BOOSTING RURAL BIOECONOMY NETWORKS FOLLOWING MULTI-ACTOR APPROACHES

NEWSLETTER

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ABOUT THIS NEWSLETTER: FOUR-MONTHLY ISSUE - CONTRIBUTIONS FROM ALL PROJECT PARTNERS

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BRANCHES

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PARTNERS

Bioeconomy "Good Practices": the BRANCHES Award

The selection of the best practices to be nominated by each Country project partner is on way.
The nomination has being conducted through a public vote. The project partners wish the best will win!

THE FINNISH CANDIDATE Finland nominates its good practice for the BRANCHES Award, the winner was chosen by a vote of the Finnish National Thematic Network of the BRANCHES project and its steering group. The winning proposal, a biomethane liquefaction at a farm-scale, received 54% of the vote. A total of five proposals were submitted to the competition. In addition to the winning idea, the themes of applicants were the cultivation of red clover and the collection and processing of birch leaves into organic tea-type herb infusion, the gamifigation of energy wood harvesting and a farm-level biogas production model.
In the evaluation of the winning proposals, e.g. the following aspects raised up: the technological solution of the proposal is credibly described and seems to be feasible and replicable. The credibility is supported

by the built test equipment and the related research environment. The idea also clearly presents a problem for which a solution has been found. The container size solution allows its implementation also elsewhere and improves at the same time its scalability. On-site biomethane liquefaction solution and associated cost-effective gas collection and logistics can further improve economic profitability of the solution which can also provide a new source of income for the farmer if proven profitable.
The technology for the biomethane liquefaction has been developed at Kokkola University of Applied Science (Centria) within the project Hajautettu biokaasun tuotanto ja nesteytys Suomessa (HABITUS), which can be translated as Decentralized biogas production and liquefaction in Finland.

THE SPANISH CANDIDATES A couple of months ago the Spanish network INtercamBIOM launched the first Best Innovative Practice Award aiming at identifying innovative technologies, processes or business models improving the usual practice and bringing advantages when implanted, for instance, by providing new solutions, increasing the efficiency of the process, or improving its replicability. In the end, innovative practice that are scarcely known although they are already available to be implemented.
Out of the 25 candidates, two innovative practices excelled. The outcome of the public voting, which

collected about 1,600 votes, and the panel evaluation led to a draw between two candidates: Self-cleaning rotary boiler Horizon+, developed by SUGIMAT (see box 1) and Sludge recovery with solar drying and gasification from Sewage Treatment Plant in San Javier (Murcia, Spain), developed by CEDER-CIEMAT (see box 2).

Additionally, the panel has decided to give an honorific mention to the innovative practices that reached the third, fourth and fifth place obtained based on the public voting and the vote of the panel. For more information see the link: https://intercambiom.org/premio-a-la-mejor-practica-innovadora-2022/

THE SELF-CLEANING ROTARY BOILER HORIZON

Developed by SUGIMAT, this equipment allows the valorisation of biofuel with a very significant unburnt components content without requiring additional maintenance shutdowns to clean and achieving a more continuous performance. The key to achieve such a result lies in the rotary operation which enables the ash slipping between the boiler passes until their extraction, together with an additional system introducing aggregates which allows to detach the deposits adhered. More info in the section "The Practioner's Voice".

SEWAGE TREATMENT PLANT IN SAN JAVIER

Sludge recovery with solar drying and gasification from Sewage Treatment Plant in San Javier (Murcia, Spain), developed by CEDER-CIEMAT, allows to reduce the environmental impact associated to the usual management and treatment of sludges, producing at the same time renewable energy and a highly stable soil improver by combining four different technologies: solar dryer, gasification, gas burner and Organic Rankine cycle (ORC). More info in the section "The Practioner's Voice".

