Open-BIO
Opening bio-based markets via standards, labelling and procurement

Work package 2

Dissemination

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Report of first Advisory Workshop

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Publishable summary

On 7 April 2014, the EU funded research project Open-Bio, held its first advisory workshop in Cologne, Germany. The goal was to inform stakeholders about the project itself, its participants, ideas and plans, and to consult with advisory partners and stakeholders about the research that lied ahead. The workshop was combined with the second Advisory Workshop taking place for another FP7 research project on bio-based products' standardization: KBBPPS. Since both projects are closely interlinked and address the same stakeholders, it was decided to combine the events, also to save resources and efforts for both organizers and participants.

Producers of bio-based plastics and chemicals, bio-based material suppliers, representatives of industry associations and testing organisations visited the workshop. The presentations gave an overview of the scope and objectives of the research work in each work package. Due to the link with the other project, progress on some fields of research was reported. Questions and discussion came up concerning the affordability of more sophisticated testing methods for customs labs. Also the mass balance approach was once more debated quite controversially, with a representative of BASF providing insights and taking home some questions and concerns. The concerns were mostly about communicating the results of such an approach, stressing the differences between carbon saving vs. biomass content, or process vs. product allocations.

The research on functionality barriers for bio-based products was presented as a built-upon of the KBBPPS work. It was discussed how to check the functioning of a product over the whole life-time. Next, the question how to select the correct products was debated. The stakeholders suggested introducing cosmetic and cleaning products and for the functionality itself look at medical (i.e. chemical) functionality. It was concluded that at least a consumer product shall be part of the study.

The research on bio-degradation different from the KBBPPS project was extensively presented an discussed. For the marine bio-degradation a lab-comparison with PLA was suggested. Its normal degradation mechanisms seem known, where the influence of mechanical erosion and microbial populations could be of interest. For compostability, the first goal of the Open-Bio project, to advice on necessary revision of EN 13432:2000, was put forward. The advice of the workshop was to focus on important EU technologies.

On the part of communicating the properties, the partners put forward their ambition to develop a set of criteria and a strategy for implementing a combined eco-bio-label. The participants were informed about the plans around information gathering and assessing around labelling and product information. They learned about the social acceptance research envisaged. But had not much to add, merely because data gathering still had to start.

1 Introduction

The EU funded research project "Open-Bio", Opening markets for bio-based products: Standardisation, labelling and procurement, develops insight to the overall sustainability and applicability of bio-based products via tailored-to-demand product information (in a database) and a recognisable label. There are specific standards and EU Directives that cover some aspects, but the goal is to investigate and develop concepts that are generally applicable to bio-based products. A large part of the project covers research and feasibility demonstration on bio-based content determination techniques, functionality testing and end-of-life intractability. The latter is both active, via composting, recycling or gasification and passive, as biodegradation in soil, water and marine environments. The results thereof will be incorporated in the development of clear, concise and socially acceptable labels, certification and product information in a broader sense.

On 7 April 2014, the project held its first advisory workshop, from 10:30h to 17:30h at the Maternushaus, Kardinal-Frings-Str. 1-3, 50668 Cologne, Germany. The goal was to inform stakeholders about the project itself, its participants, ideas and plans, and to consult with advisory partners and stakeholders about the research that lied ahead. The programme was split in four sessions covering all of the Open-Bio work:

- Bio-based content and sustainability methodologies,
- (Bio-based) product functionality and its impacts.
- End-of-life of bio-based products, and
- Communicating bio-based products.

Each work package was shortly presented and specific questions were posted before the group of participants. These were addressed in a discussion part after each of the four sessions.

The workshop was combined with the second Advisory Workshop taking place for another FP7 research project on bio-based products' standardization: KBBPPS. Since both projects are closely interlinked and address the same stakeholders, it was decided to combine the events, also to save resources and efforts for both organizers and participants.

Producers of bio-based plastics and chemicals, bio-based material suppliers, representatives of industry associations and testing organisations visited the workshop. Ortwin Costenoble (NEN), project manager, was in charge of moderating the workshop.

2 Participant list

First name	Family name	Company / Organisation	Country
Jean	Bausset	IAR-Pole	France
Martin	Behrens	Fachagentur Nachwachsende Rohstoffe e.V.	Germany
Michael	Carus	nova-Institut GmbH	Germany
Ortwin	Costenoble	NEN Energy	Netherlands
Lara	Dammer	nova-Institut GmbH	Germany
Asta	Dr. Eder	nova-Institut GmbH	Germany
Oliver	Dr. Ehlert	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH	Germany
Thomas	Dr. Farmer	Department of Chemistry, University of York	United Kingdom
Jonas	Markusson	SEKAB	Sweden
Petra	Michiels	Vinçotte - OK biobased	Germany
Antonis	Mistriotis	Agricultural University of Athens	Greece
Laurianne	Dr. Moity	Green Chemistry Centre of Excellence	United Kingdom
Karin	Molenveld	DLO (Wageningen UR Food & Biobased Research)	Netherlands
Nike	Mortier	OWS	Belgium
Johnny	Pallot	Roquette	France
Jan	Dr. Peuckert	TU Berlin	Germany
Natalia	Pieton	TU Berlin - FG Innovationsökonomie	Germany
Rainer	Quitzow	Technische Universität Berlin	Germany
James	Dr. Sherwood	University of York	Germany
Carsten	Dr. Sinkel	BASF SE	Germany
Thomas	Stintzing	SKZ - TeConA GmbH	Germany
Philipp	v. Bothmer	Fachagentur Nachwachsende Rohstoffe e.V., FNR	Germany
Maarten	Dr. van der Zee	Wageningen UR Food & Biobased Research	Netherlands
Erwin	Vink	NatureWorks BV	Netherlands
Hasso	von Pogrell	European Bioplastics	Germany
John	Vos	BTG Biomass Technology Group BV	Netherlands
Miriam	Dr. Weber	HYDRA Institut AG	Germany

