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

Work package 8

Product information list

Deliverable N° 8.4:
Product information list guidelines

Public

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Abbreviations

B2B	business to business
B2C	business to consumer
B2P	business to public procurer
BBP(S)	bio-based products (and services)
BE	Belgium
BTG	B.T.G. Biomass Technology Group BV
CEN	European Committee for Standardization
CO_2	Carbon Dioxide
CPV	Common Procurement Vocabulary
DE	Germany
DoW	Description of Work
ERRMA	European Renewable Resources and Materials Association
FNR	Fachagentur Nachwachsende Rohstoffe e.V.
GPP	Green Public Procurement
IAR	Industries & Agro-Resources
iBIB	International Business Directory for Bio-based Materials
ICLEI	Local Governments for Sustainability, founded in 1990 as the International Council for Local Environmental Initiatives
ICT	Information and communications technology
InnProBio	Public procurement networks on innovative bio-based products
LCA	Life Cycle Analysis
LCI	Life Cycle Impact
NaWaro	NachWachsende Rohstoffe *(English: Renewable Resources)*
NEN	Nederlands Normalisatie Instituut
NL	Netherlands
nova	nova-Institut für politische und ökologische Innovation GmbH
PEFC	Programme for the Endorsement of Forest Certification (PEFC) also known as Pan-European Forest Certification
PP	Public Procurement
TC	Technical Committee
TUB	Technische Universität Berlin
WG	Working Group
WP	Work Package
WPP	Website Project Plan

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We would like to thank all stakeholders, from the business, public procurement, and research community that provided feedback during a range of validation events organized and implemented in spring 2015. The validation process included two Dutch validation sessions held in The Hague and Middelburg, two international validation sessions held in Cologne and Ghent, two webinars and two phone interviews.

Special thanks go to all persons that organised, or help organising, these various validation events. Some also helped with the reporting of the event. Beyond the Open-Bio consortium members this included:

- Jan van Spronsen of the Inkoop Uitvoeringscentrum of the Dutch Ministry of Economic Affairs (EZ), Anna Schilizzi of the Netherlands Enterprises Agency (RVO) and Floris den Boer of the Dutch Public Procurement Expertise Centre (PIANOo) for the event held in The Hague.
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1 Publishable summary

This report describes final guidelines for a European product information database of bio-based products for use by various target groups, i.e. business-to-procurer (B2P), business-to-consumer (B2C) and business-to-business (B2B) markets. The research work reported here was carried out primarily by BTG (John Vos), FNR (Martin Behrens), TUB (Luana Ladu and Jan Peuckert) and nova (Lara Dammer)[1]. The present report was prepared and edited by BTG, integrating contributions from FNR, TUB and nova.

The report first discusses in Chapter 2 the methodology adopted for database-related work, and the results achieved to date. This is followed in Chapter 3 by a description of the initial database design (explained in detail in the restricted Deliverable D8.3, Scheme Guidelines dated December 2014). Thereafter, Chapter 4 presents an overview of the results of testing and validating this initial database design in the spring of 2015. The feedback obtained during this testing and validation period has been incorporated in the revised database design, described in Chapter 5. In Chapter 6, research issues and work concerning the future development of the database are outlined.

Within Open-Bio only the concept for a product database will be tested and demonstrated, as there are no resources available to maintain and sustain the product database beyond the project lifetime. However, the key developers of the Open-Bio product database have been awarded another EC grant in the frame of the Horizon 2020 research project InnProBio[2]. Within the InnProBio project the product database developed in Open-Bio will be maintained and expanded for an additional 17 months, as Open-Bio will finish in October 2016 and InnProBio only in February 2018.

[1] Full names: BTG Biomass Technology Group BV, Fachagentur Nachwachsende Rohstoffe e.V., Technische Universität Berlin and nova-Institut für politische und ökologische Innovation GmbH.
[2] http://cordis.europa.eu/project/rcn/194784_en.html

2 Methodology and earlier results

Open-Bio Work Package (WP) 8 aims at developing a European product information database and interaction tool on bio-based products that could be used as a communication tool among their producers (the business-to-business, or B2B, market), for use in public procurement (the business-to-procurer, or B2P, market), as well as to promote the uptake of bio-based products in consumer markets (the business-to-consumer, or B2C, market).

