



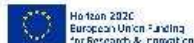
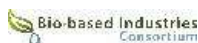
H2020 Work Programme

D 3.6. Report on WP 3 Stakeholder Workshop

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This document is the BIObec project (contract no. 101023381) corresponding to D 3.6 (M24) led by Food & Bio Cluster Denmark. This report aims to report on the WP 3 stakeholder workshop held in Tralee, Ireland, June 27th, 2023, and the local processes towards the BBECs, including local stakeholder engagement activities in preparation of the plenary workshop.

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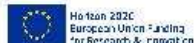
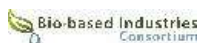


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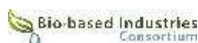


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Acronyms and abbreviations

AB	Advisory Board
BBEC	Bio-Based Education Centre
DOA	Description of the Action
EC	European Commission
IRWG	Implementation and Replication Working Group
MOU	Memorandum of Understanding
SC	Scientific Community
WP	Work Package



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Executive summary

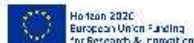
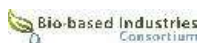
This report summarizes the iterative process of creation of Bio-Based Education Centres (BBECs) in six regions. The co-creation with massive involvement of local Stakeholders and IRWG members is a prerequisite for the creation of sustainable BBECs.

This report focuses on the description of the process, while the contents and the outcomes are described in deliverable D3.5.

The nature of the bioeconomy is cross-disciplinary and cross-sectorial and this involves naturally a number of traditional educational institutions with a view of future needs.

The process had a climax during the Stakeholder workshop held in Ireland in June 2023 where the Advisory Board (AB) and the Implementation and Replication Working Group (IRWG) contributed to the sharing of experiences from the preparation processes in each region.

We are now at a stage where 'real' BBECs are prepared for in each region, but not founded nor financed yet and this is the coming challenge that the process of roll-out and replication of the ideas from the project will continue during the months and years to come.



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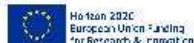
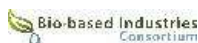
1. Introduction

The BIObec project's work towards the establishment of a regional setup for a future BBECs' implementation and replication has been based on several methodologies combining deskwork with targeted consultations with IRWG members. During almost 24 months, the process has been developed effectively – but in diverse ways – in the 6 involved regions. It is obvious, that the conditions behind and the institutional and legislative setup in the project partnership give different opportunities and restrictions for each region.

The BIObec project is a transnational feasibility study and very valuable contacts and experiences have been shared across countries. Even if the sustainability of the planned BBECs can only be verified in the future, when the implementation and replication phase will provide concrete data to be analyzed, BIObec will provide the stakeholders involved in the BBECs with tools for the implementation and replication and will make sure that they will be able to effectively implement the business model within their local realities.

This report builds on the Business Canvas Models formulated in WP2 and the parallel work in D3.2 on the Governance of the centres, D3.3 on the financial models and budgets of the BBECs and D3.4 on the foreseen activities of the BBECs. The main conclusions on sustainability are given in D3.5, while here we report about the processes of stakeholder involvement. Based on the work so far, we expect that 'real' BBECs will be started during the next 1-2 years. A conclusion from D3.5 is that the project has experienced that we need locally adapted BBEC hubs, to be able to become realized in the near future.

This report will describe the more specific co-creative process in WP3, originally inspired by Delphi Methodological concepts but then developed in tailored stakeholder interaction approaches, in the six regions towards establishing BBECs and to complete the picture of the process of stakeholder involvement we will include points from the phases in WP2 as well.



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2. Methodology for the analysis

According to the DoA, the objective of WP3 is to analyze the feasibility of the BBECs also by combining the Delphi method and qualitative, stakeholder-based discussion data, collected during a dedicated workshop. The intention was to follow a common overall methodology for each of the six target regions, but we have experienced that the educational systems and the traditions for cooperation, financing and governance vary considerably, depending on regional specificities. Therefore, the development of locally adapted BBECs was identified as the most effective solution to pursue.

A focal point for the overall project is the co-creation process. In Task 3.1 the methodological outline was stipulated working in parallel with Task 3.2, 3.3 and 3.4. To ensure its implementation, an important moment was the Consortium meeting in Seville in January 2023 (M17) and finally the dedicated stakeholder workshop in Tralee on June 27th, 2023 (M 22), in which members of the Advisory Board and IRWG members also participated.

For this reason, the Delphi methodological concept was tailored to adapt to the specific situation and solutions needed for each local BBEC. We can say we followed six local interpretations of the Delphi methodological concept to pursue the common goals. Each region has delivered a short summary of the locally adapted processes that will be summarized in the following section. The main deviation with respect to the classical Delphi method is due to the fact that the stakeholders were already in touch and actually collaborating in the design of the Centres, so the process went through different round of consultation partially individually and part collectively, following the dynamic of the development of the concept of each Centre.

Consistency has been reached, from rather diverse points of departure and the business plans developed in the six regions vary considerably depending on the scope and the local needs and opportunities. The process in each region can be found in section 3.

The stakeholder workshop is the final part of the sustainability assessment. Indeed, IRWG members and other local stakeholders were in connection with the project team and among themselves and were already deeply involved in the discussion about the centres' design. At this stage of the project where task 3.5 has been implemented, the most effective option was to build on the local Delphi processes and share and discuss the six regional 'results' at the Stakeholders workshop.

