura.
- **Comparing the added value of domestic timber - produced and processed in different supply chains in South Tyrol, Italy:** The project studied the economic added value (AV) of the production of domestic timber, processing, and refinement of wood in a regional network and found significant AV from regional production in three different supply chains: pulp wood to energy, logs to wood-panels, and high quality logs to furniture.
- **Law and Order in the Forest Supply Chain, Primorsko-goranska županija, Gorski kotar":** the primary goal of this project is to understand the condition of privately owned forest land parcels and integrate them into the forest supply chain.

The event also stimulated interest in new strategies relating to forestry such as the better usage of forests, the challenges of realizing a circular economy in forestry, and the unique perspectives that exist in rural areas. Forestry can contribute to the circular economy in Europe through the development of new and innovative products, processes and governance.

### Conclusions

The circular economy package combined with the EU forest strategy can help to establish a relevant framework for a more circular forest supply chain in mountain areas. In order to implement this new framework, an adequate toolbox for research, funding, governance, and knowledge sharing should be put at the disposal of mountain actors.

To conclude, the President of Euromontana, Juanan Gutierrez, presented some recommendations and suggestions of actions for the members of the network, which included:

1. We recommend that the European Commission develop **more applied research and innovation on circular economy** in general and more specifically in the forestry sector. We encourage the inclusion of specific calls for proposals on the forest supply chain in the H2020 programme under Society Challenge 2.
2. Funding should be provided for SMEs so that they can adapt their businesses to align with circular economy principles. EU, national and regional grants and financial instruments, including at the micro-level, could help SMEs in mountain areas transition to a circular economy. We recommend that at the EU level there **be COSME calls more directly promoting adaptation towards a circular economy** and that at the **national and regional level authorities also support the transition** to a circular economy.
3. Some of the Operational Groups of EIP-AGRI address circular economy issues. We recommend that local actors seize the opportunity to participate in these groups and to **develop new Operational Groups specifically on the circular economy in forestry**.
4. Currently, EU Member States are defining **national plans on the circular economy**. We recommend that the Member States integrate specific support, funding and actions for the circular economy in the forestry sector and in mountain areas. We also encourage Euromontana members to contact their Member States to make them aware of **how mountains can contribute to the circular economy** and to define adequate tools to be deployed in mountain areas.
5. Good Practices are being implemented across Europe. The opportunity to share knowledge and experience from these good practices would allow diverse actors to understand how to move concretely towards a more circular economy and how to transfer these good practices to other territories. We recommend the **European Commission to develop a platform to share good practices in the circular economy**. This platform should be divided by subjects (forestry, agriculture, waste, water, etc.), by types of actors implementing the actions (SMEs, regional authorities, farmers, etc.), and by geographical area (urban, rural, mountain, remote, etc.).
6. Euromontana should contribute to the above effort and **collect and share good practices and exchange experiences** in the circular economy in mountain areas, including for the forestry sector.
7. Developing skills and raising awareness about the concept and practical adaptation to the circular economy is as important as providing tools. Thus, we encourage universities and training institutions, especially our members in mountain areas, to develop **adapted educational programmes** for students to educate students and professionals about the circular economy in mountain areas. The creation of a MOOC on circular economy in mountain areas applied to different sectors, such as forestry, tourism, agriculture, etc., could be an interesting Erasmus + project to develop further with our members.

A full study on circular economy and forestry in mountain supply chains will soon be available at the beginning of 2017 with the complete recommendations and action plan of Euromontana for the near future.

For more information and to see the presentations from the event click [here](#)

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