This chapter describes the process and methodology used towards the development of a final database concept. Some previous deliverables are mentioned and summarised. For detailed insights please refer to the original Work Package 8 documents[3].

2.1 Initial database design process

Existing bio-based product databases and best practices in procurement and dissemination activities were mapped in Task 8.1 [Mapping of available product and procurement information]. Relevant target groups and their specific product information requirements were identified in Task 8.2 [Target group requirements], in combination with work carried out in Task 9.1 [Creating an overview of requirements of stakeholders] of WP 9, which focuses on the social acceptance criteria of bio-based products.

Based on these assessments a concept for the database and interaction tool was elaborated in Task 8.3 [Definition of product information list], reported in Deliverable D8.3 [Scheme Guidelines]. The research work in the tasks 8.1 through 8.3 took place in 2014.

2.2 Available tools and best practices

Within Task 8.1, existing product information databases were mapped and analysed in terms of target group focus, information content and usability. These were used for an analysis of best practices. Criteria for being classified as a best practice included success/longevity (as far as identifiable), user friendliness and quick access to vital information. The research showed that the assessed B2P sites often deal with sustainable or green procurement (rather than particularly/exclusively bio-based procurement) and that they focus on the national framework of the country that they operate in. B2B sites, on the other hand, more often have a broader, more European focus. Lessons learned from the mapping exercise show that knowledge about target group requirements are key, as is a clear structure regarding the information presented on a website. This research work is reported in detail in Open-Bio Deliverable D8.1 *Available tools and best practices*.

2.3 Requirements of product information lists

Within Task 8.2, representatives of the three (B2B, B2P, B2C) stakeholder groups were surveyed about their product information requirements. A stakeholder survey was conducted jointly with WP9 (Social Acceptance) to assess stakeholders' needs for information and

[3] http://www.biobasedeconomy.eu/research/open-bio/publications/

standardization. Stakeholders were presented a list of possible product information items and invited to makes suggestions to streamline product information requirements. Results from public procurers and business show a general support for standardized product information.

Regarding the B2C target group, it was concluded that the general public currently has a lack of knowledge about bio-based products and therefore has a lot of questions about them. However this does not mean that a lot of detailed information is needed. On the contrary, the information that is targeted at consumers rather needs to be very basic, explaining the concept of bio-based products. In a second stage focusing on detailed product information might become necessary. This research work is reported in Open-Bio Deliverable D8.2 *Requirements of product information lists*.

2.4 Scheme guidelines

Deliverable D8.3 *Scheme guidelines*, focused on drafting initial guidelines for the online database and interaction tool. Such a tool should present product-specific as well as general information about bio-based products that is tuned to each of the three target groups (B2P, B2B and B2C). The report also evaluated options for the classification of bio-based products and reviewed what product information details should be included in the bio-based products database. General guidelines for setting up and filling the product information database were established. Also, it explored maintenance and sustainability aspects of the database.

The scheme guidelines, also referred to as the initial database design, are discussed in more detail in Chapter 3.

2.5 Designing, testing, refining and filling the database

To test and validate this initial database design a range of stakeholder events, including workshops, webinars and phone interviews were organized at the European and national level. During the discussions with stakeholders, experts from TUB, BTG, and FNR provided answers and clarifications to questions raised and comments made.

The stakeholder suggestions provided the basis for fine-tuning the original database design. Stakeholder feedback was processed and considered to the extent that this was considered practical to implement. Compared to the initial design, several minor modifications were made, however, the overall structure and set-up of the database was left intact.

Stakeholder engagement and suggestions are discussed in Chapter 4. The revised database design is discussed in Chapter 5. Further development of the database is discussed in Chapter 6.

3 Initial database set-up

This chapter describes the initial Open-Bio database set-up, in terms of target groups and scope, product classification and scope, product information needs, database structure and design guidelines. The information presented here is drawn from restricted Open-Bio Deliverable D8.3, Scheme Guidelines.

3.1 Database scope

Based on research work carried out in 2014 it was concluded that for product information on bio-based products B2B stakeholders would not need a newly established Open-Bio product database, for the following reasons:

- Businesses operating as intermediate consumers can (continue to) make use of existing material-based product databases or marketing sites (e.g. Agrobiobase[4] or the International Business Directory for Bio-based Materials - iBIB[5]);
- They do not necessarily need Open-Bio support to guarantee the bio-based (carbon) content of a product, but will get information from the supplier and will be able to evaluate claims, e.g. by requiring certification or paying for testing;
- If they care about other product criteria (this is very product, or product group, specific) such as sustainability aspects, again they will usually have the technical capacity to understand and verify relevant product information and technical details.

