

BIOVOICES
POLICY BRIEF
FOR POLICY
MAKERS

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#1

Introduction to the Policy Briefs

The purpose of these four Policy Briefs - one for each quadruple helix stakeholder group (civil society, research, business, policy sectors) - is to present the insights gathered from the BIOVOICES experience - over 70 Mobilisation and Mutual Learning events - in a format that is both straightforward, accessible and usable.

These documents have been developed for active use and exploitation by the key stakeholders of the quadruple helix and all actors working across the circular bio-based economy, in their work and practice to deliver knowledge, best practice and lessons learnt to drive debate, support proactive discussion and collaboration to address the associated challenges relating to the up-scaling of bio-based products (BBP).

The key themes from the Policy Briefs common to all stakeholder groups have informed the development of the BIOVOICES Action Plan for Citizen Engagement which is a framework of recommendations for all stakeholders to consider when designing and delivering their own action plan to drive citizen engagement, advocacy and ultimately action to support the purchase and use of bio-based products (BBP) and services for the benefit of key stakeholders and society as a whole.

BIOVOICES materials to enhance citizen engagement are available to download at

<https://biovoices.eu>

#2

The Policy Context

BIOVOICES has run from January 2018 to April 2021, its start coinciding with the launch of the EC's revised **Bioeconomy Strategy**¹. Throughout the project, the gathering of key insights and actionable knowledge from MML events has been coloured by the constantly evolving nature of the wider socio-economic and policy landscape and in the last year the impact of Covid-19. Due to restrictions imposed by the pandemic, many MML workshops planned for 2020 have been transformed into online events, resulting for many, in an increase in the numbers of participants from a wider range of geographical locations. This responsiveness to changing priorities in each of its partners' territories to maintain relevance has been a key aspect of the BIOVOICES project.

Global economic challenges have provided a constant backdrop to the BIOVOICES project and are reflected in the selection of the BIOVOICES challenges relating to the market acceleration of innovative bio-based products (BBP). The policy background against which the BIOVOICES project has been delivered is outlined here. The update of the EC **Bioeconomy Strategy** published in October 2018 reconfirmed the urgent need for development of the bio-based sector.

“Global challenges like climate change, land and ecosystem degradation, coupled with a growing population force us to seek new ways of producing and consuming that respect the ecological boundaries of our planet.”

The **European Green Deal**² launched by the new EU Commission (EC) in December 2019 aims to drive the transition to a fair and prosperous society, with a modern, resource-efficient and competitive economy in Europe, promoting a new economic action plan to help modernise the EU's economy and draw benefit from the opportunities of the circular economy domestically and globally.

The Green Deal is an integral part of the Commission's strategy to implement the **United Nation's 2030 Agenda**³ and the associated sustainable development goals (SDGs), the COP 21 Paris Climate Agreement⁴ and the other green priorities announced in **President von der Leyen's political guidelines**⁵. Additionally, the **“Decade of Action**⁶”, promoted by UN Secretary-General, calls for accelerating sustainable solutions to all the world's biggest challenges, applying the 'do no harm' principle, which will require honest communication and 360° vigilance against 'unexpected adverse consequences'.

Since 2010, as described in the **Europe 2020 Strategy**⁷, the bioeconomy has been identified as a key element for driving smart and green growth in Europe, aimed at alleviating pressures on the natural environment, whilst creating new business opportunities, employment and growth.

At the European level, whilst a dedicated bioeconomy strategy has been in effect since 2012, it is presented as a 'Communiqué' not as legislative proposal. This strategy was updated in 2018 together with a progress report on implementation (“EC Bioeconomy Strategy,” 2018). The strategy provides a framework for shifting the economic resource base in Europe from a linear model drawing on finite raw materials, to a circular model that focuses on innovative renewable materials from biomass from land and sea as well as wastes.

The bioeconomy already accounts for 8% of the EU's workforce⁸ but modelling has indicated that bio-based industries could create up to 1 million new 'green' jobs by 2030, especially in rural and coastal areas⁹. Nonetheless, the share of the bioeconomy (including energy, food & feed and material applications) in EU GDP is still low, with most employment in low-tech bioeconomy sectors.

1. https://knowledge4policy.ec.europa.eu/publication/updated-bioeconomy-strategy-2018_en#:~:text=The%20update%20proposes%20an%20action,ecological%20boundaries%20of%20the%20bioeconomy

2. https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

3. <https://www.un.org/sustainabledevelopment/>

4. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

5. https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf

6. <https://www.un.org/sustainabledevelopment/decade-of-action/>

the share of the bioeconomy (including energy, food & feed and material applications) in EU GDP is still low, with most employment in low-tech bioeconomy sectors.

The reasons for this are manifold and range from low acceptance of BBPs among customers, to technical challenges with material property requirements, to political frameworks as well as labelling and standardisation, hindering dynamic developments in the bioeconomy. The contextualisation and basis of bioeconomy policy is overall still weak in Europe (Devaney et al., 2017¹⁰). Directives that impact on the depth and pace of bioeconomy development in Europe have yet to be adapted and aligned with the objectives of the strategy, whilst current legislation sometimes even hinders the further up-take of BBP (e.g. EU Waste Framework¹¹). The BIOVOICES project identifies that

“Bioeconomy is a complex and multi-factoral domain and its wide diffusion depends on the active collaboration of a broad range of stakeholders including industry, researchers, civil society and public authorities.”