The workshop had good attendance and for the first time, the 6 regional BBECs stood out clearly and many aspects of adaptation and implementation were shared. It is not easy to have the exact same group of stakeholders meeting several times locally and only a few of these are able to join international stakeholders' meetings.

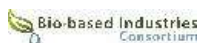


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A synthesis of the lessons learned on sustainability was provided at the workshop, where also IRWG and Advisory board members were invited. The sustainability discussion required different approaches and built on different issues depending on local context, level of maturity and main sectors addressed.

The discussion, besides the presentation and comparison of business plans, was focused on the potential for implementation and likely status of the centres in 1 to 5 years, to address the sustainability issue from a practical perspective.



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3. The process in each region

Basically, the Delphi methodology requires several rounds of discussions and feedback and this has been done in the most logical way in each region. The steps are summarized in Table 1.

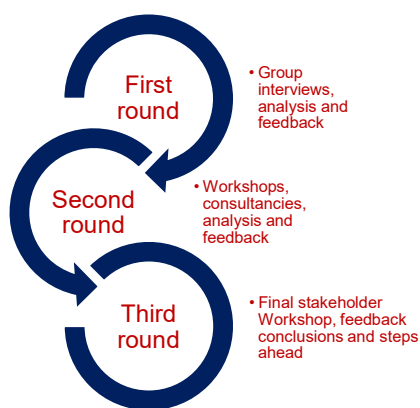
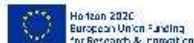
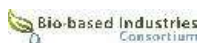


Figure 1. A generalized illustration of the Delphi process

As we can see in Table 1, the six regions have had different ways to involve the IRWG and other stakeholders in the local process. The Central East and the Mediterranean have had many challenges due to linguistic issues as well as different traditions and opportunities in the countries.

Also, the IRWG is meant to be a dynamic group and the members partially changed during the project, especially in smaller regions. Nevertheless, BBEC leaders ensured the participation of a consistent number of representatives of IRWG members per each region in the workshops organised.

We can see that the interpretation of the Delphi methodological approach has been diverse, but we can also see (D 3.5 and section 4) that major results have been achieved, which is the main outcome.



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Table 1. The processes in each country towards BBECs (see also Annex 1)

Region	Stakeholder group interviews	Individual consulting with stakeholders	Co-creation workshops	Other remarks
Finland	several key actor meetings in Teams (eight key actor organisations)	few meetings with the University of Eastern Finland's and Business Joensuu's management level three educational organisations	One related to research on business processes One webinar on future thinking and foresight issues One planned to foresight activities that could be offered through the BBEC	Several smaller meetings Teams-channel for the key actors Participation in a student job fair a website for the BBEC in which the platform is tested
Central/ East Europe	3 national group interviews	A detailed Center Readiness Level Framework survey was also carried out among the stakeholders	3 online (national) and one international physical workshop	Very challenging with three countries A consultation chart as well as the developed material was shared among stakeholders
Ireland	Initial focus group survey/questionnaire responses from Irish bioeconomy stakeholders Mapping of educational and skills gaps	MTU and IBF have a good working relationship and good relationships with other stakeholders in the Irish bioeconomy field.	Business Model Canvas co-creation regional workshop	Internal meetings and workshops within and between MTU and IBF throughout the process; multiple workshops with the same pool of stakeholders can be quite challenging
Denmark	One group interview with 5 key stakeholders (IRWG members)	14 individual meetings to supplement the co-creation workshops and the process	4 physical workshops (15-20 participants each) in total (2 in WP 2, one in Wp 3 and one in WP 4).	Some IRWG members have participated in all workshops, a few stakeholders only in one or two
Mediterranean	five BIObec's partners, namely UNIBO, CTA, FVA, UAB, and CNR. Correspondance between partners and IRWG members	Internal survey within each partner's organisation.	Workshop to plan activities and IRWG engagement; three online IRWG meetings in Italy, one for Spanish IRWG	Outputs of these activities were exchanged and commented on through emails between Italian and Spanish partners.
German	two different online interview sessions with 6 participants	Interviews with specific partners	Two workshops and internal workshops	Process lead by the University of Hohenheim in the context of Bioeconomy

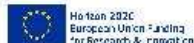


4. The stakeholder workshop in Tralee

The work carried out under the previous tasks in WP3 was dedicated to analyze the BBECs following three 'separate' themes: Governance, Economy, and Activities merged in six 'full business plans which were reported in D3.5. During the Tralee Stakeholder workshop held on June 27th, 2023, each region presented the 'complete' drafted BBEC Business Plans from D3.5, including comments on the processes and the regional results. Also, a short risk analysis for implementation was provided for the majority of BBECs.

During the workshop – which took place in hybrid mode–few experts from the Advisory Board and representatives of the regional IRWGs participated, and all 6 BBECs leaders were asked to give a short coherent presentation allowing time for discussions to collect inputs from the external stakeholders and experts.

Below we present a few highlights from the presentations and the discussion at the Stakeholder workshop, but for deeper insight into each BBEC we refer to D3.5 where all BBECs are more extensively described.



