www.transition2bio.eu
info@transition2bio.eu

D1.6

Transition2BIO toolkits – update

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FVA NEW MEDIA DESIGN

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DIPARTIMENTO DI SCIENZE E TECNOLOGIE
AGRO-ALIMENTARI

D1.6

Transition2BIO toolkits – update

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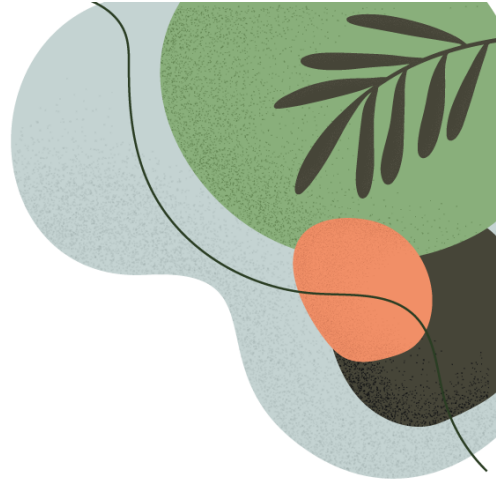
Contributors

NAME	ORGANISATION
Lily Teitelbaum	BIOCOM

Peer Reviews

NAME	ORGANISATION
Selenia Marinelli	FVA
Jana Bielikova	PEDAL

Revision History

| VERSION	DATE	REVIEWER	MODIFICATIONS
1	24/09/2022	Lily Teitelbaum	First version
2	30/09/2022	Lily Teitelbaum	update
3	18/11/2022	Lily Teitelbaum	update
4	24/11/2022	Selenia Marinelli	Inputs added for Italian teacher toolkit
5	29/11/2022	Jana Bielikova	Minor edits
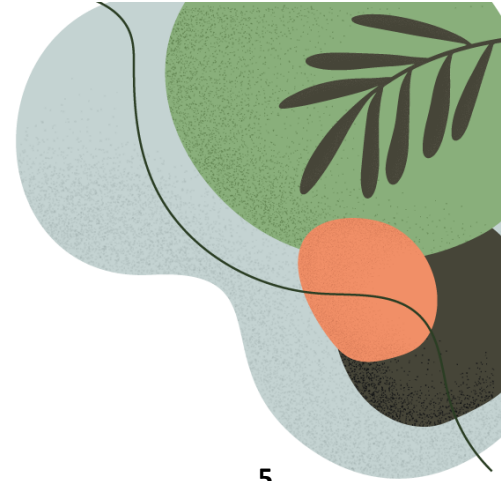
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1. Executive Summary

This document provides the basis for an update of the first version of the toolkits (see D1.5 Transition2BIO toolkits – 1st version) to improve their targeting and usability for all stakeholders targeted by the transition2bio project. The toolkits have been improved with regard to their targeting, content, navigability and visibility, in order to respond to the feedback received through multiple validation activities.

The transition towards the bioeconomy and a more sustainable Europe requires a profound transformation of different sectors of the economy and involves a wide range of stakeholders. With this in mind, a set of toolkits were created to promote bioeconomy from different perspectives and objectives, producing a package of knowledge and supportive media.

The result is six action-oriented toolkits with tailored actionable knowledge tools and contents (145 resources in total) directed at the six main stakeholders targeted by the project, namely citizens, businesses, communicators, teachers, students, and policy makers. Together these stakeholders represent the demand, supply and supportive environment of the bioeconomy. Each toolkit is a compilation of related information, tools, databases, videos, presentations, platforms and good practices that help inform users about the bioeconomy and guide different groups in engaging with the bioeconomy in a manner that conforms to evidence-based recommendations. The toolkits offer highly valuable content that contribute to raising awareness, educating and building support for the bioeconomy

The latest version of the toolkits can be viewed on the Transition2Bio website here: https://www.transition2bio.eu/toolkits/
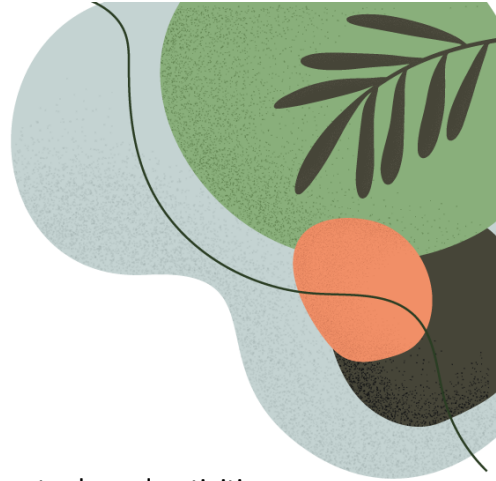
2. Introduction

The objective of WP1 is to valorise and exploit sectoral communication tools and activities developed at national, regional and local level by EU funded bioeconomy projects and other relevant initiatives (SO1) for the creation of the awareness, communication and education toolkits. Under Task 1.3, three toolkits tailored to the three different target groups: demand, supply, and multipliers/supportive environment were created and made available to the public. In the first half of the project, D1.5 Transition2BIO toolkits –1st version provided the methodology for the production of the toolkits, the results of a pre-validation workshop, and the key dimensions of the first version of the toolkits including their content, sources, design, usage, and limitations

The aim of this deliverable, D1.6 Transition2BIO toolkits – update, is to provide new and improved toolkits based on an updated version of the conceptual framework (D1.2), and the feedback from a Validation Workshop (T1.3.2) involving Advisory Board Members. The following document summarizes the methodology to produce the updated toolkits and the key dimensions of the finalized second version of the toolkits.