For B2B market players operating as final consumers of end products, the product database does not need to be different than that for B2P (see below).

Surveys, including the one reported in Open-Bio Deliverable D9.1, show that consumers and citizens in general have little awareness and knowledge of bio-based end products, and that they have (positive) associations with environmental issues. However not every bio-based product can be described as environmentally friendly per se. Consumers will first need to understand better what the term bio-based and the concept behind it means. Only then they will be able to formulate product information needs. Therefore at the present time raising consumers' awareness and knowledge of bio-based products and services (BBPS) may be more effectively achieved using alternative information tools and measures. This could include the use of labels, but also the development of a more intuitive, visually attractive presentations of sample bio-based end products and their key aspects. The Dutch web application *Biobased Huis* (see Figure 1) is a good example of the latter.

The arguments presented above render the B2P market and the procurement of bio-based end products (and services) as the main focus of the Open-Bio product information database. In this context procurers may include public-sector as well as private-sector procurers.

[4] http://www.agrobiobase.com/
[5] http://www.bio-based.eu/iBIB/

Currently no European bio-based product database with (public) procurement focus exists; there are only some national services, each with limited regional focus. Considering the notion of a common European market for bio-based products there is a need to present product information at the European level. It is suggested to liaise with these websites, if suitable, however keeping in mind that public procurers are very much focused on their national conditions and circumstances.

Figure 1: Screenshot of Dutch web application Biobased Huis, showing B2C categories

3.2 Bio-based product classification system

Open-Bio task 8.1 mapped in detail 24 product information lists with a procurement (B2P) focus, and 23 product information lists with a focus on business-to-business (B2B) communication. It was found, probably due to the modest role that bio-based products play in EU28 public procurement at present, that just a few of the B2P classification systems were restricted to bio-based products only i.e. NawaRo im Einkauf (previously known as NawaRo-Kommunal)[6], BioPreferred[7] and Soy Biobased Products[8]. Only one of these (the first) focuses on Europe or an EU member state (i.c. Germany).

The classification systems applied in the evaluated product information lists reflect that the focus of public procurement is more on procuring services than on procuring products. Therefore the classification system is commonly based on application areas.

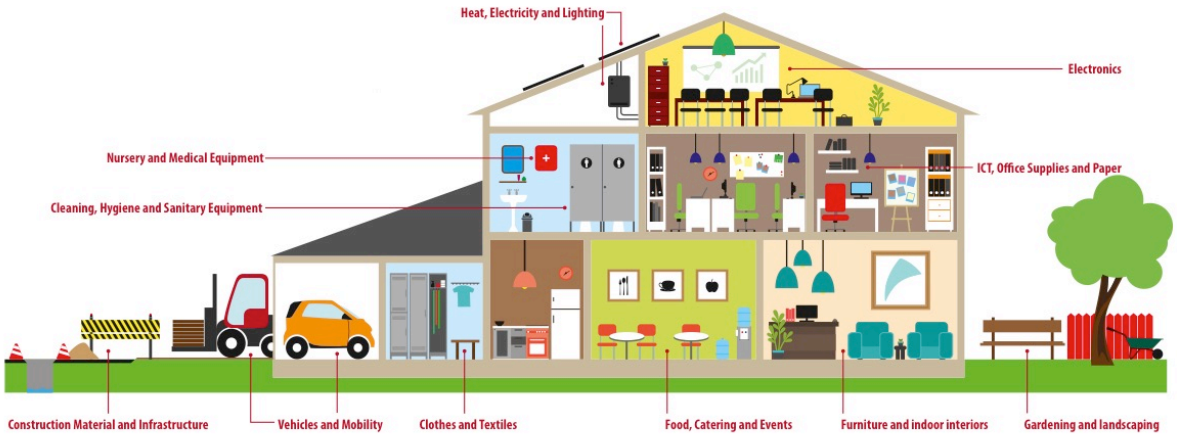
[6] http://beschaffung.fnr.de/
[7] http://www.biopreferred.gov/
[8] http://www.soybiobased.org/products/