(BIOVOICES DoA 1.1)

A set of new transformative policies have been recently launched by the European Commission¹² and are planned to support the Green Deal. These include the new EU Circular Economy Action Plan (CEAP)(2020)¹³, which promises to deliver key fixes to legislation in the area of waste generation- and management as well as eco design and obligatory use of secondary materials requirements by 2021/22. The CEAP links with the EC's Bioeconomy Action Plan in two key areas:

- in sustainable production, supporting the bio-based sector in its circularity potential.
- and in the area of food, nutrients and water, where it supports increased shares of extraction of sustainable biomass materials in the EU, building a sustainable circular bioeconomy.

Circular bioeconomy can indeed significantly contribute towards a broad range of EU targets and the UN Sustainable Development Goals (STGs), including climate change mitigation, the circular economy and resource efficiency, environmental protection, creating jobs, growth

and revenue. In particular a circular bioeconomy can create and maintain sustainable economic growth, prosperity and high-value employment in rural, coastal and industrial areas where these are greatly needed, reduce fossil carbon dependence and improve the economic and environmental sustainability of primary production and processing industries.

Examples of other transformative legislation are the **Single-use Plastics Directive¹⁴**, the **'Farm to Fork' Strategy¹⁵**, the **Food 2030 policy¹⁶**, the new **EU Forest strategy¹⁷**, the **new Common Agricultural Policy¹⁸** to name a few. This wide-ranging political vision will have significant impacts relating to the wider deployment of the bioeconomy and the increased development of BBPs, contributing to the modernisation of the EU's economy and providing societal, economic and environmental benefits.

Additionally, the EC Council of Regulation has adopted a regulation, strengthening the intellectual property rights office. The first legislative delivery from the Commissions IPR Strategy of May 2011¹⁹. Here, the EC sets out its new Intellectual Property Rights strategy intended to foster innovation, as well as the growth and competitiveness of the EU economy to include the development of the bio-based sector.

The EC has to date placed emphasis on the development and implementation of bioeconomy strategies at a national level. More recently, the implementation of regionally focused bio-based economies with a local dimension has been encouraged by the EC to support overall sustainability and circularity, including trade-offs, synergies, business models, social innovation and participatory approaches. Insights and actionable knowledge obtained from the BIOVOICES MML events has highlighted the opportunities for regional and mutual co-operation, for example expert clusters which bring all relevant actors together.

All stakeholders have to urgently address global challenges such as climate change, land and ecosystem degradation and a growing population forcing 'demand side', 'supply side', 'multipliers' and the 'supportive environment' to seek new ways of producing and consuming that respect the ecological boundaries of our planet.

7. <https://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>

8. https://ec.europa.eu/research/bioeconomy/pdf/ec_bioeconomy_actions_2018.pdf

9. <https://biconsortium.eu/about/our-vision-strategy/benefits-europe>

10. Devaney, L., Henchion, M., Regan, Á., 2017. Good Governance in the Bioeconomy. EuroChoices 16, 41–46. <https://doi.org/10.1111/1746-692X.12141>

11. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>

12. https://ec.europa.eu/info/sites/info/files/european-green-deal-communication-annex-roadmap_en.pdf

13. https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf

14. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904&from=EN>

Engagement of these stakeholders to participate in systemic change towards a more sustainable global model, promoting growth and development, thus preserving the ecosystem is essential. Opportunities abound for the circular bioeconomy to help meet climate change targets, in a move away from a fossil fuel-based economy.

However, governance of the bioeconomy in Europe currently appears to be fragmented with some of the major policy agendas (e.g. Regional Development, Circular Economy, Climate Neutrality) being insufficiently aligned with the bioeconomy (or vice versa), to support the rapid transition to a biomass-based economy. Stronger alignment and exploitation of complementarities of the bioeconomy with the circular economy would be beneficial to both agendas.

As demonstrated by BIOVOICES MML workshops as well as by a number of studies, awareness, knowledge, and education relating to sustainable production and consumption, are important factors determining behavioural changes that lead to more sustainable lifestyles. Despite the important investments, strategies and action plans implemented at Regional, National and European level, the 2018 revision of the European Bioeconomy Strategy states that “increasing public awareness and knowledge about all areas of the bioeconomy remains a major challenge, which the European Commission aims to address by supporting communication initiatives to raise awareness of the environmental and socio-economic impacts of the bioeconomy and bio-based products, and its benefits, such as more green jobs”. Insights from the BIOVOICES project have identified and confirmed that together with awareness and communication, the need for specific education for the bioeconomy is widely recognized as the sector is growing and will require more new employees to keep growing and innovating.

The current and future situation regarding COVID-19 will require special attention by policy makers in terms of the implications of the crisis for sustainable local and regional development, in the context of climate mitigation, resilience and the circular bioeconomy as a means for stimulating a more sustainable resource base in light of the recovery of the European economy.

The recovery from the economic effects of the

COVID-19 pandemic could provide an opportunity to promote actionable knowledge gathered by projects such as BIOVOICES to contribute to the creation of a more sustainable way of living, to rethink and redesign a more responsible and fair future together. BIOVOICES MML events scheduled post pandemic will reflect this change.

It will be very important to ensure that key recommendations from the BIOVOICES project are made widely available to ensure that the economic, environmental and societal benefits of the circular bioeconomy are pushed to the forefront, in what is likely to be the rush to get the world economy back on track. As there is a risk that ‘non-essential initiatives’ will be forgotten or delayed including major international events such as COP-26²⁰.