3. Methodology

In M9 (September 2021), the first version of the toolkits (D1.5) were produced and made available on the transition2bio website. For the update of the toolkits, a validation workshop (T1.3.2) was organized, the toolkits were validated through their exploitation throughout the project, and lessons draw from deliverable *D1.2 Conceptual framework of the awareness, communication and education toolkits – update*. All changes were then discussed through various coordination meetings with the consortium in M13 (January 2022), M16 (April 2022), M18 (June 2022), and M19 (July 2022).

3.1 Validation Workshop

In M12 (December 2021), a toolkit validation workshop (T1.3.2) was organised by ZSI and BIOCOM with 20 participants from a range of sectors. The first version of the toolkits were presented and participants asked to discuss their contents in smaller breakout groups. Using a MIRO board (see Appendix 1) each group discussed one toolkit with a set of questions regarding improvements to targeting and content.

Taken together with the rating of the most important comments made using the *Pigeonhole* application, the toolkits were praised for the level of engaging content and expansiveness of the tools collected. General comments concerning all three toolkits related to the need to better target the individual toolkits, communicate what is inside each toolkit and what will be learned, add more points of entry, to tone down the academic and technical language, provide better navigation in the pdfs, and the need for local language versions of the toolkits.
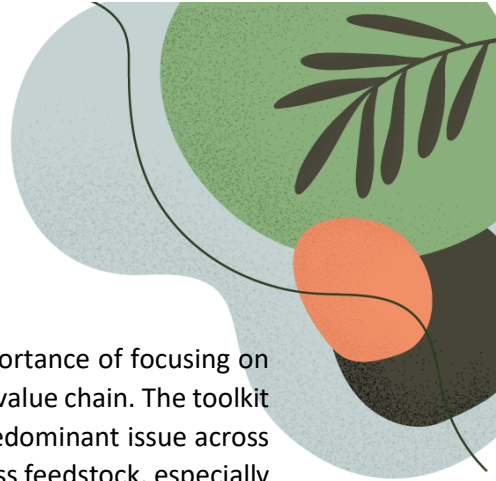
Toolkit 1

Discussions surrounding toolkit 1 and its targeting of the demand side centred on whether the toolkits managed effectively to speak to the entirety of the general public or if certain publics were neglected. Participants noted the difficulty of adequately addressing all perspectives and praised the toolkits for the range of sources and perspectives incorporated. It was also discussed whether the bioeconomy games would be more suitable for the children in the teacher toolkits. Much of the feedback related to the need to better target a less informed audience by reducing the amount of technical and academic language, removing any unnecessary EU jargon or project names, creating catchier titles and more diverse points of entry, including more images "did you know statements" and focusing on the benefits for consumers.

In general, participants found that the toolkits were engaging, successfully reached the goal of helping to increase the general knowledge on bioeconomy and provided a holistic representation of the bioeconomy based on available resources.

Toolkit 2

The second toolkit was positively received, and its comprehensiveness and the variety of resources used (especially from previous CSAs) praised. A central challenge for the second toolkit was determining the level of targeting necessary to successful address the entirety of the

supple side of the bioeconomy. Initially participants recognized the importance of focusing on primary producers and their linkages to companies and the bioeconomy value chain. The toolkit was commended for its references to the feedstock issue, which is a predominant issue across the value chain, and it was suggested that an emphasis remain on biomass feedstock, especially its availability and seasonality.

However, considering 1) a lack of evidence suggesting that primary producers are particularly interested in connecting more to the bioeconomy value chain and 2) the language barrier posed by of an English toolkit for more rural primary producers, the participants suggested that more focus should be placed on supporting entrepreneurs and start-ups willing to enter the bioeconomy field. In addition, given that larger established companies have their own expertise, data, and intelligence, a larger impact could be made by focusing on SMEs and start-ups. However, there was not full agreement among participants as some indicated that it would be impactful to target larger companies that might not play a role in the bioeconomy, but would like to become more bioeconomy-driven and would be receptive to tools on how to turn traditional products more sustainable or substitute fossil-based feedstocks with bio-based alternatives. To better support the start-up community, it was also suggested that more attention be placed on key financial actors, networking opportunities, technological uncertainty, life cycle analysis tools, techno-ecological performance indicators, and sustainability impact assessment tools.

Given the complexity and lack of resources pertaining to the areas mentioned above, it was also suggested that a more achievable goal would be to show best practice examples or focus more on how to convey reliable messages to consumers and gain trust from the market.
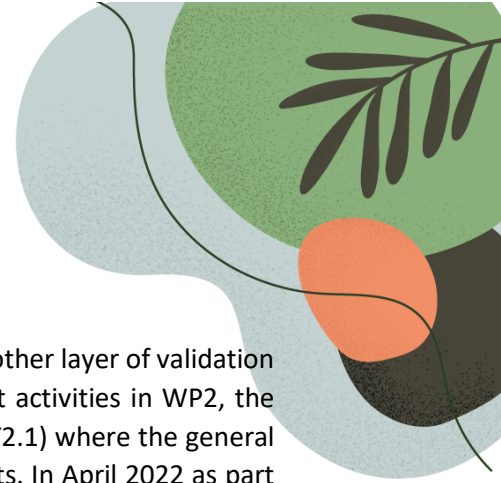
Toolkit 3

Given the importance of all stakeholders in the third toolkit it proved difficult to focus the conversation and deliver concrete suggestions. All stakeholder groups were considered relevant, however significant attention was placed on educators. It was suggested that both formal and informal education as well as more university level resources be included. With regard to policymakers, it was suggested that they be supported more in understanding how to manage the intersectoral aspects of the bioeconomy.

3.2   Midterm review

Comments received during the projects midterm review in M15 (March 2022) spoke to the extremely valuable contents of the toolkits and their potential to contribute to raising awareness, educating and building support for the bioeconomy. Improvements centered around the need to make the toolkits more visible on the website to ensure that people will find them and use them as intended. In addition, website users should be helped to navigate the highly valuable content of the toolkits and they should be potentially renamed or at least clearers explanation on their purpose should be provided.