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Agenda

AGENDA plenary meeting

DAY 1 – JUNE 27		
09.00-09.15	Opening of the meeting: overview of the agenda and time schedule	Davide Viaggi, Coordinator University of Bologna
09.15-09.30	Opening for Advisory Board participants to join in: welcome to AB members. 2 mins presentation each	Davide Viaggi UNIBO
09.30-09.45	Introduction to the morning session and short intro to BIObec project	Davide Viaggi UNIBO
09.45-11.15	Stakeholder Workshop on 6 BioBECs Centres: Short intro by Knud (5-10 min) on the process 3 first cases: Business plans of Finnish, Irish and Eastern European BioBECs Centres (each of these with max 10 min presentation) Reflections/comments/Questions by the AB members	Moderated by Knud Tybirk FBCC
11.15-11.30	Coffee Break	
11.30-13.00	Stakeholder Workshop on 6 BioBECs Centres: Next 3 cases (Mediterranean, German and Danish, 10 min each) Reflections/comments/Questions by the AB members Common discussion/reflections: What are the challenges/opportunities with these 6 BioBECs Centres discussion of the longer-term sustainability options	Moderated by Knud Tybirk FBCC
13.00-14.00	Lunch Break	
14.00-14.30	WP3 – Internal reflections on the inputs Sustainability discussion continued Process towards Deliverable 3.5 and Deliverable 3.6	Moderated by Knud Tybirk FBCC

Examples from the presentations

The **visions** are now formulated clearly in most cases (the German, Fig 2)



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Ownership of the institution: The BBEC as part of the university

Vision of the BBEC:

The German BBEC will serve as **hub for connecting actors between institutions and networks**. It will **support the creation and adaptation of educational offers** by developing a flexible, inter- and trans-disciplinary, tailored, practical-oriented and regional-driven framework for sustainable Bioeconomy at the different educational levels and offerings.

As part of the University of Hohenheim, the **main target group will be students from bachelor and master programmes**. However, professionals and practitioners in the different fields of bioeconomy, as well as biobased companies, governmental institutions and general public of the region of Baden- Württemberg will be targeted through the different activities of the Centre.




Figure 2 Vision of the German BBEC

In some of the cases the **governance structure** is already quite clear (Fig 3) where in other cases this is still to mature.

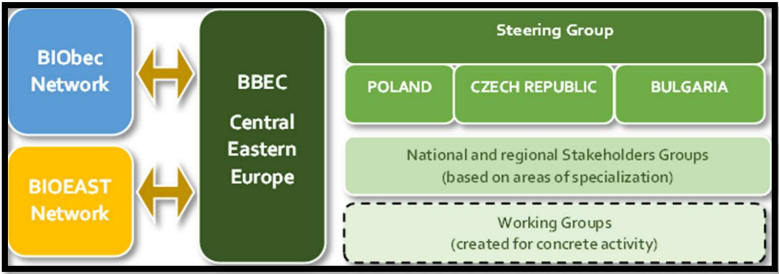
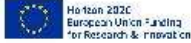


Figure 3 Suggested governance structure for BBEC covering three countries in Central East Europe

In some cases, the **value proposition** may seem rather simple (Fig. 4)



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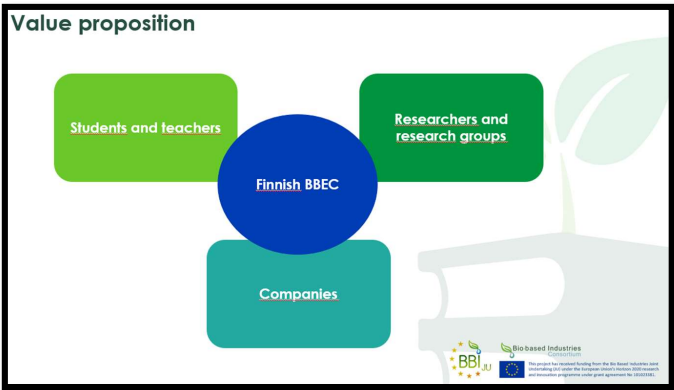


Figure 4 Finnish BIObec between science, university students and companies

In other cases, the BBEC has to find a role as a flagship destination to improve skills and training in a **very complex Bioeconomy network** like in Ireland (Fig 5).

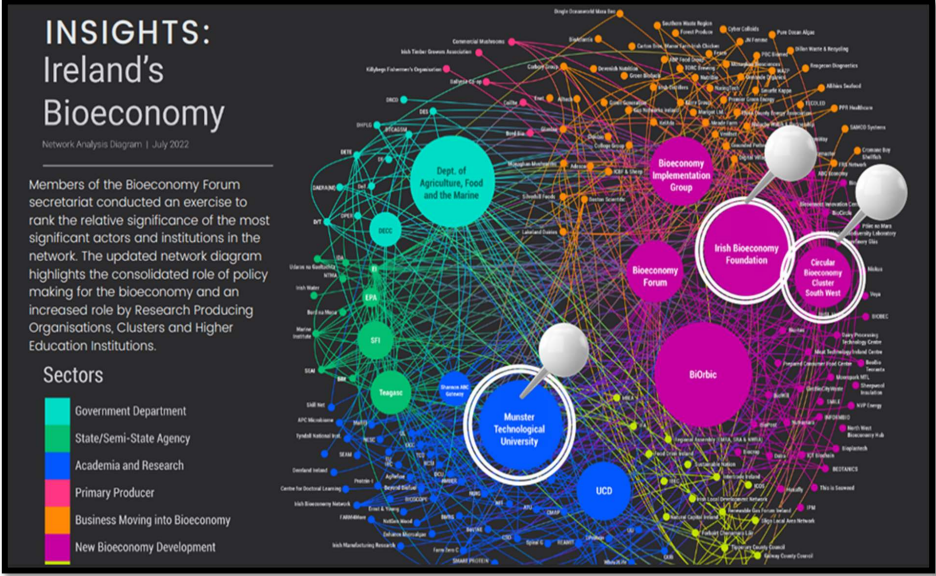


Figure 5 Irish bioeconomy network

The **economic and financial support needed** for each centre was described for each case and only a few have a positive balance the first years.