As a positive, the COVID-19 experience has focused attention towards the importance of local and regional economies as this is where the circular bioeconomy seems to operate best, as identified during BIOVOICES MML events.

To maximise these opportunities, BIOVOICES advocates that communication and education should be highlighted to raise awareness of **all bioeconomy sectors**, as well as the environmental and socio-economic benefits. The whole range of target audiences – multi-actors need to be engaged and addressed through tailored activities implemented at local, regional and national level.

The BIOVOICES funded experience has resulted in the generation of important insights about effective communication and engagement with multi-actors, ready for implementation to further embed the circular bioeconomy into EU life and livelihoods.

BIOVOICES insights are laid out in four Policy Briefs, one for each of the four key stakeholder groups (Policy Makers, Research, Business, Civil Society), containing Key Messages, the insights on which the messages are built and case studies captured during the project’s MMLs and wider events.

The aim of each Brief is to drive debate and discussion within and between all stakeholder groups to progress and scale up the implementation of the circular bio-based bioeconomy.

15. https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf

16. <https://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=food2030>

17. http://eur-lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF

18. https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en

19. <https://ec.europa.eu/transparency/regdoc/rep/1/2011/EN/1-2011-287-EN-F1-1.Pdf>

20. <https://ukcop26.org/>

#3

The Role of the Policy Maker

In contributing to a circular bio-based economy

The way industrialized societies organize production and consumption, i.e. the linear take-make-discard model, brings us to the verge of overstepping planetary boundaries, putting pressure on the regenerative capacity of the earth's ecosystem and diminishing the natural resource base. All quadruple helix actors (policy, research, industry and civil society) are needed to drive the transition to a circular bioeconomy, fulfilling different roles. In this, national as well as regional and local authorities may assume a manifold role as enabler, promoter and as facilitator of the transition (OECD, 2019) following a vision for a circular bio-based economy that fosters circular product design, promotes uptake of bio-based products and lifestyles among its citizens and aims at reducing, reusing and recycling waste:

- 1.** As enabler, authorities directly intervene through developing strategies and guidelines (e.g. public procurement) and through setting regulations (e.g. legislation) and incentives (e.g. taxation) in support of the circular bioeconomy in its territory.
- 2.** As promoter, authorities implement circular bio-based principles across all government functions (e.g. public procurement, land-use and public asset management etc.), promoting horizontal integration of the topic across departments as well as advocacy for multi-level collaboration both within national multi-level governance frameworks and beyond, at European level.
- 3.** As facilitator, authorities embark on a dialogue with other quadruple helix actors (businesses, researchers and civil society) in the territory (national, regional or local),

taking on the role of a moderator that brings these actors together to boost the bioeconomy, providing a platform, building capacity and raising awareness.

The facilitation function of (local) governments involves the provision of a platform for dialogue as well as the setting and adoption of own- and external agendas and interests. It includes the creation of networks and working with businesses, associations, interest groups, and researchers etc. to stimulate the bioeconomy by facilitating a multi-stakeholder dialogue within the administrative territory (i.e. country, region or municipality/city) that follows a strategic direction.

Relevant areas where (local governments) can facilitate a participatory, multi-stakeholder process include the co-creation of (local) strategies, setting research agendas, establishing networks and working groups, setting-up exchange formats such as between government and industry, creating awareness campaigns and citizen fora, engaging schools and universities, co-creating labels for BBPs and in general, communicating on bioeconomy topics.

#4

BIOVOICES Key Messages

Recommendations to drive dialogue and debate

Government at EU level needs to address market disparity by applying **Regulatory and Demand-based Interventions** to promote the bio-based sector e.g. Carbon Taxation.

Policy Makers should shape regulation to ensure an **Effective Waste Management and Waste Recovery System** to generate consistent feedstock supply at national, local/regional levels.

Government at EU and national level must work with other key stakeholder groups to develop **Common Standards, Labels and Specifications** to build trust and confidence in the bio-based market.

Policy makers must **Identify and Communicate with Appropriate Organisations/stakeholders**, to ensure multi-flow of information on current developments in the circular bio-based economy.

Governments at all levels must work **Towards Vertical Integration** (multi-level governance) to boost engagement between European, national and regional/local policies, initiatives, approaches and methodologies.

Governments at all levels must **Promote Horizontal Integration**, both administrative and organisational for efficient implementation of bioeconomy interventions at all levels to maximise knowledge exchange related to priority policy areas.

Establish **Continuity in Policy Priority** to provide ongoing backing for policies that support the circular bio-based economy, irrespective of regime change.

Policy makers can drive further **Understanding and Adoption of Bio-based Products** by establishing the 'Bioeconomy Story' within the Circular Bio-based Economy context

Engagement by governments at all levels in participatory processes with the **Education Sector** to develop training and capacity building to raise awareness of bio-based sectors.

Increase coordination between governments at all levels for the successful implementation of policies to **Support the development of National, Local/Regional Plans** for system improvement within the circular bio-based economy.

Enable and encourage the **Participation of Citizen Groups**, particularly in the development of regional and local circular bio-based economy policies.

Develop dialogue between government actors and bio-based industries to promote effective deployment of bioeconomic principles in the governmental domain.

Assess the impact, adjust direction and issue revised research calls in response to information obtained from the monitoring of current policies.

#5

Insights relating to Key Messages

Based on evidence collated from BIOVOICES Mobilisation and Mutual Learning (MML) Events at European, National and Regional levels.