3.3   Validation through exploitation

Over the course of the project several avenues were used to provide another layer of validation through exploitation. As part of the awareness and public engagement activities in WP2, the toolkits were made available on a laptop for the at large-scale events (T2.1) where the general public (demand side) had the opportunity to browse through the toolkits. In April 2022 as part of the Training for teachers (Subtask 2.2.3) an online peer2peer training for teachers (teaching pupils from age 5 to 11) on how to teach bioeconomy on primary school level was organized and a presentation given by BIOCOM on the toolkits and the availability of existing teaching material on bioeconomy. The webinar aimed at supporting teachers with introducing existing innovative teaching and learning materials on bioeconomy and especially focused on using toolkits 1 and 3 to find primary school bioeconomy resources.

Under WP 3 (T3.1) a package of services including a module on the toolkits was developed to help contribute to the deployment of the regional bioeconomy strategies by providing Member States and Regions with methodologies, tools and material to implement their bioeconomy raising awareness, communication and education activities. The module presented the Transition2bio library of resources and toolkits and showcased how the toolkits can be used by regional stakeholders to strengthen their capacities and to build a proper strategy to communicate the bioeconomy. The resources provided in the toolkits could be used regardless of the level of bioeconomy development in the target country/region.

An online survey to collect feedback and suggestions for the second version of the toolkits was also posted on the transition2bio website. While respondents found the toolkits to be useful overall, the highest ratings applied to the question of whether people's knowledge on bioeconomy increased (toolkit 1), and the lowest for whether they learned about new bioeconomy opportunities for businesses (toolkit 2). Those that found the toolkits to be the most useful, were teachers, students, and other civil society members. Respondents commented that they used the toolkits, for example, to "teach my pupils basic concepts of bio-based and circularity", "tell my parents about bioeconomy and environment", "tell my friends and relatives," and "learn on environment". Feedback collected highlighted the need for more images, and shorter toolkits for each target group as opposed to three longer toolkits.

3.4   Key findings of D1.2

The deliverable (D1.2) provided an update to the conceptual framework (*D1.1 Conceptual framework of the awareness, communication and education toolkits – 1st version*) and defined a strategy to update the toolkits. The document drew from 1) a survey conducted in M14 (February 2022) by four members of the Advisory Board with qualitative open-ended questions about both the conceptual framework and the toolkits and 2) the results of the toolkit validation workshop (T1.3.2).

The following main recommendations can be summarized here:

- Given the difficulty of clearly communicating to all relevant stakeholders in the European bioeconomy in three dedicated toolkits for the demand, supply and supportive environment, the toolkits should be divided into six toolkits for 1) Citizens, 2) Businesses, 3) Communicators, 4) Teachers, 5) Students and Trainees, 6) Policy Makers.

- The toolkits should more clearly stake their aims and what they contain. The toolkits should be made more understandable and appealing to people who are not yet involved in the bioeconomy by using simpler language and more storytelling and success stories.
- Navigation should be improved by allowing the consultation of resources without exiting from the toolkits or installing a side panel so that the users can easily navigate the different sections of the toolkits

4. Key Dimensions of the Updated Toolkits

Taking into consideration the feedback received through multiple activities and validation techniques paired with the complexity of the changes required, the availability of tools and resources necessary to make such changes, several updates were made to the toolkits to ensure a more targeted approach and better usability.

4.1 Clearer targeting

Over the course of the project, it became clear that in order to improve user navigability, the three dedicated toolkits for the demand, supply, and multiplier environment should be broken down into their respective stakeholder groups. In addition, new names for the "toolkits" were brainstormed to more clearly indicate their usability. In the end, however, it was decided that a name change would confuse the many users who have become familiar with the toolkits, including those using the modules created for the capacity building activities and teacher trainings. Instead, the language describing the contents of the toolkits was altered to describe their purpose more clearly as "knowledge packages" as opposed to guided step by step tutorials.

With these comments and concerns in mind the following six toolkits were created:

Figure 1: *Design of six new toolkits pdfs*
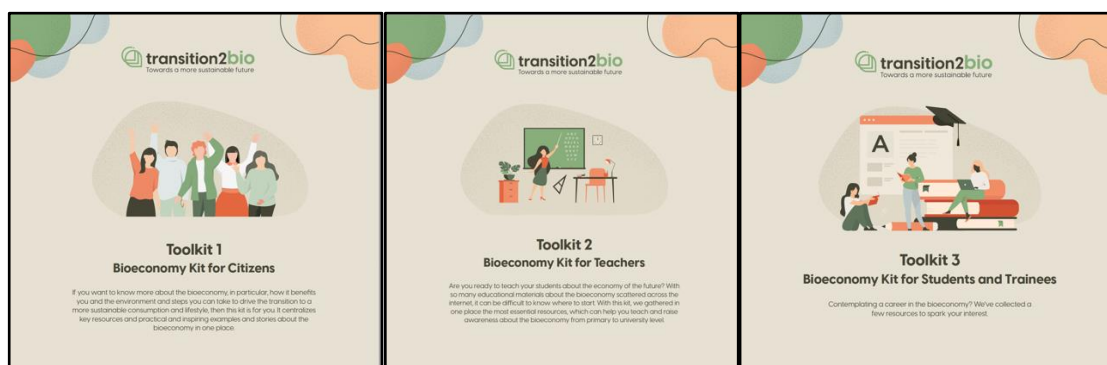
4.1 Tools and language changes

While an update of the collected tools in *D1.4 Report on Collection of existing contents, tools and good practices – update* was not made available before the creation of the second version of the toolkits, several new tools (over 30) were collected by BIOCOM (see Annex 2 new tools highlighted in orange). Following a EuBioNet MML workshop "Projects2projects" workshop in Brussels in October 2022, a number of new resources were added to the toolkits. In addition, the names of upcoming EU bioeconomy projects were added to the end of the teacher and policy maker toolkits to provide users with additional sources of new bioeconomy information.