3 Workshop agenda

10.30		Welcome, Goal of the Workshop	Ortwin Costenoble, NEN
10:40	11:00	Projects overviews - scopes and research goals The differences and the overlaps	Ortwin Costenoble, NEN
Bio-based content and sustainability methodologies			
11:00	11:20	KBBPPS WP3: Bio-based carbon content - Status quo of research and standards; planned work ahead	Jaap Hooijmans, ECN
11:20	11:40	KBBPPS WP4: Biomass content - Novel treatment methods, up-dates on direct and indirect measuring methods	James Sherwood, University of York
11:40	11:50	Open-Bio WP3: Definition of renewable elements and molecules	Tom Farmer, University of York
11:50	12:10	Open-Bio WP3: Bio-based content methods and sustainability impacts	Jaap Hooijmans, ECN
12:10	12:45	Questions and feedback on research results and ideas regarding future steps	*Open discussion*
12:45	13:30	Lunch break	
Bio-based product functionality and its impacts			
13:30	13:45	KBBPPS WP5: Barriers for bio-based products in standards and norms	Asta Eder & Michael Carus, nova-Institute; Ortwin Costenoble, NEN
13:45	14:05	Open-Bio WP4: Product functionality - research plans and intentions	Karin Molenveld, WUR
14:05	14:20	Questions and feedback on research results and ideas	*Open discussion*
End-of-life options			
14:20	14:40	KBBPPS WP6: Status quo of research on biodegradability of bio-based lubricants in freshwater and soil Open-Bio WP5: In-situ biodegradation of bio-based products in freshwater and soil - next steps	Nike Mortier, OWS
14:40	15:00	Open-Bio WP5: Marine biodegradation testing - research plans and intentions	Antonis Mistrotis, Agricultural University of Athens
15:00	15:20	Open-Bio WP6: Industrial/ home compostability, biodegradation in biogasification plants and recyclability of bio-based products - research plans and intentions	Nike Mortier, OWS
15:20	15:45	Questions and feedback on research results and ideas regarding future steps	*Open discussion*
15:45	16:00	Tea & coffee break	
Communicating bio-based products			
16:00	16:20	Open-Bio WP7: Labelling of bio-based products - research plans and intentions	Lara Dammer, nova-Institute
16:20	16:40	Open-Bio WP8: Product information list - research plans, with special focus on overview of existing lists	Martin Behrens, FNR
16:40	17:00	Open-Bio WP9: Social acceptance - research plans, with special focus on methodology and first results	Marieke Meeusen, WUR
17:00	17:25	Open discussion on research results and plans	*All*
17:25	17:30	Short conclusion of the day and next project workshops	Ortwin Costenoble, NEN

4 Workshop proceedings and conclusion

4.1 Bio-based content and sustainability methodologies

The first Open-Bio presentation of the day was by Tom Farmer (University of York) who introduced the attempts to define renewable elements of (bio-based) products. For long-term sustainability the concept matters towards renewable molecules or put it differently the prevention of depletion of elements As a first initiative the project presented the initial attempts to define recyclable, reusable and renewable. The workshop participants were given a small questionnaire about there connotations regarding each of these three terms. The same questionnaire was presented to the attendants of the conference the following days.

The last presentation under the session was given by Jaap Hooijmans (ECN), in which he presented all anticipated work regarding broad inter-laboratory studies for bio-based content. The ideas around semi-direct and indirect measurement techniques were discussed. The combination of 14C-measurement and elemental analysis was presented as convenient for determining the bio-based content only when you know the production process. The mass balance technique would on the other hand be of interest for process measurements. Jaap also presented the isotopes technique that would be further developed and might give an indication of the sustainable production (origin) of the product. In the discussion thereafter, the workshop participants underlined the importance of good labels and claims on what the bio-based derived from each test actually means.

4.2 (Bio-based) product functionality and its impacts

After the KBBPPS part of this session the Open-Bio work was introduced by Karin Molenveld of DLO-FBR. She started with explaining the relationship with and the differences from the KBBPPS work. She presented the selection of product categories to be studied as defined so far on the basis of the first study results. These contained Industrial Lubricants & Fluids, Solvents and Bio-surfactants, and the usages in Agriculture & Horticulture, Packaging & disposables, Automotive and Building & Construction. Questions discussed to the audience were what should be the main criteria for selection and whether categories were missing. An idea was presented to introduce cosmetic and cleaning products. One participant suggested the possibility to look at medical (as part of chemical) functionality, but Karin would need to check if the partners had that capability. It was agreed amongst the participants that at least one consumer product should be part of the study.