By lack of a suitable existing European classification system the WP8 team carried out a harmonisation exercise, which spanned the B2P websites mapped in D8.1, to obtain a suitable and practical bio-based product classification system. The exercise resulted in the following 11 product categories[9]:

1. Food, catering and events
2. Textile products and clothes
3. ICT, office supplies and paper
4. Electronics
5. Heat, electricity and lighting
6. Vehicles and mobility
7. Cleaning, hygiene and sanitary
8. Nursery and medical equipment
9. Construction and infrastructure
10. Furniture and indoor interiors
11. Gardening and landscaping

The idea is that future database users can search these categories using different types of (text) searches, and that they can browse these categories using a graphical interface. Figure 2 shows a sample visualisation of such graphical interface, inspired by the Dutch bio-based house shown above.

Figure 2: Sample visualisation of graphical interface for B2P product categories



During the testing and validation stage, B2P stakeholders were asked for their feedback on the suitability of the proposed classification system. The feedback obtained is discussed in the next Chapters.

[9] Some of these application categories may currently contain only a single or a few bio-based products. Individual products become relevant for public procurement only when at least 3-4 different suppliers are available.

3.3 Database structure

The first round of the Open-Bio Delphi survey, reported in Deliverable D8.2 *Requirements of product information lists*, yielded a prioritised list of production information items considered of interest to B2P and B2B respondents respectively. Over 70 percent of the B2B stakeholders supported the inclusion of the following five product attributes in the bio-based product database: (a) percentage of bio-based content, (b) CO_2-emissions, (c) Environmental Life-Cycle Impact, (d) Toxicity and (e) Recyclability. Over 70 percent of the B2P stakeholders supported the same product attributes plus in addition six more: (f) type of feedstock, (g) origin of feedstock, (h) biodegradability, (i) compostability, (j) recycled content and (k) life-cycle costs. It was concluded that these items should be used to describe bio-based products in the Open-Bio product database for B2B and B2P stakeholders.

All of these product attributes were candidates to be included in the Open-Bio database. Taking into account both (a) the intended use/users and (b) the costs of compliance, the top part of this prioritised list was selected to make up the key characteristics to be used in the Open-Bio database.

By introducing 3 information layers, representing required (obligatory), preferred (voluntary) and optional items respectively, a virtual distinction was made between different information categories, as follows:

1. Required (obligatory) information must always be provided, for the sake of uniquely identifying the product and its supplier.
2. Information on items in the preferred (voluntary) category can be provided on a voluntary basis, but is essential to increase the relevance of the database.
3. The third information category relates to any additional information a supplier wishes to provide.

Obligatory and preferred (voluntary) information needs to be provided according to a fixed format (template); no such restriction applies to the additional (optional) information category.

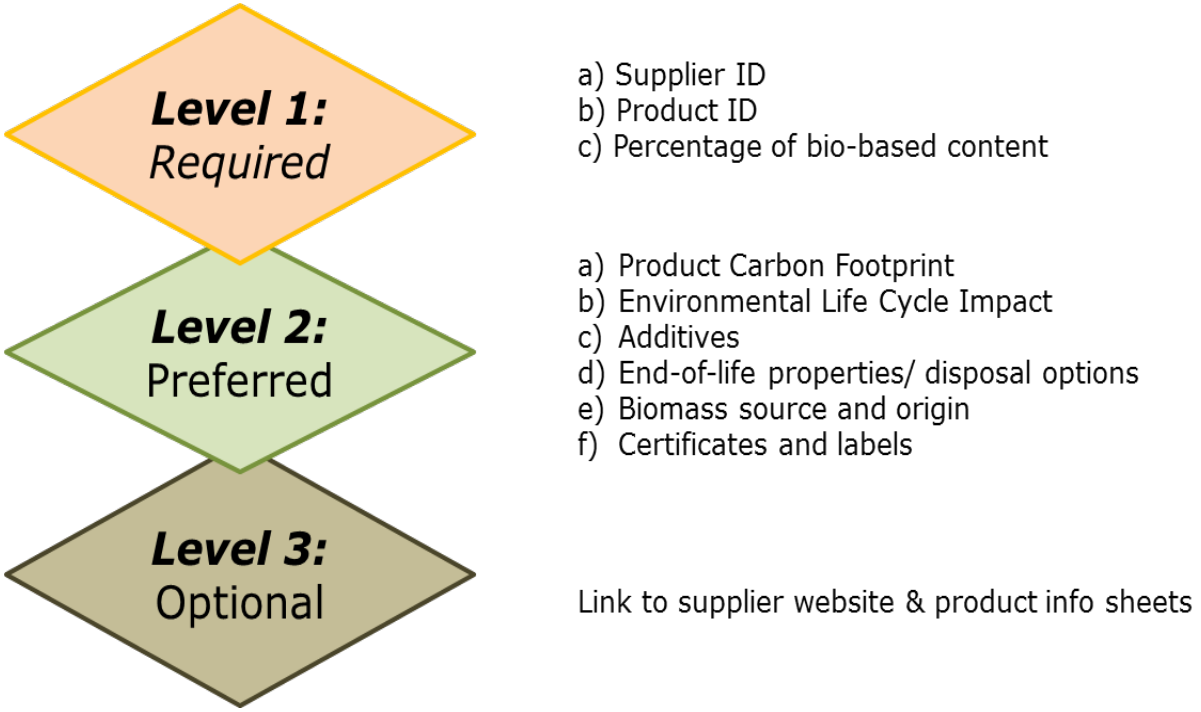
The 3 virtual layers of information are visually represented in Figure 3.