At the start of the project BIOVOICES partners agreed on the twelve challenges that need to be addressed to drive development and market uptake of bio-based products. The challenges can be accessed in the Annex on page 18. The challenge or challenges most relevant to each key message and insight are referenced below.

Government at EU level needs to address market disparity by applying **Regulatory and Demand-based Interventions** to promote the bio-based sector e.g. Carbon Taxation

"Behaviour change by all stakeholders essential to increase uptake of BBPs - paradigm shift. In conjunction with disruptive legislation from government. Involve social scientists in change process."

MML event attendee - Research

- Framework conditions should be put in place allowing for greater leeway for public institutions pioneering new and innovative approaches to public procurement regulations and processes to facilitate the sales and production of sustainable and bio-based products.
- Increase innovative public purchase/procurement efforts as an effective way to promote the use of bio-based products due to scale-up potential.
- Identify aspects of existing regulatory and policy framework that can be further developed to support public engagement and public acceptance of the Regional Circular Bioeconomy Strategy (specific financing available for implementation).
- Governments should take an active role in stimulating

the use of bio-based building and construction materials by making non bio-based materials less attractive through a CO₂ tax and/or subsidies for citizens. Lowering the cost of bio-based materials, supporting start-ups and scale-ups.

- At the local level, a local bioeconomy manager (BEM) should be installed within the city administration driving the transition towards a more bio-based and circular city.

"Policy change is essential to move things forward..."

"...Policy must support innovation rather than constrain it."

Input from MML event attendees

Challenges – EU & National Incentives, Increase the Adoption, Realise Standardisation.

Policy Makers can apply regulation to ensure an **Effective Waste Management and Waste Recovery System** to generate consistent feedstock supply at national, local/regional levels.

"The lack of volume of 'raw' material available for retailers wishing to shift to sustainable packaging is one of the biggest challenges – plus the consistency of that supply."

Lead Scientist - Research

- Development of cluster policy as a strategic component of industrial (including waste) policy to support synergies and innovation within the circular economy.
- When it comes to EU waste regulations, restricting the use of waste as a feedstock for other products, or

restricting the import/export/trade of waste across borders, can be a barrier to bioeconomy development.

- Changes in the waste hierarchy (e.g. favouring material recycling for material instead of energy recovery) can lead to conflicts between different stakeholders.
- Conflicts between different categories of stakeholders can also arise when diverting biogenic waste streams from use in power- and-heat generation and composting to bio-based operations for material use.
- The waste hierarchy does not explicitly address biodegradation or composting.

Challenges – EU & National, Incentives; Increase Sustainable 2G Feedstock.

Government at EU and national level must work with other key stakeholder groups to develop Common Standards, Labels and Specifications to build trust and confidence in the bio-based market.

“Standards are needed so that consumers (and all stakeholders) can understand what is meant by bio-based. This will develop trust.”

MML event attendee – Civil Society

- Generate a unique and common European label, which identifies the percentage bio-based component of the product, if it is of sustainable origin and end-of-life treatment.
- For many sections of the public the real problem continues to be the information found on labelling. A confusing label (with no standardised information) means that bio-based products cannot be easily differentiated from non-BBPs. In addition, these products are confused with ecological products by much of civil society, due to insufficient labelling.
- Encourage labelling of regional products to give consumers a quality guarantee that goes hand in hand with the good reputation of the brand and the region.
- Develop a coherent and updated terminology to be used both for labelling and communication activities.
- Creating regulatory innovation sandboxes in order to create more meaningful, effective and close-to-reality standards and labelling.

“In the UK the bio-based sector is underdeveloped due to limited action at government level and confusion at public level. UK Government Policy/Regulation must be supportive and forward thinking to ensure the success of the bioeconomy.”

MML event attendee - Industry

Challenges – Realize Standardization.

Policy makers must Identify and Communicate with Appropriate Organisations/stakeholders, to ensure multi-flow of information on current developments in the circular bio-based economy.

- A connected and coherent “narrative” on the bioeconomy is currently missing.
- To get more acceptance by governments, a lobby network to tell one main story is needed. Currently there are too many fragmented small stories/networks.
- Establish institutionalised exchanges of knowledge between purchasing and expert departments on technical specifications, sustainability criteria etc. via frequent round table meetings.

Challenges – Changes in Purchase Habits; Increase the Adoption.

Governments at all levels must work Towards Vertical Integration (multi-level governance) to boost engagement between European, national and regional/local policies, initiatives, approaches and methodologies.

- There is a lack of inter-governmental coordination and collaboration on the bioeconomy, leading to a disconnect between European, national and regional/local policies, initiatives, approaches and methodologies. feedstock production.
- Increasing trust through clear labelling and standards could be achieved with the involvement of policy makers to support bio-based sectors at regional and municipal level (multi-level governance).
- In order to boost local/regional development it is important to increase the involvement of local authorities in the separate collection of municipal waste.

Challenges – Changes in Purchase Habits; Increase the Adoption.

Governments at all levels must Promote Horizontal Integration, both administrative and organisational for efficient implementation of bioeconomy interventions at all levels to maximise knowledge exchange related to priority policy areas.

“Policies are in place – the challenge is implementation.”

Policy, Principal Research Officer

- There is a disconnect between departmental strategies and operations (e.g. procurement and sustainable development strategies), which deepens the fragmentation of silos in the administration and leads to less effective and efficient implementation of bioeconomy interventions at all levels.
- Increase participation of the administration in promoting the bioeconomy through education and being a point of reference for the use of bio-products.
- Provide a clear framework on how procurement is linked to processes such as Agenda 2030 and Sustainable Development Goals (SDGs) and how it should support them at local/regional and national level.