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The Mediterranean Biobased Education Centre/6

The financial projections

CASH FLOW			
Year	Costs	Revenue	Revenues - Costs
1	239,600 €	180,000 €	- 59,600 €
2	186,600 €	185,000 €	- 1,600 €
3	201,100 €	195,000 €	- 6,100 €
4	201,100 €	195,000 €	- 6,100 €
5	201,100 €	195,000 €	- 6,100 €

Figure 6 The financial balance is often not found yet

Still, we can foresee **different risks** to establish the BBECs



The Danish Biobased Education Centre/8


Risk Assessment:
The main risk is probably **the start capital**.
The process of raising capital will enter a new phase in Months 24-30 of the project's lifetime. We need start- capital for the first 2-3 years



The second obstacle to sustainability is **the financial model**.

- Can we establish a model for developing new courses that work in cooperation with educational institutions?
- Will the Biobased business pay for the courses?? (compared to free public educations)
- Furthermore, the challenge is to finance the BBEC personnel based on the income from try-out courses.

A third obstacle is also **defining the courses that will attract privately funded 'students' and reflect the need of the bio-based industry**.

- An important part of the customers should/can be vocational and high school teachers on life-long learning courses as part of their employment.
- And when this is running, how can we internationalize the BBEC activities?



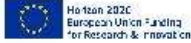



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Figure 7 Danish BBEC Risk assessment

Discussions and feed back

After a general overview of the process in WP3, the main focus was on addressing the feedback received to the business plans of the 6 BBECs (Finnish, Irish, Central-Eastern



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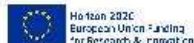
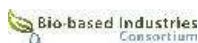
Europe, Mediterranean, German and Danish), followed by a common discussion which involved also AB and IRWG members.

Main Points from the discussions and comments from IRWG and AB members during and after the 6 case presentations

- Market and Gap Analysis has shown that there is no over-arching mapping of bioeconomy integration into education, training and skills curricula in most countries.
- Open process and cooperation are very important to gain trust, MoU should be agreed upon from the start, or later.
- Paid technical mentoring and expert consulting is seen as a potential source of income in some countries.
- Partnerships and alliances can and should be found with 3rd level educations (universities etc.), VET institutions, the Bio-based industry, the relevant government bodies, and the general public.
- The Finnish and German BBECs have an agreed set up at the universities targeting students and reaching business
- German BBEC will also reach out to farmers and kids as well as public media.
- Also, informal education was mentioned to be very important and should be considered.
- Tutoring the young academic teachers is important.
- Internships were mentioned as a tool in several BBECs.
- The Mediterranean BBEC is planned to be only virtual, but has a complicated governance structure, probably starting as an association.
- In some BBECs general courses and very specialized tailor-made courses (e.g. for a large company) on bioeconomy are planned
- Important: the partners should spend more time on risk assessment, in order to define alternative plans.
- strengthen communication with nice tools, targeting also non-academic public.
- We are sure that the co-creative process will result in something different in the end from what has been planned. The most important aspect is that we finally reach the result of implementing a locally adapted and sustainable BBEC.

An AB member commented during the workshop that the quality of informal education is quite important, especially in primary-level schools. In her opinion, the key concept should include "Teaching the teachers".

Considering the main challenge of giving continuity to the centres after the end of the project, it is necessary to strengthen cooperation between different actors at different levels in a strategic way, with a balance between regional and transnational players. It is also crucial to deeply understand the needs of the companies and to respond to the challenges, especially in the regional emerging markets in the bioeconomy.



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Looking at the future, each centre will probably change following different needs. This is an added value; it means to produce different models to valorise. As the replication will be focused on methodology, results will arrive at a vocational and academic level. The next main related action is the Capacity building workshop.



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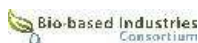
5. Conclusions and recommendations

The iterative process during WP2 and WP3 has led to significant progress in establishing BBECs in the 6 regions. As the BBECs do not exist yet there are also quite a lot of uncertainties that have to be overcome – from the regional needs, financing, and organisation to the specific activities in each BBEC. Indeed, also the organisational setup must be tackled, where the Finnish and German cases seem quite straightforward with a clear university interest.

To be effective in the process, the exercises carried out in the WP in each region reveal limitations and challenges to be taken care of. While the info in each Business Canvas Model produced about governance plans, economic feasibility, learning programs and overall sustainability provides realistic estimations, this can only be regarded as a basis for the actual implementation process, which will require further specification and potentially important deviations can occur.

The process has been very valuable in all regions and the stakeholder workshop gave insights and inspiration to and from AB and IRWG members, as well as between the BIObec project's partners covering the role of BBEC leaders. We are now at a stage where BBECs are prepared for implementation but not founded nor financed yet and this is the coming challenge that the process of building the local BBECs will continue during the months and years to come.

The iterative process that has been fulfilled inspires the roll-out and replication work to be carried out in WP4.