The addition of new tools sought to fill any missing knowledge gaps and included the additional following areas: 1) increased content on biorefining, 2) more examples of success stories including bio-based innovations, virtual bio-based marketplaces, 3) improved stakeholder engagement tools, 4) updated EU level bioeconomy progress reports and regional bioeconomy development, 5) better understanding of the intersectoral aspects of the bioeconomy e.g. cohesion, rural development, and bio-based industry policy.

To better target a less informed audience, the language was simplified in places where it was overly technical or academic, EU project names were removed for citizens, catchier titles and more diverse points of entry, including more "did you know" statements created, and clearer and more descriptive aims for each toolkit created.

Regarding the question of potential barriers caused by the English language, responsibility was given to the consortium partners to create their own language versions of the toolkits. Given the vast differences in the availability of tools in the different languages, there was not enough content available for toolkits in teach language. In the case of the Italian partners, an [Italian version of the teacher toolkit](#) was created and implemented in several capacity building activities involving teachers both from primary and secondary schools (see D2.4 and D2.5).

4.2 Website page and navigability improvements

The toolkit website landing page was improved by LOBA to make the toolkits more visible and clearly identify their contents. While many discussions took place as to whether an interactive webpage would improve the toolkits, in the end pdfs were the preferred choice as they could be more easily downloaded and disseminated and could better summarize complex topics.

While interactive webpages can be visually appealing, it proved challenging to condense topics into easily understood and clickable images.

The toolkit pdfs were further enhanced by allowing the consultation of resources without exiting from the toolkits.

Figure 2: *New website design for toolkits*

5.   Conclusion

The updated set of toolkits provide critical action-oriented resources from different perspectives for a wide range of actors with little to high levels of bioeconomy knowledge. Each toolkit is a compilation of related information, tools, databases, videos, presentations, platforms and good

practices that help inform users about the bioeconomy. Through multiple rounds of validation, the toolkits have been tested and improved to ensure their usability. Specifically, the toolkits have been improved to ensure better targeting, content, navigability and visibility on the transition2bio website.

The toolkits have been exploited throughout the project: during public engagement activities and training for teachers in WP2 and through the package of capacity building resources for member states and regions in WP3. The toolkits have proved highly valuable in contributing to raising awareness, educating and building support for the bioeconomy and their availability online over the coming years will contribute to the sustainability of the transition2bio and all the other EU resources collected and validated in the toolkits.

5.1   Appendix 1: Miro Board Discussion

*New tools added from the first version marked in orange.

No.	Title of the tool	Type	Target Group	Project /Source	Year	Link
1	"The bioeconomy starts here!"	video	citizen/ teacher	European Commission, DR RTD	2014	https://www.youtube.com/watch?v=2xvXkOMRTs4
2	The bioeconomy: a brief introduction	factsheet	citizen/ teacher	Allthings.bioPRO	2021	https://www.allthings.bio/wp-content/uploads/2021/04/Bioeconomy_EN_2104.pdf
3	Bioeconomy	website	citizen/ teacher	European Commission, DR RTD		https://knowledge4policy.ec.europa.eu/bioeconomy/topic/policy_en
4	'60' Science videos – From bio-based research to Bio-based products	video	citizen	BIOWAYS	2018	https://www.youtube.com/playlist?list=PLk-gaYFMdulFS0FPU7V1Zzvpk-dAuPfMe
5	The Fundamentals Of bioeconomy: The Biobased Society	report	citizen	The Technical University of Denmark, DTU	2016	https://backend.orbit.dtu.dk/ws/portalfiles/portal/140638164/Lange_L_Lindedam_J_2016_The_Fundamentals_Of_Bioeconomy_The_Biobased_Society..pdf
6	Algal biomass and nanotechnologies	factsheet	citizen	BIOWAYS	2018	https://drive.google.com/file/d/13R-U4otcqbEhgl1YYLJdFDS6aGZJpdMv/view
7	Pure organic spirulina chips	factsheet	citizen	BIOWAYS	2018	https://drive.google.com/file/d/17Xt6iKuf4BUAOagqrr6bMhgXNeh72dCU/view
8	Potential use of seaweed for pharmaceuticals and health products.	factsheet	citizen	BIOWAYS	2018	https://drive.google.com/file/d/1qDfaLR3q5DAXW4D5HeKAoqA-khbK4_Xs/view
9	Knowledge Centre for Bioeconomy - video on algae biomass production	Video	citizen	European Commission, DR RTD	2021	https://knowledge4policy.ec.europa.eu/publication/knowledge-centre-bioeconomy-video-algae-biomass-production_en
10	Bracelets from fish skin	factsheet	citizen	BIOWAYS	2018	https://drive.google.com/file/d/1VzFdLjOQHr8NIb6EGvuAEYDcT_9KqM7R/view