“There is currently a gap in communication leading to duplication of work.”

Project Development Officer - Research/Education

Challenges – EU & National Incentives; Increase the Adoption.

Establish Continuity in Policy Priority to provide ongoing backing for policies that support the circular bio-based economy, irrespective of regime change.

“Government policy requires flexibility but not to be constantly changing. Policy/Regulation must be supportive and forward thinking to ensure the success of the bioeconomy.”

MML event attendee - Industry

- It is necessary to promote the standardisation of policies on bio-based products among administrations and ensure that changes of government do not hinder

the progression of the bioeconomy.

- Government Policy requires flexibility but not to be constantly changing.
- Policy/Regulation must be supportive and forward thinking to ensure the success of the bioeconomy. Support should include the formation of a defined Circular Bio-based Economy Department involving members from all existing relevant government departments and the appointment of a minister as a ‘champion’ for the bioeconomy/circular economy.

Challenges – EU & National Incentives; Boost Local Deployment.

Policy makers can drive further Understanding and Adoption of Bio-based Products by establishing the ‘Bioeconomy Story’ within the Circular Bio-based Economy context.

“A focus on the circular economy is the right context – with bio-based fitting into that. Let’s manufacture out the waste and deal effectively with the after-life of products – not simple but must be attempted to deal with this challenge.”

Project Manager - Industry

- The bioeconomy needs to be communicated as part of the circular economy more consistently across all government levels, otherwise its impact will remain limited.
- Improve the dissemination of information regarding the opportunities and challenges of the circular bioeconomy among stakeholders at national, regional and local level.
- There is a need for a catalogue of all bio-producers, widely and publicly available.

Challenges – Changes in Purchase Habits.

Engagement by governments at all levels in participatory processes with the Education Sector to develop training and capacity building to raise awareness of bio-based sectors.

“Behaviour change by all stakeholders essential to increase uptake of BBPs - paradigm shift. In conjunction with disruptive legislation from government. Involve social scientists in change process.”

MML event attendee - Industry/Research

- Public kindergartens, schools and universities offer

great potential for awareness raising about the circular bio-based economy that is currently only partially tapped into.

- There can be gaps between governmental strategy and staff capacity and competence on delivery of the topics (in particular at local level).
- Develop school level awareness of circular bio-based economy via National Curricula.
- There is an opportunity to engage with young people who are keen to develop new skills relating to climate and lifestyle change.
- Train quadruple helix stakeholders on how to create a network for local development and valorisation of local resources.

Challenges – Boost local Deployment; Changes in Purchase Habits.

Increase coordination between governments at all levels for the successful implementation of policies to Support the Development of National, Local/Regional plans for system improvement within the circular bio-based economy.

“Local powerhouses are important - link with other powerhouses for a bigger voice. “Stress the regional importance of Local Economic Partnerships to drive economic change.”

MML event attendee - Industry

- There is currently a lack of coordination, integration and synergy exploitation among administration (regional/ local/national) in the design and implementation of policies (rural, industrial, tourism, and culture) and action plans for regional development.
- There is a disconnect between departmental strategies and operations (e.g. procurement and sustainable development strategies), which deepens the fragmentation of silos in the administration and leads to less effective and efficient implementation of bioeconomy interventions at all levels.

Challenges – Introduce EU & National Incentives; Improve the Ecosystem to Enhance Business Cases.

Enable and encourage the Participation of Citizen Groups particularly in the development of regional and local circular bio-based economy policies.

“We need to drive ‘positive collaboration’ and provide opportunities for all stakeholders to present and share experiences.”

Bioeconomy Specialist – Policy/Civil Society

- Promote the creation of a new (participative) governance. Start a dialogue with citizens, policy makers and public administrations.
- There is a need to engage multiple stakeholder groups, bringing the political decision-maker closer to the needs of the citizen, businesses and in general to the needs of the respective local territory.
- Encouraging citizen contribution to the development of effective territorial policies with a bottom-up approach to make concrete legislative proposals.

Challenges – Enhance Local Bioeconomy Strategies & Action Plans.

Develop effective dialogue between government actors and bio-based industries to promote deployment of bioeconomic principles in the governmental domain.

- There is currently insufficient dialogue between government actors and the bio-based industry.
- Extended Producer Responsibility (EPR) (e.g. in the UK) might address some issues with ‘hard to recycle’ materials by making these more expensive compared to ‘easier to recycle’ materials.
- Stakeholders should work with government to transform the regulatory environment.
- Develop a branch network of different providers to improve the information exchange with national governments.

Challenges – Specify Unique Selling Points (USP); Increase the Adoption.

Assess the impact, adjust direction and issue revised research calls in response to information obtained from the monitoring of current policies.

“One major challenge for the development of bio-based solutions is government subsidies, which have created a boom in certain sectors (anaerobic digestion) which isn’t realistically sustainable.”

Manager AD plant - Industry

- Promote evidence-based policymaking by accessing actionable knowledge in the form of data, key performance indicators (KPI) and assessment tools to support the design of effective policies to assess the impact on the environment society, and the economy.
- Assess the effect of government subsidies for bio-based sectors and address any unintended environmental/ other consequences.
- Measure and evaluate the ongoing practical impact of policies supporting bio-based sectors.
- Ensure regional and local authorities have access to appropriate actionable knowledge to support the implementation of policies and initiatives.