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Annex 1 The adapted Delphi processes in the stakeholder's workshop in the six regions

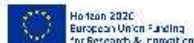
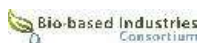
Kommenterede [DV1]: I would add other annexes with the individual reports collected by BBEC

The Finnish BBEC

Description of the BBEC process

Finnish BBEC

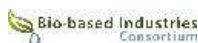
- Several different meetings:
 - o Meetings with the key actors
 - Throughout the BBEC development process we have organised several key actor meetings in Teams. We have invited eight key actor organisations to the meetings.
 - The meetings have entailed several different topics e.g., general concept of the BBEC, updates in the BBEC development and financial and governance structures.
 - o Strategic meetings in management level
 - We have organised few meetings with the University of Eastern Finland's and Business Joensuu's management level to discuss the need for the BBEC. It is important to gain support from the strategic/managerial level to develop and establish the BBEC. This way operational level can be bound to the BBEC activities better.
 - o Meeting with educational organisations
 - We met representatives from the three educational organisations to discuss the need for collaboration and how the BBEC could support this.
 - o Other meetings
 - Several smaller meetings have been organised with e.g., the possible coordinator organisation (Business Joensuu) and other relevant actors.
 - We have wanted to provide as much information as possible to the possible coordinator of the BBEC development while also gaining important input from them so that the process of taking lead of the BBEC would occur smoothly.
- Teams-channel for communication
 - o We have created a Teams-channel for the key actors in which information, minutes of the meetings and other materials are provided.
- Workshops
 - o We have organised three events in the light of developing the BBEC and its special features as well as marketing it to a wider audience.
 - Two workshops of which the first related to research to business processes, and the second will relate to foresight activities that could be offered through the BBEC (will be held in September).
 - One webinar on future thinking and foresight issues.



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- Overall, these topics are promoted through the Finnish BBEC in addition to other services.
- These activities have been supported by some other relevant projects.
- Job fair for students
 - We participated in a student job fair at the end of year 2022, where companies were representing themselves for the students.
- Website development
 - We have created a website for the BBEC in which the platform is tested. We have gained feedback from our key actors and modified it accordingly. In the future, this platform could function under the coordinator organisation whereas it is now under the domain of University of Eastern Finland.



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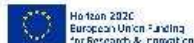
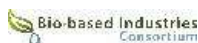
The Central European BBEC

BBEC CENTRAL EASTERN EUROPE – THE SUMMARY OF DEVELOPMENT

The first and extremely important step in creating a framework for BBEC Central Eastern Europe (BBEC CE) was to mobilize the existing network of contacts and invite them to participate in the Focus Group Interview. The main objective of this activity was to initially identify the needs and expectations of the future center. In this initial phase, each of the four BBEC CE pilot partners conducted their own **stakeholder group interview** (Poland 14.10.2021; Stakeholders from science, academia, SME, NGO: Polish Chamber of Commerce for Sustainable Development, State College of applied sciences in Skierniewice, Klaster LifeScience Krakow Foundation, Warsaw University of Life Sciences, EPRD, Mikrobiotech, Polish Federation of Food Producers Association of Employers, Center for Preclinical Research and Technology, Association for Integration and Development, Medical University of Warsaw, National Center of Agriculture Education). It was important to get to know the needs and expectations from different parts of Eastern Europe in order to get a more complete picture of the entire macro-region. Already at this stage some important elements have been diagnosed. They became the basis for developing the framework of BBEC CE. Stakeholders mentioned key sectors to which special attention should be paid (production of biomass in agriculture, forestry and the productivity of both inland and marine waters). It was also pointed out that bioeconomy also applies to other sectors. The importance of raising awareness of the bioeconomy at all levels was strongly emphasized. Many voices pointed the lack of knowledge among decision makers, industry and other actors. The lack of a strategy and a coherent vision of development for bioeconomy was also emphasized.

As a next step, each partner organized a **regional on-line workshop** to further consult the remarks and conclusions (Poland 11.05.2022, Czech Republic 02.05.2022, Bulgaria 29.04.2022). Stakeholders:

Trakia University, BAUN, COMU, University of Pannonia, BIA, Fortes, Phasegrowth, Kielce University of Technology, Kielce City Hall, Entrepreneurship Office, Institute of Environmental Protection, University of Agriculture in Krakow, The Institute of Sustainable Technologies, University of Warsaw, Center for Preclinical Research and Technology, ERPD, Inneco, Agricultural Institute of Warsaw University of Life Sciences, Institute of Experimental Medicine. During the workshops it was emphasized that most efficient education forms for the SME's are the practical case studies, workshops organized in a peer review style. The fact that the bioeconomy is still a new phenomenon causes many definitional problems (e.g. industry and decision makers have different understand of biomass). The huge role and potential of the region, which can affect many spheres of economy and life, was highlighted. Attention was drawn to the need for international cooperation between various entities in order to share knowledge and develop technologies and networks. With regard to the structure of the future center, it was pointed out that the entire process should be set in stages. It should start with a non-formalized cooperation based on projects and external funding. It was also emphasized to use the existing institutional, research and



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personal potential and to focus on selected areas of bioeconomy. All the work was summarized and presented at the Pan-European Workshop to the entire Consortium.