11	Using cereal waste to develop novel products for the food, packaging and agricultural sector	factsheet	citizen	Agrimax	2017	https://agrimax.iris-eng.com/wp-content/uploads/2017/05/Using-cereal-waste-to-develop-novel-products-for-the-food-packaging-and-agricultural-sector-1.pdf
12	Using olive residues to develop novel products for the food and packaging sector	factsheet	citizen	Agrimax	2017	https://agromax.iris.cat/wp-content/uploads/2017/05/Using-olive-residues-to-develop-novel-products-for-the-food-and-packaging-sectors.pdf
13	Using potato waste to develop novel agricultural films and pots	factsheet	citizen	Agrimax	2017	https://agrimax.iris-eng.com/wp-content/uploads/2017/05/Using-potato-waste-to-develop-novel-agricultural-films-and-pots.pdf
14	Using tomato waste to make novel products for the food and packaging sectors; cutin and lycopene	factsheet	citizen	Agrimax	2017	https://agrimax.iris-eng.com/wp-content/uploads/2017/05/Using-tomato-waste-to-make-novel-products-for-the-food-and-packaging-sectors-cutin-and-lycopene.pdf
15	Bioplastics from sugar beets – BLOOM Bioecononmy	video	citizen	BLOOM	2020	https://www.youtube.com/watch?v=DxTcqChFlYA
16	Knowledge Centre for Bioeconomy - video on agricultural biomass production	video	citizen	European Commission, DR RTD	2020	https://knowledge4policy.ec.europa.eu/publication/knowledge-centre-bioeconomy-video-agricultural-biomass-production_en
17	Quiz: Food Waste Valorisation	Games	citizen	Refresh	2020	https://eu-refresh.org/quiz.html
18	What if we could transform food into food preservatives?	factsheet	citizen	EuropaBio	2020	https://www.europabio.org/wp-content/uploads/2021/03/2020_01_I_F_EuropaBIO_WHATIF_iFermenter_V02.pdf

19	Wooden Shirts – BLOOM Bioeconomy	video	citizen	BLOOM	2019	https://www.youtube.com/watch?v=DxTcqChFlYA
20	Knowledge Centre for Bioeconomy - video on forestry biomass production	Video	citizen	European Commission, DR RTD	2020	https://knowledge4policy.ec.europa.eu/publication/knowledge-centre-bioeconomy-video-forestry-biomass-production_en
21	'59 Application areas in Factsheets'	factsheet	citizen	BIOWAYS	2018	https://drive.google.com/file/d/1UsVNfcLrKMUn-O-5CArY-R5Bf3tNaWuv/view
22	"The bioeconomy in our everyday lives"	video	citizen	BIOWAYS	2018	https://www.youtube.com/watch?v=ir3MgOSmvLg
23	Bio-based innovation for sustainable use of natural resources	video	citizen	European Commission, DR RTD	2021	https://www.youtube.com/watch?v=jj1mtWiCEZQ
24	"A Bio-Based Day"	video	citizen	BIOBRIDGES	2020	https://www.youtube.com/watch?v=6f7Ej2_BLso&list=PLtcmfwGu2PB3NdW5cwMb2ciiOdfyVtvvL
25	GBS2020, Bioeconomy Exhibition	virtual exhibition	citizen	GBS2020	2020	https://gbs2020.net/bioeconomy-exhibition/
26	Virtual Bio-Based Pop-up Store	virtual exhibition	citizen	BE- Rural	2022	https://be-rural.eu/pop-up/
27	Factsheet #1: What are bio-based products	factsheet	citizen	InnProBio	2019	https://www.bioeconomy-library.eu/wp-content/uploads/2019/11/InnProBio_Factsheets_combined.pdf
28	BIOBASED PRODUCTS	platform	citizen	BIOVOICES	2018	https://www.biovoices-platform.eu/registeredarea/marketplace
29	Bio-Art Gallery	virtual exhibition	citizen	BIOVOICES	2018	https://www.biovoices.eu/gallery/
30	Factsheet #1: What are bio-based products	factsheet	citizen	InnProBio	2019	https://www.bioeconomy-library.eu/wp-content/uploads/2019/11/InnProBio_Factsheets_combined.pdf
31	"Game changer for the bio-	video	citizen	AllThings.Bio	2021	https://www.youtube.com/watch?v=_mCkQYzvsKY&t=3s

	based economy"				
32	Podcasts	podcast	citizen	AllThings.Bio	2022	https://www.allthings.bio/podcasts/
33	Bio-based food packaging	pageflow	citizen	Allthings.bioPRO	2019	https://www.allthings.bio/pageflow/bio-based-food-packaging/
34	Bio-based insulation materials	pageflow	citizen	Allthings.bioPRO	2018	https://www.allthings.bio/pageflow/bio-based-insulation-materials/
35	Bio-based household cleaning products	pageflow	citizen	Allthings.bioPRO	2018	https://www.allthings.bio/pageflow/bio-based-household-cleaning-products/
36	Factsheet – Sustainable fashion	factsheet	citizen	Allthings.bioPRO	2021	https://www.allthings.bio/wp-content/uploads/2021/04/Fashion_EN_2104.pdf
37	Quiz #1 – Are you ready for the bioeconomy?	Games	citizen/ teacher	AllThings.Bio		https://www.allthings.bio/quiz/are-you-ready-for-the-bioeconomy/
38	Quiz #4 – Bio-based or biodegradable: that is the question!	Games	citizen/ teacher	AllThings.Bio		https://www.allthings.bio/quiz/quiz-4-bio-based-or-biodegradable-that-is-the-question/
39	Quiz#5 – Bio-based food packaging	Games	citizen/ teacher	AllThings.Bio		https://www.allthings.bio/quiz/quiz5-bio-based-food-packaging/
40	Key words	glossery	citizen	Allthings.bioPRO		https://www.allthings.bio/keywords/
41	Bioeconomy Questions & Answers	FAQs	citizen	BLOOM		https://bloom-bioeconomy.eu/bioeconomy-questions-and-answers/
42	Teacher Training	website	teacher	Transition2bio		https://www.transition2bio.eu/teacher-training/
43	The BLOOM School Box	training material	teacher	BLOOM	2019	https://bloom-bioeconomy.eu/schoolnetwork/schoolbox/
44	Factsheet - Kids and Schools	factsheet	teacher	Allthings.bio	2021	https://www.allthings.bio/wp-content/uploads/2021/04/KidsSchools_EN_2104-1.pdf
45	educational cards	graphic cards	teacher	BIOVOICES	2020	https://www.biovoices.eu/results/educational-cards/
46	Suitcase of products	factsheet	teacher	BLOOM	2020	https://bloom-bioeconomy.eu/wp-content/uploads/2020/10/Bioeconomy-suitcase-leaflet.pdf