4.3 End-of-life of bio-based products

Nike Mortier (OWS) provided an update of the status quo of the research in KBBPPS, dealing with bio-based lubricants in freshwater and soil, and the follow-up on more products in Open-Bio. Round Robin testing on various products using the methodology of KBBPPS

would be the focus of the latter project. Goal was to refine the test scheme and acceptance criteria and extend the test methods to include biodegradability of several bio-based materials No specific request on the projects' work were forwarded by the workshop participants.
Antonis Mistrotis (AUA) continued with the marine biodegradation testing. He explained the three environments that would be mimicked in lab tests and checked in real situations on Elba and in Greece. Deep-sea environments, as mentioned by one participant, would be interesting from a pollution point of view, but cannot be assessed due to the limited time and budget.

Antonis continued by explaining the work plan. When presenting the foreseen materials, discussions amongst the participants on what shall be used started. PBAT, PBSE or PBTS were indicated. The suggestion was made to also look at PLA in the lab tests, as this seems to be a known material in other tests. For correlation purposes this might be of interest. Next, it may be interesting to check the degradation under influence of mechanical erosion and microbial populations could. Antonis and Mirjam Weber (Hydra) would check whether ths additional materials could be accommodated in the field tests, too. Another suggestion from the floor, to use same materials in some of the fresh and marine water testing was well received by the partners.

Nike Mortier then took the floor again to discuss the work package on intentional degradation and re-use of products. She explained that the EC call had demanded to check for discrimination possibilities between home and industrial composting. This had been underlined by the Green paper on a European strategy on plastic waste. Next, to check the recyclability as it was sometimes difficult for companies to separate the bio-based products (supported by OECD reports). Nike started off with explaining each of the tasks. The first goal was to advice on necessary revision steps for EN 13432:2000, the packaging composting standard.

Biological recyclability research was the following topic explained. Anaerobic digestion has several type of processing. Focus of the project will be on most important technologies employed in Europe. A participant suggested checking bio-waste collection bags and food service items. The audience shared the view that solvents and lubricants were less relevant for gasification purposes. Mechanical recycling would be led by DLO-FBR, whereas University of York were developing ideas around chemical recycling. There were no comments or further suggestions from the audience concerning these topics.

4.4 Communicating bio-based products

After the break, Asta Eder (NOVA) introduced the work that might lead to a combined eco- and bio-based label. The work would start with an analysis of the Ecolabel and a further look at existing European labels that cover any of the aspects such as sustainable biomass, biodegradability or end-of-life options. The ambition is to have a set of criteria and to define a strategy for implementing a combined eco-bio-label.

The work regarding the development of a European product information database on bio-based products was introduced by Martin Behrens (FNR). The prime goal was that the database should be used for procurement purposes, both business-to-business and business-to-public procurers. The database could also be used to promote the uptake of bio-based products in consumer markets. The project partners had, also on the basis of work by WG 4 and WG 5 of CEN/TC 411, developed a public questionnaire. This to generate information on the importance of knowing certain product data and if these then should also be standardized in terms of qualitative or quantitative reporting. In coordination with the work on social acceptance, a selection of six Member States had been made to focus questions on. First results were expected in autumn 2014 after which the database idea would be developed.

The last presentation was given by Marieke Meeusen (DLO-LEI), who explained that Open-Bio investigates the needs and demands of consumer groups and develops a system that can provide the relevant information. Part of the project is also to conceptualize an Ecolabel that can be applied to bio-based products to strengthen consumer confidence and boost market demand. Marieke explained the general approach of investigations for each of the end-users: business, public procurers and consumers. She also highlighted the work to involve NGO's. The social acceptance investigations will already finish halfway the project time and consist of two phases. Enquires will be executed with end-users in the Netherlands, Germany, Denmark, Czech Republic, Slovenia and Italy. An online survey and Delphi Rounds would be initiated, whereas the consumers would be approached via focus groups and more quantitative surveys.

4.5 Overall conclusion

To recapture all the work, Ortwin Costenoble (NEN) went through questions asked by the project partners not yet discussed. Especially the communication bit seemed relatively new and unfamiliar to most of the people in the audience. Next, data gathering and idea development had still to start. In any case many participants were happy to fill in the questionnaires of WP3 (definition search) and WP8 (information importance). As it was a lot of information for one day, it was agreed that the workshop participants could still present their comments within a reasonable time frame to the work package leaders.

Ortwin Costenoble concluded that some good exchanges had taken place and relevant ideas had been presented to the researchers. Some topics had raised more discussion, but he concluded that no controversies had come forward and that Open-Bio did not embark in wrong direction. The next advisory workshop would be scheduled for the third quarter of 2015. General information about this workshop, together with the agenda, the participant list and the given presentations is available at http://www.bio-based.eu/advisory-workshop.