Having basic knowledge about the needs and expectations, during the next activities, we analyzed good practices and examples from Western European countries, where the level of knowledge about bioeconomy is much higher. This was a great inspiration for further conceptual work on the future BBEC CE. A detailed Center Readiness Level Framework survey was also carried out among the stakeholders. The actors were asked to indicate their specialization, their potential in terms of staff, infrastructure, and networks. Stakeholders could also indicate what role they would like to play in the future BBEC CE. All the surveyed entities showed interest in joining the work of the centre and contributing to their potential. The survey provided interesting material showing the great potential of individual actors and again emphasized the need for an entity that would support cooperation between entities in the regional, national and international dimensions.

With a large amount of data already collected, the Business Model Canvas (BMC) method was used to describe on one page the key findings showing the BBEC CE business calculations. A draft was developed and consulted internally among the BBEC CE pilot partners. After internal consultations, it was time for the **Co-creation workshop** during which BMC was discussed with stakeholders from various Eastern European countries. The meeting was international and was conducted in English on 31.08.2022. Stakeholders: Trakya University, BIOEAST HUB CZ, Regional Business Chamber of Moravian Cities and Regions, Moravian Private Research Institute, BUSINESS E-INCUBATOR GO-UP, Stara Zagora Regional Economic Development Agency, Klaster Lifescience Kraków, Jagiellonian University in Cracow. This provided a unique opportunity to start an international discussion on the business model. Comments were collected and the BMC was updated.

The next step was to further analyze the external environment of the center and put in the Porter's Diamond scheme. The key step that brought us closer to creating the BBEC CE model was the development of the first version of the Key Activities Table. The table contained the most important activities that the center should perform. It was a synthesis of previous findings and dialogue with the stakeholders. Thanks to the created table we were able to describe the purpose of these activities, target groups, KPI's or time horizon. We have obtained a specific vision of BBEC CE, which could be further refined.

Further on a methodology was developed to create a governance plan and a financial plan of BBEC CE. The planned activities were the starting point to select the appropriate management structure based on good practices and already existing centers. The analysis allowed to indicate the key features of the future BBEC CE and made it possible to match the activities with functioning institutions. The planned activities have been divided into specific types of costs (purchase of equipment, events, travel, salaries, expertise, etc.), which were necessary in order to achieve the assumed indicators of BBEC CE's actions. The costs were estimated based on market

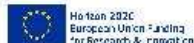


prices and partner's experience. Having planned the number of individual activities and unit costs, we were able to estimate the BBEC CE operating budget in a 5-year perspective. External sources of financing were also mapped and preliminary revenue streams were indicated, which allowed for the development of cash flow.

The process of consulting the developed material among stakeholders has been initiated. A summary of the BBEC CE concept was developed, which contained key information about the center, including mission, vision, goals, structure. A consultation chart was also shared with the actors. They could submit their comments on each part of the concept. The Key Activities Table was also shared with the stakeholders. The entities had the opportunity to mark in which activity they would like to be engaged. Integration of all comments led to the development of the final BBEC CE framework.

Few conclusions and lessons learned:

- BBEC should closely cooperate with other bioeconomy initiatives in the macroregion (e.g. BIOEAST, CEE2ACT)
- BBEC should be developed in stages, from a soft partnership (based on MoU) to an independent legal entity
- BBEC should be concentrated within one country (there is too much diversity in the macro-region), but must be open to international and interregional cooperation
- BBEC must follow the changing situation in the economy, policy and legislation related to the bioeconomy (especially should support the process of development of the national bioeconomy strategies in the macroregion)



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The Irish Case

Participants:

The Irish BBEC development was undertaken by partners MTU and IBF. Both partners are involved in growing the Irish bioeconomy and have drawn on extensive networks across Ireland to provide input into the BBEC - across education, research centres, enterprise/clusters, industry, development organisations and government departments. MTU and IBF collaborated on BIObec workshops to ensure that all bioeconomy stakeholders were represented at the workshops and their suggestions were incorporated.

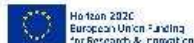
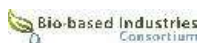
Irish Bioeconomy Foundation (IBF) is a bioeconomy association and innovation cluster with over 20 members including corporations, SMEs and third-level institutions. IBF is in the process of developing pilot-scale facilities at the National Bioeconomy Campus in County Tipperary, Ireland which can be utilised in future BBEC activities.

At Munster Technological University (MTU) the team involved was CIRCUBIO which includes researchers across a wide range of bioeconomy fields. *Circular Bioeconomy Cluster South West* operating from MTU Kerry campus gave direct exposure to the point of view of bioeconomy businesses. MTU are also part of the *Irish Knowledge Centre for Carbon, Climate and Community Action (IKC3)* which is directly involved in building education & skills programmes to enable and support society adapting and transitioning to a decarbonised environment. This experience in education and skills provided valuable input into the Irish BBEC.