47	What's a more Bioeconomy? – Book for kids	book	teacher	BIOVOICES/Transitionsbio	2021	https://www.transition2bio.eu/games/
48	Memory Game	game	teacher	Transition2bio	2022	https://www.transition2bio.eu/games/
49	Leaflets		teacher	Transition2bio	2022	https://www.transition2bio.eu/games/
50	Farmer Hubert	books	teacher	FNR		https://international.fnr.de/service/for-kids
51	BIOES Game	game	teacher	BIOVOICES	2018	https://www.fvaweb.eu/bes/
52	BIOCHALLENGE	game	teacher	BIOVOICES	2018	https://www.fvaweb.eu/biochallenge/
53	Serious Game 'BIO…What?'	game	teacher	BIOVOICES	2018	https://www.fvaweb.eu/biowhat/ https://www.bioways.eu/bio-learn/serious-games
54	Quiz 2 – Gear up and test your knowledge on biofuels!	Games	teacher	AllThings.Bio		https://www.allthings.bio/quiz/quiz-2-gear-up-and-test-your-knowledge-on-biofuels/
55	Quiz #3 – Find out how bio-based insulation can keep you warm this winter	Games	teacher	AllThings.Bio		https://www.allthings.bio/quiz/quiz-3-bio-based-insulation-materials-find-out-how-bio-based-insulation-can-keep-you-warm-this-winter/
56	BLOOM Quiz on bioeconomy	Games	teacher	BLOOM	2018	http://quiz.bloom-bioeconomy.eu/
57	Review of 100 free online teaching resources	report	teacher	Be-Rural	2020	https://be-rural.eu/resources/
58	Power Point slides for teacher presentations with notes	presentation	teacher	Be-Rural	2020	https://be-rural.eu/resources/#teacher
59	Workshops, quizzes and games	games	teacher	Be-Rural	2020	https://be-rural.eu/resources/#workshops
60	Jobs and Careers in the bioeconomy	factsheet	students/trainees	Allthings.bio	2021	https://www.allthings.bio/wp-content/uploads/2021/04/JobsCareers_EN_2104.pdf
61	Why should you pursue a career in bioeconomy?'	video	students/trainees	UrBIOfuture	2020	https://www.youtube.com/watch?v=oIlSL9-t2cE

62	Educational programmes	platform	students/trainees	UrBIOfuture		https://www.urbiofuture.eu/educational_programmes/
63	About Us	platform	students/trainees	ABBEE		https://www.abbee.eu/
64	The Bioeconet project E-learning platform	platform	students/trainees	BioEcoN		https://moodlebioecon.eu
65	EBU Label – Bioeconomy qualification supplement	website	students/trainees	European Bioeconomy University	2022	http://european-bioeconomy-university.eu/education/ebu-label/
66	FIELDS Database	platform	students/trainees	FIELDS		https://www.erasmus-fields.eu/database/
67	Interactive Training Gap Identifier - Career Maps	platform	students/trainees	Askfood		https://www.askfood.eu/tools/itgi/index.php/career-maps/
68	Key messages - Seven things to know about bioeconomy	factsheet	communicators	BioCannDo/Allthings.bio	2018	http://www.allthings.bio/wp-content/uploads/2018/09/Key-messages_General.pdf
69	What people want to learn and know about bio-based products	factsheet	communicators	BioCannDo/Allthings.bio	2019	http://www.allthings.bio/wp-content/uploads/2019/11/Factsheet-Communication-topics_v5_SR.pdf
70	Fact Sheet "Awareness raising"	factsheet	communicators	LIFT	2020	https://www.bioeconomy-library.eu/awareness-raising/
71	Outreach & Engagement Guidebook	report	communicators	BLOOM	2020	https://bloom-bioeconomy.eu/wp-content/uploads/2020/12/BLOOM-Outreach-Engagement-Guidebook.pdf
72	Fact Sheet "Stakeholders engagement and co-creation"	factsheet	communicators	LIFT	2020	https://www.bioeconomy-library.eu/stakeholders-engagement-and-co-creation/
73	STAKEHOLDER ENGAGEMENT TOOLS	website	communicators	SHERPA		https://rural-interfaces.eu/resources-and-tools/stakeholder-engagement-tools/

74	Biobridges communication toolkit/social media cards	toolkit	communicators	Biobridges	2020	https://www.biobridges-project.eu/results/bio-based-economy-awareness-toolkit/
75	THE EU GUIDE TO SCIENCE COMMUNICATION	video	communicators	CommBeBiz	2017	http://commbebiz.eu/?post=the-eu-guide-to-science-communication-
76	COMMUNICATION GUIDES	toolkit	communicators	Dandelion	2017	http://www.dandelion-europe.eu/en/infobase/communication-guides/dandelions-communication-guides.html
77	GUIDES TO MAXIMISE IMPACT OF SSH PROJECTS	toolkit	communicators	Dandelion	2017	http://www.dandelion-europe.eu/en/infobase/guides-to-maximise-impact-of-ssh-projects/guides-to-maximise-impact-of-ssh-projects1.html
78	"A new bioeconomy for a sustainable Europe"	video	policy makers	European Commission, DG RTD	2018	https://www.youtube.com/watch?v=RfRN_hHeIKk
79	Adoption of the bioeconomy strategy progress report	report	policy makers	European Commission, DG RTD	2022	https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/adoption-bioeconomy-strategy-progress-report-2022-06-09_en
80	Life and biological sciences and technologies as engines for bio-based innovation	report	policy makers	European Commission, DG RTD	2021	https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/life-and-biological-sciences-and-technologies-engines-bio-based-innovation-2021-04-20_en#:~:text=Life%20and%20biological%20sciences%20and%20technologies%20are%20enablers%20for%20bio,security%20and%20maintain%20international%20competitiveness
81	Bio-based innovation for sustainable use of natural resources	video	policy makers	European Commission, DG RTD	2021	https://www.youtube.com/watch?v=jj1mtWiCEZQ