3.4 Product attributes

The costs of compliance can constitute a significant barrier to suppliers (including small and medium sized enterprises) to sign up for the Open-Bio, or any other, product database. It is important to be selective in what data is labelled required/obligatory.

With the idea of being able to set a minimum threshold, Open-Bio had selected a single attribute, i.e. “bio-based content”, to be classified as “obligatory” information. The only other information fields covered in this category solely serve for the identification of the bio-based product and its supplier.

Figure 3: Visualisation of the 3 information layers



Over time, when adequate international standards and certification systems become available, some aspects that in this current version of the database are qualified as preferred/voluntary may be designated as required/obligatory e.g. environmental impact (in particular CO_2/GHG emission reduction) or biomass sustainability.

The above results are incorporated in the following tentative set-up for the Open-Bio bio-based product information list/database (also shown in Figure 3 above):

Level 1 (basic information) shall include all of the following:

- Supplier information (name, contact details etc.)
- Product name (and other identifiers e.g. the CPV code[10])
- Intended product use (application)
- % of bio-based content (or % of bio-based carbon content)

Level 2 (product specific details) would include some or all of the following:

- CO_2 Emissions
- Environmental Life Cycle Impact
- Toxicity

[10] The Common Procurement Vocabulary (CPV) is a single classification system for public procurement. It consists of 9,454 codes structured in a five-level tree hierarchy. Each CPV-code is made up of 8-digits and a wording that describes the type of works, supplies or services forming the subject of the contract. The purpose of the CPV is to make it easier for bidders to identify relevant tender notices. Bidders can find these by searching for CPV codes. Furthermore the CPV is available in all the European Union's 24 official languages. Thus, the CPV shall foster cross-border procurement in particular since it allows bidders to identify tender notices more easily in different languages.

- Recyclability/ Recovery options (Biodegradability, Compostability, Energy Recovery)
- Recycled content
- Biomass source and origin

Level 3 (company product information sheet)

- This layer can include any -further- product information that the supplier considers of relevance/interest. The content can be highly individual and suppliers will be free to report whatever information they deem necessary.

3.5 Database/website design guidelines

The draft scheme guidelines suggest the following approach (or procedures) for a functional design of the website hosting the future database:

Scope:

Website serving as information portal, comprising, among other things, product information database plus general information in simple terms on the ideas behind bio-based products.

Prime target group:

- Product information categorised to suit the demands of end product procurers (B2P market plus section of B2C market).
- General information to serve the demands of B2P, B2B and B2C markets.

Functionality:

- Flexibility (in browsing/searching the database and displaying/sorting results).
- Direct comparison between two or several (bio-based) products is an advantage.
- Distinguish between prerequisites and optional features.
- Functionality to connect with existing B2P and B2B websites.

Focus bio-based products and product groups:

- Both products and services (BBPS); for final use (end use).
- Initial focus on BBPS that are the most important from the buyer's prospective.
- Stakeholders and literature will be consulted to determine/fine-tune these.

Filling rules for bio-based products:

- Minimum bio-based content of 20%, measured according to the relevant norm.
- Evidence on the bio-based content may be self-declared or certified.
- Both manufacturers and traders will be able to submit applications.
- At later stage, minimum bio-based content may be raised, or extra criteria may be included.