Process:

The process of development of the Irish BBEC included:

- Initial focus group with attendees recommended from MTU/IBF stakeholder network
- Obtaining survey/questionnaire responses from Irish bioeconomy stakeholders
- Desk research on previous and current projects and best practice cases
- Development of *Centre Readiness Level Framework Survey*
- Business Model Canvas co-creation regional workshop
- Service Offering, Financial Plan and Governance Plan development and streamlining into a final Business Plan through consultation within and between MTU and IBF
- Internal meetings and workshops within and between MTU and IBF throughout the process and consultation/discussions with bioeconomy stakeholders both formally and informally
- Communication of BIOBEC project within MTU, IBF, nationally and at an EU level via other project interactions and events
- Participation in EU partner meetings and consultation/collaboration with other EU partners



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What worked well:

Work Package 2 involved the following:

- **D2.1 Report on conceptual and operational framework for design of BBECs.**
This report includes two major pieces of work:
 - A comprehensive compendium of EU & Global **best practice cases** was compiled
 - Following analysis of the best practice cases, a **Centre Readiness Level Framework Survey** was developed to create a set of detailed profiles.
- **D2.2 Report on Regional BBEC Business Models and Governance Structures.**
Once each partner had completed the **Centre Readiness Level Framework Survey**, this generated a detailed profile of each BBEC location. From this profile and subsequent co-creation regional workshops, a **Business Model Canvas** was produced for each BBEC.

The 3 bodies of work within these deliverables: the compendium of best practice cases, centre readiness survey and business model canvas should be noted as very positive outcomes and key to both current pilot BBEC development and future BBEC replication plans.

Feedback on the process and recommendations for replication:

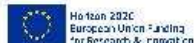
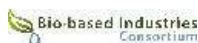
- In a single country (particularly in a small country) requesting multiple workshops with the same pool of stakeholders can be quite challenging.
- Organisations with institutional knowledge (background in bioeconomy, connections to stakeholders in their region, experience in design/delivery of educational programmes) could perhaps omit some of the workshops and focus on getting feedback from stakeholders once they have the bones of a basic business plan for the BBEC.

As a result of the two points noted above, we would recommend that in the replication process, potential BBECs should be able to self-assess their level of maturity and institutional knowledge and step into the process at a corresponding point, focusing on the steps in the BBEC replication plan which are of particular relevance to their organisation/region.

Conclusions:

Overall, the process has been a positive one for the Irish BBEC. Operating in one country rather than across several countries in a region has simplified the process for the Irish BBEC and partners MTU and IBF have a good working relationship and good relationships with other stakeholders in the Irish bioeconomy field.

For replication, potential BBECs should be able to self-assess their level of maturity and institutional knowledge and step into the process at a corresponding point, focusing on the steps in the BBEC replication plan which are of particular relevance to their organisation/region.



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The German case

Process for establishing the German BBEC concept

The German BBCE is a concept at a regional level (Baden Württemberg) triggered by the educational activities of the University of Hohenheim in the context of Bioeconomy.

The process for establishing the BBEC concept consisted of the steps defined in the BIObec project. Initially, we had two different online interview sessions with 6 participants, experts on bioeconomy education (18/10/21 and 28/10/21). The results of these initial interviews gave the context in which the center will be built upon. After these, we understood the general socio-economic industrial context, the bioeconomy labor market, the current programs for vocational academic and life-long learning, and its respective organizations at a regional level. We had clear the needs, opportunities, and expectations for a potential BBEC in the region.

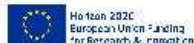
Complementing the information from the interviews with two workshops (03.05.22 and 25.04.22) with more partners involved in bioeconomy and education from the academia, the industry, and the government, we created a first vision of the BBEC, we could understand comprehensively the potential actors involved in the BBEC, the potential customers, possibilities to connect and contribute and the first insights for the value proposition.

Following these results and continuing with an internal workshop (11.08.22) and interviews (Aug 2022) with specific partners, we created the first version of the Business Model of the Centre based on previous results and bringing the ideas and visions to a common ground.

During the WP3, we worked on the potential implementation solutions description with Porter's diamond scheme and the key activities description table internally based on the results we obtained from previous tasks and desk research. We had one internal round of feedback before sending it to the WP leader.

We developed tasks 3.2 and 3.3 in parallel. Starting with the templates provided by the task leaders, we created a first draft of the governance model with the financial options that the center could have. We shared this first draft with the internal group of the bioeconomy office at the University of Hohenheim for receiving a first round of feedback split into three meetings (31.01.23, 7.02.23, 21.02.23).

Then, we refined the governance plan based on the feedback and collected more information on the current educational offerings. After our first round of feedback, we decided that the BBEC will be part of the university, and that would mean using the resources available for the services of the BBEC. We created a shared table with offers/products that already exist and serve education in the context of bioeconomy.



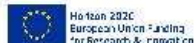
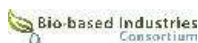
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In the end, we manage to collect 49 inputs (Feb 2023). With these inputs, we categorized and compared them with the initial value propositions of the Business model. In an iterative exercise, we revised the value proposition with the needs, expectations, and opportunities of the first working package and improved the value propositions based on the available offerings and possible potential offerings.

Afterward, we had another workshop (10.05.23) with the bioeconomy office team (5 persons) in which we presented the concept of the BBEC from the governance perspective and the financial alternatives based on it. We made some changes and wrote the report for the respective tasks with some feedback in between.

For task 3.4, we defined further activities based on the currently available resources and offerings. This approach allowed us to be as realistic as possible and maintain the concept broad and simple. The idea behind this tactic was to define activities that could be implementable based on the available resources. Finally, for task 3.5 we followed the template and filled it according to the information obtained in the previous tasks of this and other WPs.



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The Mediterranean case

Description of the design process for Med-BBEC

The Mediterranean BBEC involves five BIObec's partners, namely UNIBO, CTA, FVA, UAB, and CNR. In the scope of WP3 activities, to allow definition of the main dimensions describing the BBEC, several forms of co-creation were done.