Challenges – Introduce EU & National Incentives.

#6

Shared Best Practice Actions

A unique government initiative requires all policy players working in Welsh Government and the Welsh Economy to take the sustainability agenda into account.

The Well-being of Future Generations Act is focussed on seven well-being goals and requires all public bodies in Wales to link into the sustainability agenda, consider **the long-term impact of their decisions**, to work better with people, communities and each other to prevent persistent problems such as poverty, health inequalities and climate change. The Act offers a huge opportunity to make a long-lasting, positive change to current and future generations to:

“Promote the sustainable development principle, in particular to act as a guardian of the ability of future generations to meet their needs and encourage public bodies to take greater account of the long-term impact of the things they do.”

This is a document and initiative with legal enforcement that is unique to Wales. The policy is headed by the Future Generations Commissioner for Wales, whose role is to be the guardian of future generations by assisting public bodies and those who make policy in Wales to assess the long-term impact their decisions have by:

- Highlighting the big issues, challenges and opportunities facing future generations.
- Supporting and challenging public bodies to think about the long-term impact of the things they do.
- Working with others to drive the changes needed.

- Walking the talk – be the change we want to see in others.

Wales is a small nation and during the UK MML held in Aberystwyth it was made clear that Welsh people have better opportunity than most, to engage directly with their politicians and policy makers. Wales is a good example of a region of the UK with a unique identity. Bioeconomy is here promoted among government departments and within the regional context.

<https://www.futuregenerations.wales/about-us/future-generations-act/>

Continuity in policy priority, increased coordination and dialogue between all government levels and bio-based industry

The Ministry of Rural Areas and Consumer Protection and the Ministry of the Environment of the German region of Baden-Wuerttemberg, have jointly developed the state strategy “Sustainable Bioeconomy for Baden-Württemberg”, which was adopted by the state government in mid-2019. Using innovative biological concepts, the province wants to develop production of renewable or recyclable raw materials, reduce greenhouse gas emissions and strengthen biodiversity. Baden-Württemberg region should become a best practice example for a sustainable and circular economy.

There is great potential for the use of by-products and residues from agriculture and the food industry as well as wood from sustainable and domestic forest management to generate energy. Policy focus is also on future-oriented development of existing biogas plants as they offer inexpensive interfaces for comprehensive

and decentralized biomass conversion to a wide range of products such as fibres, platform chemicals, nutrients and energy products. The bioeconomy will also play an increasingly important role in industry and in urban areas of the region. Waste and wastewater, for example, contain usable raw materials that can be recovered. Other major topics are the development of technologies for the biological extraction of inorganic raw materials such as metals, phosphorus and chemicals as well as biotechnological CO₂ recycling to generate raw materials for energy and material cycles - a research focus of the bioeconomy with a view to climate protection.

https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/documents/Bioeconomy_strategy.pdf

Supporting Regions in the design of innovative bioeconomy educational paths

The European Bioeconomy Network is supporting the Friuli Venezia Giulia Region (Italy) in the creation of a regional HUB for Bioeconomy Education. Educational needs (formal education, education of value chain actors, capacity building within the bioeconomy) were identified at a Mobilisation and Mutual Learning workshop (MML) attended by stakeholders from the quadruple helix.

This MML activity established the basis for the implementation of a regional bioeconomy education hub through the identification of:

1. Educational needs based on regional resources.
2. Level and type of education required to nurture a generation aware of the environment (secondary schools to attract students to bioeconomy related careers, vocational schools, university and masters to provide suitably trained workers required by the industry, life-long-learning and on-the-job training to exploit bioeconomy-related opportunities for entrepreneurs, primary producers and companies).
3. Sources of funding sources for leverage.

4. Type of expertise to be provided (at different levels).
5. The facilities and logistics to be planned.
6. Development of an action plan for implementation.
7. Risks/barriers and mitigation measures required.

Inspirational case studies were presented to the participants and the points listed above were used to facilitate discussion. The European Bioeconomy Network facilitated knowledge sharing by involving bioeconomy education experts from the following EU funded projects, BIOVOICES, LIFT, UrBioFuture, Biobridges, STAR-ProBio and the European Bioeconomy University (EBU).



Government legislates to promote the use of bio-based building materials

National government in The Netherlands has set out legislation that permits building plans with a CO₂- emission below a certain threshold. Such legislation enhances the use of plant-based building materials which have negative CO₂ emissions. During a BIOVOICES MML webinar, the Province of Zeeland clarified their experimental role as a launching customer in public procurement to enhance the use of bio-based products in the renovation of social buildings and infrastructure projects, such as the N253 provincial road made with lignin, bio-based road signs.

The renovation of social buildings will be elaborated on in the CBCI (Circular Biobased Construction Industry) Interreg project (<https://www.interreg2seas.eu/nl/CBCI>). CBCI concerns the whole life cycle of construction

and aims to develop an integral approach to circular bio-based buildings (market orientation, tendering, contract formation & management).



Identification and communication for vertical integration

The AlpBioEco project will develop recommendations for action by which the implementation of innovative business concepts in the bioeconomy can be promoted to create new jobs in the Alpine region.