Filling procedure for bio-based products:

- Harmonized product information sheets with a basic list of product characteristics.
- 3 levels: basic information, product specific details, additional details on product and supplier.

Ownership:

- Initial website ownership lays with the involved Open-Bio project partners.
- However, embedding in receptive environment is considered a prerequisite for long-term viability and sustainability.

4 Results of testing and validation of database set-up

4.1 Validation events organised

To test and validate this initial database design a total of eight validation events were organised and implemented in spring 2015 at the European and the national (Netherlands and Italy) level, as listed below[11]. Stakeholders that were consulted were mostly public procurers and business stakeholders (producers of bio-based products).

Dutch validation sessions, held on 30 March and 30 April 2015 respectively:
1. Dutch Public Procurement Stakeholders - National level (The Hague, NL);
2. Dutch Public Procurement Stakeholders - Provincial level (Middelburg, NL);

International validation workshops, held on 14 April and 26 May 2015 respectively:
3. International Validation Workshop - European level (Cologne, DE);
4. Open-Bio Advisory Workshop – European level (Brussels, BE);

International webinars, held on line, on 28 April and 22 May 2015 respectively
5. Webinar for Business Stakeholders – European level;
6. Webinar for Procurement Stakeholders – European level;

Structured telephone interviews in Italy, held on 5 June and 8 June 2015 respectively:
7. Interview with Sardegna Compraverde – National level (IT);
8. Interview with Programme for the Endorsement of Forest Certification - National level (IT).

Events 1 and 2 were organised by BTG, events 3 and 4 were organised by nova and events 5, 6,7 and 8 were organised by TUB.

During these events, stakeholder feedback was collected in a structured way. First, participants were asked to provide comments and suggestions on the proposed structure of the database. Secondly, they were invited to give comments on the type of information that producers of bio-based products should include for each product information item, and whether that information should be considered required, preferred or optional.

During the discussions, experts from the team of presenters (TUB, BTG, and FNR) provided answers and clarifications to questions and comments of the participants. The stakeholder suggestions provided the basis for fine-tuning the original database design.

[11] In addition, the PowerPoint presentation and accompanying questionnaires was distributed by email to members of the European Renewable Resources and Materials Association (ERRMA). However, this did not yield additional feedback.

A detailed report on the feedback received at each validation event is provided in a separate document[12]. The mentioned document details the feedback of individual stakeholders, and includes a list of stakeholders that participated in the validation events.

4.2 Detailed stakeholder feedback

The key feedback collected during the validation events from procurement and business stakeholders on general and specific questions regarding the database set-up and the information requested from suppliers is summarised in the following tables:

- **Table 1**: Feedback on general questions regarding the database set-up
- **Table 2**: Feedback on specific questions regarding information layer 1: required/obligatory information
- **Table 3**: Feedback on specific questions regarding information layer 2: optional/preferred information

In each of these tables separate columns are used for feedback originating from each of the two stakeholders groups.

Feedback on general questions (Table 1)

Procurement and business stakeholders were asked to give feedback on some more general questions regarding the database set-up, including the following:

- Do you have any views/comments on the 3-level structure?
- Any important aspects missing in the architecture? Are there aspects that need further clarification?
- Would you consider using this database? If not, why not?
- Do you have further general comments?

Opinions ranged widely, making it impossible to meet the expectations from each and every individual. Or even of the stakeholder group as a whole. For example, regarding the number of product attributes (characteristics) to be included at the various information levels procurement and business stakeholders hold very different views. Obviously, the expressed ideas can only be absorbed to a limited extent i.e. as is deemed practical.

Besides these specific questions, stakeholders were invited to answer several more general questions. Feedback received is listed in Table 1 below.

[12] The internal and confidential report is entitled "*Internal report on the testing of the database scheme"* and was prepared by Luana Ladu (TUB), Jan Peuckert (TUB), John Vos (BTG) and Martin Behrens (FNR).