Activities among Mediterranean partners

First, to plan activities and stakeholder engagement – especially IRWG – a meeting with only Mediterranean partners was held on 7th March 2023. In this meeting, two main points were discussed and defined:

- How to involve the Mediterranean IRWG; it was decided to involve them through national activities (in Italy and in Spain) rather than interregional activities due to the main barrier of language;
- To validate the Template in the scope of T3.4 for designing plans and programs for education and training; hence, considerations were made on both the contents and the template's form.

After this meeting, both the organization of activities with IRWG and the outputs of these activities were exchanged and commented on through emails between Italian and Spanish partners.

Activities with IRWG

Activities carried out in Italy

The involvement of the Italian IRWG was conducted mainly through online meetings. In particular, three meetings were organized from April to June 2023:

- I Italian IRWG meeting, 26th April, 2023, 15 participants (7 partners + 8 IRWG members); the meeting was intended to provide an overview of the main dimensions identified within the three WP3 tasks – namely, governance, economic-financial requirements, plans and programs for education and training – and to receive feedback on them;
- II Italian IRWG meeting, 24th May, 2023, 11 participants (6 partners + 5 IRWG members); during the meeting the BBEC's business plan was discussed, in particular looking at the economic-financial forecast, focusing on both activities costs and general costs for running the Centre;
- III Italian IRWG meeting, 16th June, 2023, 7 participants (4 partners + 3 IRWG members); the meeting was held to discuss about the overall sustainability of the BBEC, pointing out opportunities, threats and obstacles at the economic, social and environmental level.

The interactions with IRWG were enriched through the share of the minutes after each meeting to allow them to better define the concepts expressed during the meeting. Furthermore, all the draft and final documents in the scope of the three WP3 tasks, as well as the presentations made during the meeting, were shared with IRWG members.

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All the feedback received, following their topic were integrated into the specific document of WP3.

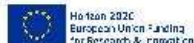
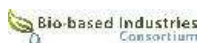
Activities carried out in Spain

The participation of the Spanish IRWG took place in a single online meeting on 2nd May 2023, with three participants (3 IRWG members). The main objectives of the meeting were to provide them with an overview of the BIObec project and to present the activities within the scope of WP3 (specifically tasks 3.2, 3.3 and 3.4). The presentation followed by an open discussion where participants could give their feedback and insights. To ensure effective communication and understanding, the minutes of the meeting were shared with the IRWG members afterward. This allowed them to review and clarify any concepts or points discussed during the meeting. The feedback received from the IRWG members, was then incorporated into the specific deliverables of WP3.

Activities within each partners' organization

The different scenarios possible – especially in terms of governance, economic efforts and in-kind contributions – required an internal survey within each partner's organisation. Hence, it was decided by common agreement to start a process of internal analysis of the limits and facilities that each scenario would entail. This process helped to identify the best solutions for all the Mediterranean partners. These solutions were then proposed to IRWG members.

One of the results of this process was that each partner and IRWG member had the opportunity to make a realistic evaluation of their engagement options in relation to their own mission and internal needs.



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The Danish co-created Case

The process in Denmark has involved a 'key IRWG-group' and an 'extended IRWG group'.

The start was the key stakeholder's interview with 5 key IRWG stakeholders. At this point we decided to open the circle and across the activities in WP 2, 3 and 4 we have had 4 physical workshops, which in total gave a very comprehensive process with multiple feedbacks from many local experts.

Workshop 1 (April 2022): The vision workshop including the mapping of potential stakeholders and the first inputs to the Business Canvas model. 14 participants from Aarhus University, Agricultural Vocational College, Municipalities, Seges Agricultural Innovation Center and GreenLab Skive.

Workshop 2 (August 2022). The Business Canvas Model workshop. We invited openly for this workshop and had a very good process in formulating the BMC, now including Business academy, more agricultural colleges, Central Denmark Region, startup-company etc, a total of 16 participants.



Figure 8. Intense discussions at the BMC workshop in Denmark

Workshop 3 (January 2023). Co-creation workshop on the structure and content of Danish BBEC. 17 participants, Most of these from previous workshops. Elaboration of specific elements of the BMC, such as the Governance, The possible activities and the financial model.

Workshop 4. (July 2023). Roundtable discussions (21 participants) on the rollout and replication of the Danish BBEC. Inspiration from the other five regional cases, input from

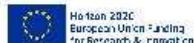
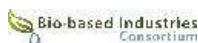


the Bioeconomy industry, and co-creation sessions on common marketing, common development of courses and customer segments.

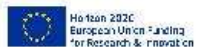
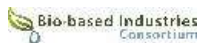
Between workshops 3 and 4 FBCD had individual consultancies/physical meetings with a total of 14 interested/relevant stakeholders on their view and interest in the BBEC. Generally, there was a very positive and constructive attitude and interest in establishing a BBC.

The general idea of the BBEC has been 'tested' and reflected upon on several occasions and the stakeholder group has slowly increased. Some of the Key stakeholders have participated all the way through, and more have been included along the way.

After the last workshop, **most stakeholders have signed a MoU** for a common application to a private foundation for the real establishment of a project/BBEC named BioKompete. In the last phase of this work, we have now 3 universities, 2 agricultural colleges, one business college, 2 municipalities, and 2 private companies onboard for future work.



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