SECOND MEETING OF THE NATIONAL NETWORK "BIOECONOMY IN THE PRACTICE" The German National Network "Bioeconomy in Practice" meet once again the past 28th of May 2022. The network, launched last November and coordinated by the German Biomass Research Centre (Deutsches Biomasseforschungszentrum gemeinnützige GmbH – DBFZ), the Helmholtz Centre for Environmental Research (UFZ) and the Bioeconomy Cluster e.V, held its second meeting in an online event dedicated to disseminate the innovations of the network members. The event focused in two specific innovations. The first, presented by Dr. Theresa Dörres from the Chemie Cluster Bayern is the "Value Chain Generator", a digital tool for mapping existing and creating new value chains by facilitating the contact between interested value chain stakeholders. The second presentation, by Dr. Martin Brunsmeier from the Technische Hochschule Rosenheim was focalised in the initiative of the project OneForest for "a Multi-Criteria Decision Support System for a Common Forest Management to strengthen forest resilience, harmonise stakeholder interests and ensure sustainable wood flows". The matchmaking sessions provided an opportunity for network partners to get to know each other, brainstorm, and discuss ideas around the two main presentations at the event.

A synergy between BRANCHES and a new Association of forestry stakeholders has just been launched in ITALY

Recently,a new Association was established in support of the "Eco-Sustainable Management of the Territory in Abruzzo (Central ITALY)" abbreviated through the Italian acronym GESTA. The initiative, promoted and financed by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF), meant to establish a network of stakeholders including practitioners, local authorities and administrations to support the both forestry and agriculture as well as to develop bioeconomy supply chains. The initial 20 founding members comprise 13 ASBUC (separate administrations of assets for civic use), 4 Municipalities, 2 practitioners and 1 consortium of forest companies. Because of the similarity of objectives with BRANCHES, in March, ITABIA held a meeting with all the GESTA stakeholders to disclose the results obtained by BRANCHES and show the forthcoming planned activities. Questionnaires were also distributed among participants to collect requests for technological innovation. Results of the survey will be relevant to improve synergies between the two projects that will be discussed in further joint meeting.

Branches lands in Argentina

On April 29, at the ITABIA headquarters in Rome, a workshop involving representatives of Argentina, a country far beyond the perimeter envisaged by BRANCHES, was held to share some of the Bioeconomy good practices results achieved by the project during its first 18 months of activity. The workshop was attended by government decision makers and scientists interested in strengthening bioeconomy in Argentina including Dalmacio Mera (Minister of digital inclusion and production systems of the Province of Catamarca), Prof. Lino Baranao (Faculty of Chemistry of the University of Buenos Aires), Prof. Martin Lazzaro (Faculty of Agronomy of the University of La Plata). The province of Catamarca (one of the 23 Argentine provinces) is characterized by extended lands

cultivated at olive trees and vineyards source of large quantities of pruning residues that are usually burned. Minister Mera expressed great interest in the transfer of technological know-how to enhance by-products such as pruning residues coming from both wine and olive oil production chains. In this regard, ITABIA illustrated 3 PAs developed by BRANCHES project that deal with the Argentinian interests. PA n.1 "FIUSIS: a complete pruning residue value chain "(Italy) and PA 10 and 11 respectively" Prototype to collect vineyard pre-pruning biomass "and" Olive cake gasification "(Spain).

Few thoughts on the war in Ukraine

We have not yet emerged from the pandemic emergency that we are already burdened by the horrors of an armed conflict whose developments are dangerously unpredictable. The disagreement between Russia and Ukraine, that could have been solved with the intervention of the whole international diplomacy, has become a real war (not a special military operation) that threatens the whole world. Faced by the drama of the Ukrainian nation and the risk of an uncontrollable escalation, focus the attention on energy issues, related to markets and costs, might seem cynical, but - as component of the current crisis - they must be carefully taken in consideration. Within a few weeks, as a result of a sudden increase in fuel prices, the oblivion seems to have fallen on European sustainable development strategies such as the Green Deal or the "Next Generation". On the energy policy front, old and in the process of abandonment programs for research, extraction and use of fossil sources, including coal, have been taken into account. In the general confusion of this new tragic crisis, many of our policymakers are looking for unlikely solutions based on technologies that are not yet mature (nuclear generation IV) or others that are totally anachronistic (coal-fired power plants).