The project is an inspiring initiative focusing on local value chains of Alpine biomass resources and vertical integration. In cooperation with 12 other partners from five countries in the Alpine region, the AlpBioEco project examines value chains of walnuts, apples and alpine herbs with regard to their economic potential. Based on market studies, laboratory analysis and the exchange of knowledge between the various players, innovative business ideas have been developed. To pursue these innovative ideas key players have been identified in the project regions, partners are activated and innovation gaps are identified. This has resulted in the development of at least two specific business concepts for each of the three value chains, which are being implemented and tested transnationally in pilot studies in the Alpine regions.

The results and findings from the previous project phases will be communicated to representatives of all political levels as well as to other Alpine regions.

<https://www.alpine-space.eu/projects/alpbioeco/en/home>

Participatory processes to drive the understanding and adoption of the bio-based sector in cities

The municipality of Växjö in Sweden set itself the challenge from the 1960s to become a fossil fuel free city. This objective was the result of a long-term process, which began when a few measures were taken, leaving a deep impression on the elected representatives, resulting in the development of an energy and then an environmental transition pathway in Växjö. The process was successful due to close cooperation between political, economic, institutional and community stakeholders.

Events, such as the eutrophication of the lakes in the 1960s and the oil crises in the 1970s aroused the interest of the elected representatives and set the whole process in motion. For local stakeholders, restoring water quality was essential to improve the quality of life in the city and once again make the lakes an attractive place for people. The municipal energy company suggested biomass, a locally abundant source of energy stimulating forestry, as an alternative to oil to avoid exposure to the financial fluctuations of the oil market. As a result of this decision, elected representatives noticed beneficial impacts on the local environment.

By 2012, the city had reduced its CO₂ emissions by 41% compared to 1993. Biomass covers 88% of the district heating supply and the share of oil in the energy mix has dropped from 100 to 6% in 25 years. 58% of the energy supply in Växjö is from renewable sources, i.e. 10 points above national average. Between 1993 and 2010, the economic growth rate rose 73%. The city is an acknowledged pioneer of ecological transition and its "green" profile has attracted between 150 and 200 delegations from all over the world. However, the Växjö bioeconomy model is not only based on the utilisation of biomass for energy production but is also aimed at producing a number of additional bio-based products from forestry derived biomass, such as fuels and chemicals, cosmetics, packaging and antioxidants.

https://vaxjo.se/download/18.313cf36515d1bde9ee3205fa/1499862622018/Miljoprogrammet_eng_webb.pdf

Effective waste management systems & horizontal integration

The City of Amsterdam developed a Circular Economy Strategy 2020-2050 which links, in a unique kind of way with the city's dedicated food strategy to reduce food waste and the utilisation of organic waste streams to achieve a more circular urban bioeconomy. . In the food & organic waste streams chain the strategy focuses on short food chains, healthy and sustainable food consumption and high-quality processing of organic waste streams. The focus is mainly on reducing material streams, preserving value and minimising the negative ecological impact of the food supply chain.

A large proportion of Amsterdam's household waste consists of vegetable, fruit, food and garden waste (organic waste). Amsterdam's first priority in the reduction of organic waste is prevention. This waste must be collected separately wherever possible, taking into account the needs of each neighbourhood, based on a socially responsible plan and in cooperation with the residents. Local initiatives such as worm hotels, leaf baskets, local composting and bread baking will be facilitated as much as possible. This waste could also be upcycled into high-grade products.

<https://www.amsterdam.nl/en/policy/sustainability/circular-economy/>

Government responds to demands for Green Public Procurement in Bratislava, Slovakia

Green public procurement can influence demand in Slovakia, but government policy has to reflect the demands of voters, who may or may not motivate them to use green public procurement. For instance, in the Bratislava region, the issue of bio-economy and circular economy is a very fashionable among the wider population, especially the younger generation. This creates 'bottom-up' demand for the use of more environment-friendly products. As a consequence, several municipalities in Bratislava including Modra, took action and applied measures to abandon plastic bottles and cups during their official meetings and replaced them with bio-based alternatives. This action is being promoted as a fulfilment

of the will of the electorate. The City Council has provided an example of best practice for all Slovak cities to follow since they approved the new measures.

The use of disposable plastic tableware, such as cups, cutlery was banned from April 1, 2019, visitors to any cultural, social and sporting event can only take refreshments in compostable materials. The aim of this policy intervention is to prevent the city from continuing to create unnecessary plastic waste.

<https://mypezinok.sme.sk/c/22115473/slovenske-mesto-definitivne-konci-s-pouzivanim-jednorazovych-plastov-na-verejnych-podujatiach.html#f>

In other Slovak regions where these issues are not seen by the population as a priority, the situation is drastically different. As a consequence, policy makers do not treat the implementation of circular bio-based policies as a high priority. Increasing awareness among the general public could generate pressure on government to shift policy priorities.

Use of Bio-based construction materials results in planning bonus

Bratislava will prepare a program of motivation of building owners in the city to carry out the renovation of buildings to a standard exceeding the applicable legal requirements. In practice, this means that the aid will be granted only on the condition that the building is better energy efficient than required by law and regulation. Motivation will be realized through the provision of a tax bonus - a discount on real estate tax. The criterion for granting support will be the result of energy certification according to Act no. 555/2005 Coll. on the energy performance of buildings. Renovated building with the right to support should reach the level of primary energy demand maximum at the upper limit of energy class A1 according to the Decree of the Ministry of Regional Development of the Slovak Republic no. 364/2012 Coll. The amount of the tax bonus will be determined on the basis of a survey and evaluation of the motivations of building owners in making investments in the renovation of buildings.