Table 1: Overview of stakeholder feedback on general questions regarding the database set-up

Aspect: **Structure** Question: Do you have any views/comments on the 3-level structure?	
Procurement	**Business**
• As many attributes as possible should flow from layer 2 and 3 to layer 1 (required information); • Possible additional product attributes on social aspects should be included (especially for the wood industry).	• Do not include too many attributes. • Keep the database set-up flexible
Aspect: **Completeness and clearness** Questions: Any important aspects missing in the architecture? Are there aspects that need further clarification?	
Procurement	**Business**

• There is no reference to Total Cost of Ownership or Life-Cycle Costing
• The approach is good, because it is facing usability, legal support and networking;
• The database should include a key to abbreviations and symbols (Legend), indicating the full name of the abbreviations;
• It should include a glossary in which for example a definition of BBP should be given;
• It would be useful to include a list of examples for different product categories;
• The database should have a quality control.
• The database should include the possibility of comparing products;
• It should possibly include links to the European and national legal frameworks on GPP;
• It is a good marketing tool for producers of BBP;
• Include a filter option to enable possible search requests for products with specific attributes only.
	• It is a good idea to visualise the application categories, using pictures.
	• Environmental claims should always refer to practices
	• It should be decided if the database will also include products coming from outside Europe
	• For each product attribute, three record fields should always be included, covering
	  o the value
	  o a reference to the method (according to international standard) used
	  o how it is verified

Aspect: **Interest in using database** Questions: Would you consider using this database? If not, why not?	
Procurement	**Business**
• The metaphor/abstraction of a “bio-based house” may not be such a good choice. It would be better if the building was shaped more like a “bio-based office” e.g. by changing the exterior. • Missing product categories: the civil engineering components “wet environment” (waterworks) and “soil” (ground works) are missing	• Find a lead user to make use of the database (and reward him/her) • Consider after project contingency plan for database

• Include search options based on functionalities (e.g. search on “composting” or “digestion”) • Include a filter option, so that you can switch product criteria on and off as you like (compare with the tool that investors use). • Is these sufficient “incentives” for the (a) supplier (b) public procurer to contribute to and/or make use of the European database? Dutch public procurers already make use of such calculation tools and databases as DuboCalc and NMD - Nationale Milieudatabase[13]… How do you ensure that the information is up-to-date? • PP are primarily interested to know if there is sufficient market (in terms of volume and number of suppliers) in case they would demand (partly) bio-based products in a European tender, and that knowledge at product/supplier level is not a must.	
Further comments	
It should be further considered how the database will be promoted to make sure that suppliers and procurers use it. Synchronizing the Open-Bio database with existing regional / national databases is crucial for establishing acceptance among public procurers.	

Feedback on specific questions regarding information layer 1 (Tables 2 & 3)

Next, procurement and business stakeholders were asked to give feedback on specific questions regarding the database set-up. Feedback regarding the first two information levels is presented in Table 2 and Table 3 respectively. No comments were received from stakeholders regarding the third information level.

[13] The Dutch National Environmental Database gives access to environmental (performance) data on products and processes that are applied in the Dutch construction (buildings and civil works) sector

Table 2: Overview of stakeholder feedback regarding information layer 1: required/obligatory information

Layer	(Product) attribute	Information requested from supplier	*Attribute-related questions*	Feedback provided by Procurement Stakeholders	Feedback provided by Business Stakeholders
Layer 1 (basic info)	*% of bio-based (carbon) content* (and: product name, company name, application areas, etc.)	Indicate the % and the used test method; Specify: self-claim or certified?	***Procurement*** • *Do you consider a minimum of 20% bio-based content appropriate / too high / too low?* • *Would self-declaration of bio-based content by suppliers be acceptable to you?* ***Business*** • *Do you consider a minimum of 20% bio-based content appropriate / too high / too low?* • *Are you able to deliver the information requested according to this format?* • *<u>If not</u>: do you have an alternative suggestion?*	• Layer 1 should include field for describing/specifying the additional value / functionality of a certain bio-based product • The minimum value (now set at 20% for all product categories) should differ per product (category) and should be dynamically adjusted over time in order to stimulate product improvements	• The 20% threshold should be dropped and the CEN standard, which specifies that everything with more than 0% can be called bio-based, should be taken into account • Bio-based content measurement should refer to a standard • The database should at least require a certificate for the C14 test. • Database users should be informed about whether the claim on bio-based content of a product was already verified by third parties. • The self-claim option is not an acceptable practice

Table 3: Overview of stakeholder feedback regarding information layer 2: optional/preferred information