A serious reflection on such assumption must absolutely be done! In fact, even in this intricate affair, the role of the renewables should be confirmed as strategic, both on the environmental level - given that the climate crisis has not been resolved - and for a greater energy autonomy in an increasingly complex geopolitical framework. Today, more than ever, we realize how much the development of RES (primarily bioenergy) would have protected us from the well-known environmental and geopolitical risks associated with the abuse of fossil fuels.

New assessments from the Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate (IPCC) Report entitled "Climate Change 2022: Mitigation of climate change" (https://www.ipcc.ch/report/ar6/wg3/) has been recently released. The authors state that in all production sectors there are technological solutions capable of halving carbon dioxide emissions by 2030. To this end, the actual political will of the individual states will be decisive. This drastic reduction in emissions can occur at a cost of less than USD 100 per tonne of CO_2 equivalent, a cost that is in line with the European CO_2 prices on the emissions market (ETS - Emissions Trading System). For industry, the reduction of emissions will go through innovative production processes such as: a more efficient use of

materials, the reuse and recycling of products and the minimization of waste, the use of electricity and heat from RES, up to the capture and carbon storage. Obviously, the “AFLOLU” (Agriculture, Forestry and Other Land Use) sector, which brings together agriculture, forestry and other land uses, will also be crucial because - in addition to allowing reductions in greenhouse gas emissions - it can also remove and store CO_2. Furthermore, it is now well known that a number of options for responding to climate mitigation needs, can bring countless benefits as ecosystem services. However, scientists stress that the benefits of well-used soil (reduced emissions and CO_2 storage) cannot compensate for inefficiencies and delays in reducing emissions in other productive sectors.

Peri-urban forests and climate change

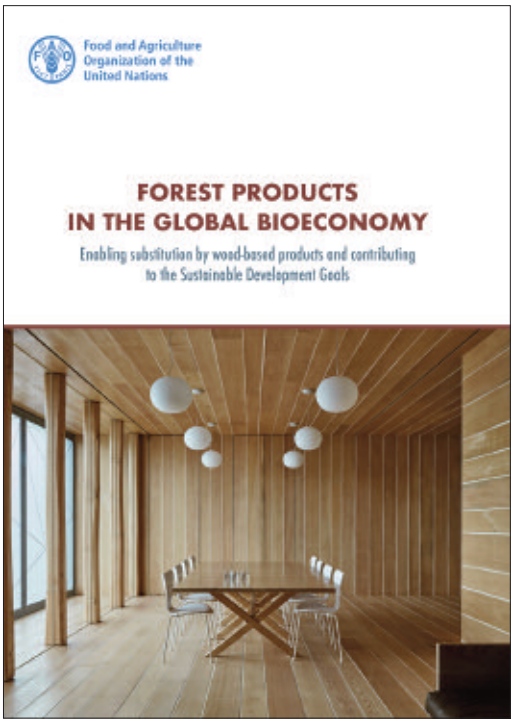
According to two recent studies conducted by the Boston University, forest areas near urban settlements counteract climate change much more than expected. In fact, in these sites the plants grow faster and the soil that hosts them has a greater capacity for carbon sequestration. The analysis focused on the so-called "border areas", i.e. those woods located near environments characterized by anthropic interferences such as roads, houses and other infrastructures typical of the urban settlements.

Unexpectedly, it appears that in these areas the average increase in the basal area of trees exceeds that recorded in the internal forest by 36% (study published in Nature Communications). Scientists believe that the decisive factors to stimulate a greater plant growth are: sufficient presence of water, greater access to light and the absorption of CO_2 itself (captured from nearby roads and surrounding buildings) and available amounts of nitrogen.

A second study published in the journal Global Change Biology focused on CO_2 emissions in buffer forests and, even here, the emerged results were unexpected since it appears that in urban areas the release rate of carbon dioxide from the wooded soil is 25% lower than that recorded inside forests. Essentially, urban forests show a greater effectiveness of carbon sequestration. All these results will be useful in forecasting soil behaviours and carbon cycle, in an increasingly urbanized and even more warm world.