This incentive scheme will be complemented by educational and awareness-raising activities, the concept and method of implementation of which will be created within the EU-GUGLE project (Measure 1.4.A). The expected result of the implementation of the incentive scheme is the achievement of additional energy savings of 4% from KES for heating and DHW in tertiary buildings and residential buildings compared to the implementation of basic measures in these sectors (Measure 1.2.B, Measure 1.3.A). This result assumes the implementation of more energy efficient measures in approximately 10% of renovated buildings, 1.5% of the total number of buildings in the city. The cost of the measure will then depend on the amount of the tax bonus. In the case of a 30% discount on real estate tax, it will be a cost (reduction of tax revenues) in the amount of 1.5% of real estate tax, about 397 ths. EUR in 2020. In the “Sustainable Energy Action Plan” of Bratislava (Source: (page 34):

https://bratislava.blob.core.windows.net/media/Default/Dokumenty/Str%C3%A1nky/Akcny_plan_oficial%20material.pdf

In the minutes from the City Council Assembly Meeting held in June 2020, (<https://zastupitelstvo.bratislava.sk/data/att/47489.pdf>), it is noted that

“The implementation of the measure depends on the financial capabilities of the city, but currently it is not being implemented due to budgetary constraints.”

Andalusian Bioeconomy Strategy - an example of regional policy best practice

The Andalusian Bioeconomy Strategy, a regional strategy that will direct actions in the set of activities that make up the three basic segments that make up the value chains of bioproducts within a framework of sustainable use of the resources. Sectors included are agriculture, forestry, fishing, food production, paper and pulp sectors, as well as parts of the chemical, biotechnology and energy industries.

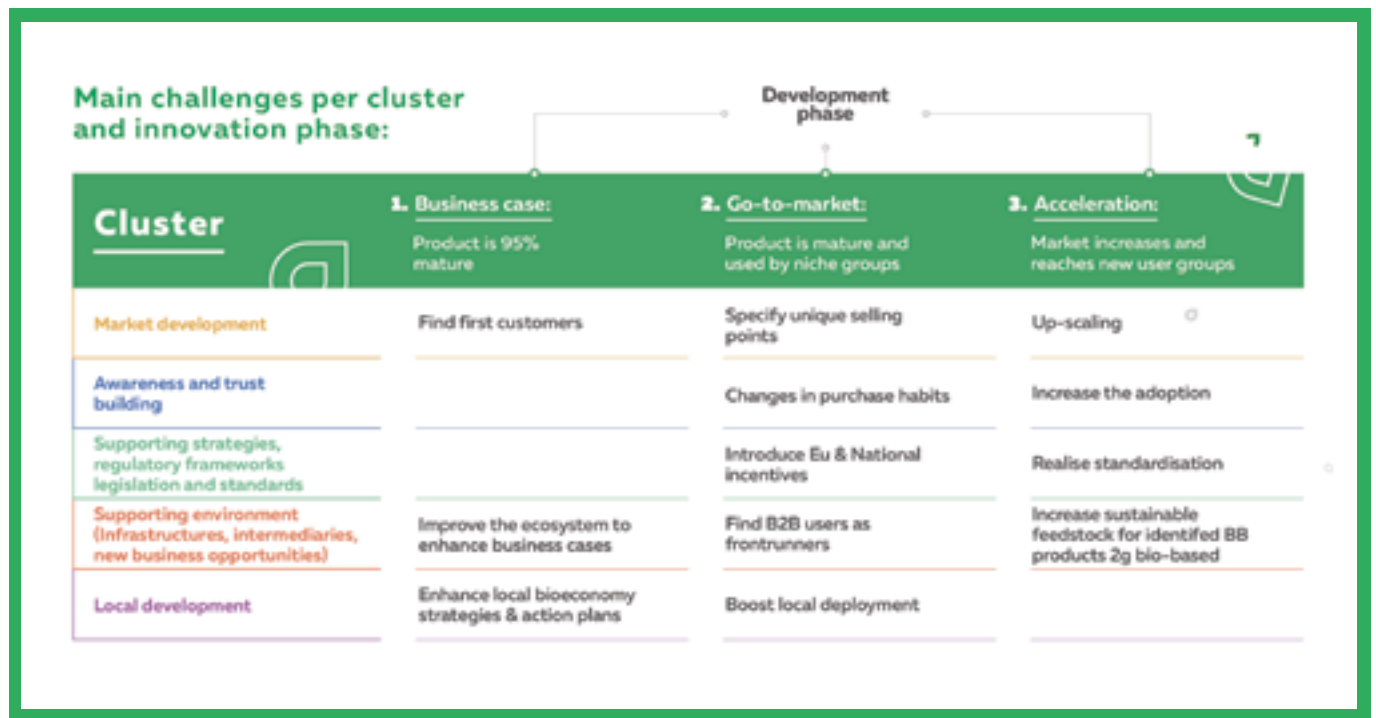
The following three points highlight why the Andalusian Bioeconomy Strategy provides a best practice example:

1. It has been developed as a downstream process taking into account the European Bioeconomy Strategy and the Spanish National Bioeconomy Strategy.
2. All the actors of the value chain (researchers, companies, farmers, policy makers, etc) have been involved in the development of the Andalusian Bioeconomy through the creation of operation working groups.
3. An action plan and a budget has been linked directly to the activities of the Strategy.

<http://www.bioeconomiaandalucia.es/en/la-eab2030>

Annex

The 12 Challenges identified by BIOVOICES to contribute to the market uptake of BBP





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