82	Mapping European Biorefineries	website	policy makers	Bio-based Industries Consortium		https://biconsortium.eu/news/mapping-european-biorefineries
83	Knowledge Centre for Bioeconomy	database or repository	policy makers	European Commission, DG RTD		https://knowledge4policy.ec.europa.eu/bioeconomy_en
84	Bioeconomy Glossary	glossery	policy makers	European Commission, DG RTD		https://knowledge4policy.ec.europa.eu/bioeconomy/glossary_en
85	EU Bioeconomy Monitoring System dashboards	database or repository	policy makers	European Commission, DG RTD		https://knowledge4policy.ec.europa.eu/visualisation/eu-bioeconomy-monitoring-system-dashboards_en
86	The bioeconomy in different countries	database or repository	policy makers	European Commission, DG RTD		https://knowledge4policy.ec.europa.eu/visualisation/bioeconomy-different-countries_en
87	The EU BioEconomy Contribution to Sustainable	factsheet	policy makers	Biomonitor	2020	http://biomonitor.eu/wp-content/uploads/2019/11/2019-11-BIO_policy-brief-no.1.pdf
88	Capacity Building for Regional and national stakeholders	website	Policy makers	Transition2bio	2022	https://www.transition2bio.eu/capacity-building/
89	BIOVOICES Policy Briefs	policy brief	policy makers	BIOVOICES	2020	https://www.biovoices.eu/results/policy-briefs/
90	SmartPilots Project summary	website	policy makers	SmartPilots		https://www.interregeurope.eu/smartpilots/
91	Promoting education, training and skills across the bioeconomy	report	policy makers	European Commission, DG RTD		https://op.europa.eu/en/publication-detail/-/publication/da7a3790-330c-11ed-975d-01aa75ed71a1/language-en/format-PDF/source-search
92	Biocircularcities in brief #1	factsheet	policy makers	Biocircularcities	2022	https://biocircularcities.eu/resources/
93	Standardisation, LCA, labelling and regulatory hurdles	policy brief	policy makers	LIFT	2020	https://www.bioeconomy-library.eu/standardisation-lca-labelling-and-regulatory-hurdles/
94	Integrated Assesment Tool (IAT)	report	policy makers	STAR-ProBio		http://www.star-probio.eu/results/

95	Deliverables & documents	report	policy makers	STAR4BBI		https://www.star4bbi.eu/deliverablesanddocuments/
96	Bio-based products database and supporting tools for public procurement	database or repository	policy makers	InnProBio		https://www.biobasedconsultancy.com/
97	How the bioeconomy contributes to the European Green Deal	factsheet	policy makers	European Commission, DG RTD	2020	https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/66722c8d-2e03-11eb-b27b-01aa75ed71a1
98	Bio-based Circular Economy in Europe	policy brief	policy makers	BIOREGIO	2018	https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1536734042.pdf
99	Policy Learning Platform	report	policy makers	Interreg Europe		https://www.interregeurope.eu/policylearning/what-is-policy-learning-platform/
100	Greening the Rural Economy	website	policy makers	European Network for Rural Development (ENRD)		https://enrd.ec.europa.eu/enrd-thematic-work/greening-rural-economy_en
101	Bioeconomy strategy development in EU regions	report	policy makers	European Commission, DG RTD	2022	https://publications.jrc.ec.europa.eu/repository/handle/JRC128740
102	Regional potential and bioeconomy strategies and implementation roadmaps	policy brief	policy makers	LIFT	2020	https://www.bioeconomy-library.eu/regional-potential-and-bioeconomy-strategies-and-implementation-roadmaps/
103	Promoting Effective Co-creation Spaces in Regional Bioeconomies	policy brief	policy makers	BE-Rural	2022	https://be-rural.eu/wp-content/uploads/2022/07/BE-Rural_D6.4_Policy_Paper.pdf
104	Enabling rural regions to recognise the ecological boundaries	policy brief	policy makers	BE-Rural	2022	https://be-rural.eu/wp-content/uploads/2022/07/BE-Rural_Policy_Brief_Ecological_Boundaries.pdf

	framing the bioeconomy					
105	The BSAT-Bioeconomy Strategy Accelerator Toolkit	toolkit	policy makers	POWER4BIO		http://bioeconomy-strategy-toolkit.eu
106	BERST Platform	toolkit	policy makers	BERST		https://www.berst.eu/Platform.aspx?master=berst
107	BIOEAST Virtual Toolbox (VRT)	toolkit	policy makers	BIOEAST		https://bioeast.eu/cee/
108	Bioeconomy employment and value added: 2017 data – Infographic	infographic	business	European Commission	2019	https://knowledge4policy.ec.europa.eu/publication/bioeconomy-employment-value-added-2019-data-infographic_en
109	The Bioeconomy – a rural approach	video	business	Matís Iceland	2017	https://www.youtube.com/watch?v=JfLNRr2lFcg&list=UUY-frt3uTqgVZW-DLjoo5bA
110	BLOOM Bioeconomy Infographic	infographic	business	BLOOM	2019	· https://bloom-bioeconomy.eu/repository/bioeconomy-infographic/
111	Fact Sheet "New value chains and business models"	factsheet	business	LIFT	2020	https://www.bioeconomy-library.eu/new-value-chains-and-business-models/
112	ENRD Rural Bioeconomy Portal	website	business	European Network for Rural Development (ENRD)		https://enrd.ec.europa.eu/greening-rural-economy/bioeconomy/rural-bioeconomy-portal_en
113	Handbook on regional and local bio-based economies	project deliverable	business	Be-Rural	2020	https://be-rural.eu/resources/
114	Small-scale technology options for regional	project deliverable	business	Be-Rural	2020	https://be-rural.eu/resources/
115	Catalogue of bioeconomy solutions	platform	business	Power4Bio		https://www.bio-based-solutions.eu/#/
116	Transformation Support Tool	platform	business	Rubizmo		https://rubizmo.eu/business/transformation-support-tool