Report FAO "Forest products in the global bioeconomy"

The real challenge is to manage forests in a more sustainable way, to enhance the products made with the raw materials coming from them. This is what has been described in a report produced by FAO in collaboration with the European Forest Institute (EFI).



The document, presented at the Dubai EXPO on the occasion of the International Day of Forests, has been produced to describe the innovations in the forest sector intended to pave the way for a sustainable use of forest products that will reduce the environmental impact as well as the production of waste. Among the many data highlighted in the report, one is very reflective: 75% of the global consumption of materials involves non-renewable resources. The extraction, transport, processing and disposal of these resources have a huge impact on the environment, climate and biodiversity. A sign of how long is the way for the ecological transition.

The Report highlighted the role of forest products in replacing fossil-based and greenhouse gas-intensive ones. In this regard, together with interesting recommendations and conclusions, the document provides an overview of the global bioeconomy; several examples of conventional and innovative forest products; a review of the environmental impacts and benefits of replacing fossil fuel-based or high-intensity fuel products with forest-based products; future global dynamics of supply and demand for forest products; gaps in the global value chain of forest products.

Xavier Mas, Technical and R&D Director at Sugimat

"Horizon + boiler is the results of two years of hard work in our laboratories where we tested all types of conditions and requests to confirms its reliability. What makes it different from other technologies and a unique model in the market is its self-cleaning system.

In fact, we have realized that the clients prioritize among the selection criteria the technological features and the autonomy that Horizon+ boiler offers, therefore we have very good sales forecasts in the near future".

Virginia Pérez, researcher at the Thermal Conversion Process Department in CEDER-CIEMAT

«In CEDER we have been working on technologies such as the sludge gasification and solar drying for over 15 years. We are aware of the sewage treatment plants' need to carry out the most efficient management possible form the energy point of view. In the framework of the project Life Dry4gas, we have designed a management model which integrates these technologies and contributes to the circular bioeconomy as well as to the renewable energies' promotion in a sustainable way. We are currently finalizing the economic assessment from which we extract that it is a model that could be replicated in other sewage treatment plants

ANEXPERTPOINTOFVIEW

Frans Timmermans

Executive Vice President of the European Commission

"The recent aftermath of Russia's war against Ukraine has reinforced the imperative to accelerate the transition to clean energy. The sooner the countries manage to diversify their energy sources, improve efficiency and introduce RES, the better! "

The 30th edition of EUBCE

The 2022 European Biomass Conference & Exhibition marks the 30th edition of EUBCE and continues to bring together the biomass community to discuss the scientific advances and innovations in biomass and bioenergy with the aim of advancing research and market uptake.

COP26 highlighted many current and future challenges in which biomass, in all forms and services, will have to play a critical role in the decarbonisation of the world economy.

EUBCE 2022 aims to bring together leading scientists and academics, technology developers, industry representatives, market players and policy makers to demonstrate that sustainable biomass is an indisputable leading renewable energy source. Without its intensified deployment the Paris Agreement targets are simply unattainable.

The opportunities for the bioeconomy have never been better, but at the same time the bioeconomy has never faced so many obstacles and barriers to deliver these innovative technologies to biobased markets.

In an effort to expand the bioeconomy outreach EUBCE has joined forces with the Bio-based Industries Joint Undertaking (BBI JU) and with the Bio-based Industries Consortium (BIC).

Per maggiori informazioni - https://www.eubce.com/programme/

BRANCHES project participates in the 30th EUBCE

Kirsikka Kiviranta from VTT Technical Research Centre of Finland will be presenting the results of BRANCHES project in the 30th European Biomass Conference & Exhibition (9-12 May, online event).

During the BRANCHES project, information of the currently available and innovative bioenergy technologies in agriculture, forestry and rural region have been screened. The practise-oriented knowledge of the most promising and feasible solutions are summarized in the form of Practise Abstracts (PAs). In the context of the BRANCHES project, PAs have been produced related to solid biofuels production, biomass heating and CHP, gasification, biogas production plants and subsequent upgrading to biomethane, biorefineries and related value chains, hybrid renewable energy systems and biomass energy storage. A selection of the produced PAs will be presented at the EUBCE.