117	Best Practices Atlas	platform	business	Enabling		https://atlasbestpractices.com
118	AlpBioEco factsheet - Apple value chain	factsheet	business	AlpBioEco	2021	https://www.alpine-space.org/projects/alpbioeco/projects-results/final-report-factsheets/factsheets-en/02_hsa-abe-fact-sheets_englisch-bl-apple.pdf
119	AlpBioEco factsheet - Walnut value chain	factsheet	business	AlpBioEco	2021	https://www.alpine-space.org/projects/alpbioeco/projects-results/final-report-factsheets/factsheets-en/03_hsa-abe-fact-sheets_englisch-bl-walnuts.pdf
120	AlpBioEco factsheet - Herbs value chain	factsheet	business	AlpBioEco	2021	https://www.alpine-space.org/projects/alpbioeco/projects-results/final-report-factsheets/factsheets-en/04_hsa-abe-fact-sheets_englisch-bl-herbs.pdf
121	Replicable Roadmap to analyse bio-based value chains	Report	business	AlpBioEco	2021	https://www.alpine-space.org/projects/alpbioeco/projects-results/roadmap_kern-final_03-07-20_final.pdf
122	Tech4Biowaste database:	database	business	Tech4Biowaste	2022	https://tech4biowaste.eu/database/
123	Biomass availability, quality, supply and sustainability	factsheet	business	LIFT	2020	https://www.bioeconomy-library.eu/biomass-availability-quality-supply-and-sustainability/
124	Process Flows Platform	platform	business	Enabling	2018	https://www.enabling-project.com/platforms#process-flows
125	Biomass Trade Platform	platform	business	Enabling	2018	https://www.enabling-project.com/platforms#biomass-trade-platform-
126	Tools for biomass chains	platform	business	S2Biom	2016	https://s2biom.wenr.wur.nl/web/guest/home
127	Bio2Match tool	platform	business	S2Biom	2016	https://s2biom.wenr.wur.nl/web/guest/bio2match#_48_INSTANCE_JVu9ChXOqtRc_%3Dhttps%253A%252F%252Fs2biom.wenr.wur.nl%252Fmatchingtoolviewer%252Findex.html%253Fclassic%2526

128	Biomass Data Story	platform	business	ICT-BIOCHAIN	2019	https://ictbiochain.eu/platform/biomass-data-story/#
129	Forest Energy Atlas.	database or repository	business	BalticForBio	2021	https://forest-energy-atlas.luke.fi
130	ERIFORE: European Research Infrastructure for Circular ForestBioeconomy.	website	business	ERIFORE	2017	http://i2m.bordeaux.inra.fr/erifore/
131	Geoportal tool, European Wood Waste Platform	platform	business	BIOREG	2018	https://www.bioreg.eu/platform/
132	Bio-based products From idea to market "15 EU success stories"	report	business	European Commission	2019	https://op.europa.eu/en/publication-detail/-/publication/23ab58e0-3011-11e9-8d04-01aa75ed71a1
133	Circular Bio-based Europe Joint Undertaking (CBE JU)	website	business	CBE JU		https://www.cbe.europa.eu/
134	Business Plan	pageflow	business	ProBIO		http://www.probio-project.eu/pageflow.html
135	BUSINESS PLAN WRITING FOR BIOECONOMY RESEARCHERS	video	business	CommBeBiz	2017	https://commbebiz.eu/?post=business-plan-writing-for-bioeconomy-researchers-
136	MARKET PARTNER RESEARCH FOR BIOECONOMY RESEARCHERS	video	business	CommBeBiz	2017	https://commbebiz.eu/?post=market-partner-research-for-bioeconomy-researchers-
137	Innovation Services	website	business	SuperBIO	2016	http://www.h2020-superbio.eu/innovation-services
138	About BIOOPEN	website	business	BIOOPEN	2017	https://www.biopen-project.eu/about/
139	Bioeconomy ventures Platform	platform	business	BioeconomyVentures		https://platform.bioeconomyventures.eu/
140	Available courses	video	business	Mpowerbio		https://courses.mpowerbio.eu/

141	BIOSWITCH TOOLBOX	toolkit	business	BIOSWITCH		https://bioswitch.eu/bioswitch-toolbox/
142	Bioways factsheets	factsheet	business	BIOWAYS	2018	https://www.bioways.eu/bio-learn/factsheets/
143	Best practices and challenges on multi-stakeholder and cross sector interconnections	factsheet	business	Biobridges	2019	https://www.biobridges-project.eu/en/results/factsheet-best-practices-and-challenges-on-cross-sector-interconnections-/
144	Interreg Danube Transnational Programme DANUBIOVALNE	website	business	DANUBIOVALNE	2017	http://www.interreg-danube.eu/approved-projects/danubiovalnet/outputs
145	Open innovation platforms and facilities	factsheet	business	LIFT	2020	https://www.bioeconomy-library.eu/open-innovation-platforms-and-facilities/

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www.transition2bio.eu
info@transition2bio.eu

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