Layer	(Product) attribute	Information requested from supplier	Attribute-related questions	Feedback provided by Procurement Stakeholders	Feedback provided by Business Stakeholders
Layer 2 ("preferred" formation)	*A total of six (6) product attributes will be distinguished in the B2P product database:*			• Information on product functionalities is helpful to compare the performance of bio-based products advertised in the database with existing alternatives • Including a field to specify the additional value of bio-based products can be helpful to inform and educate public procurers about bio-based products advantages.	• There should not be too many product attributes included in the database, rather the information on already included functionalities should go more into detail • Make sure reference is made to standards and correct terminology
	a) Product Carbon Footprint *b) Environmental Life Cycle Impact*	Info on this product attribute is available; Info can be downloaded (provide link).	***Procurement*** • *Is this type of information useful to you?* ***Business*** • *Can you provide the requested information in the required format?*	• Life cycle impact is a good issue. But it seems to be quite complicated, and it would be useful to indicate the method use for measuring it	
	c) Additives	i.e. recycled	• *Is the product information*		• The items that are

	(not-biobased)	content, chemicals or fossil based materials, toxic substances	*requested adequate?* • *If not, what would you like to see changed?*		referred to as additives are actually ingredients; • Consider that the recycled content or toxic content may also be bio-based.
	d) *End-of-life properties/ disposal options (Biodegradability, Compostability, Energy Recovery)*	Please indicate standard(s) according to which the product achieves these [properties?]	***Procurement*** • *Is the product information requested adequate?* • *If not, what would you like to see changed?* ***Business*** • *Can you provide the requested information in the required format?*	• Consider as well the recyclability	• Cover "durability" (in the use phase) in some way[14]
	e) *Biomass source and origin*	Biomass source & origin of that biomass	***Procurement*** • *Is the product information requested adequate?* • *If not, what would you like to see changed?* ***Business*** • *Can you provide the requested information in the required format?*	• Biomass source and origin should be a mandatory information , not optional; maybe the question for specific countries would be interesting, for the chain of custody is often very complex; • Certificate on the origin of the biomass should be requested	• It is not feasible for suppliers to provide a high level of detail and precision regarding the biomass source • Information on sustainability of the biomass feedstock should be included

[14] It will be a research task to further investigate if in the database the attribute durability should be included under the attribute biodegradability.

	f) Certificates and Labels	What certificates and labels are owned?	***Procurement*** • *Is the product information requested adequate for your purpose?* • *If not, what would you like to see changed?* ***Business*** • *Can you provide the requested information in the required format?*	• Certifications of products are different from certifications of producers (both of which should be included)	

The detailed stakeholder feedback leads to the following fine-tuning of the database set-up:

- The proposed database scope, the product classification system and the basic database structure with 3 –virtual- layers of information were deemed acceptable by the stakeholders, and thus there is no need to make any changes in these.
- Regarding the 11 product categories (see Section 3.3) one stakeholder recommended adding two product categories i.e. “wet environment” and “soil”. However, rather than expanding the number of product categories the proposed items can be considered integral part of “construction and infrastructure” and/or “gardening and landscaping”. In the future, when the number of products covered by the database will expand, a further division into sub-categories may be asked for, but for the time being no such division is considered.
- Regarding the visualisation of the 11 product categories a number of stakeholders observed that the metaphor/abstraction of a bio-based house (see Sample visualisation of graphical interface for B2P product categories) might not be such a good choice, and suggested that the building should look more like an office.
- Regarding the product attributes included in the database (see Section 3.4), the stakeholder feedback led to the fine-tuning of the wording of most existing attributes, and the addition of two new attributes each at information layers 1 and 2. This is detailed in the next Chapter.

These minor modifications are described in more detail in the next chapter.

5 Fine-tuned database set-up

This chapter details how the processing of the detailed stakeholder feedback, as described in the previous section, leads to fine-tuning the database set-up, in particular of the content of the information layers, and of the data and information to be included in the Open-Bio product information website. It concludes with a brief description of the eligibility rules and the filling procedure.

5.1 Fine-tuned content of database information layers

In short, processing the stakeholder feedback led to an expansion of the number of product attributes covered in the information layers as well as a fine-tuning of the wording of existing product attributes, as follows:

Fine-tuning (in general)

Expansion of the presented information, by adding:

- A key (legend) to abbreviations and symbols
- A glossary in which e.g. a definition of bio-based product is given
- A list of examples for different product categories.

Database set-up

- Allow for future expansion with additional product attributes (and product categories)

Product attributes (layers 1 and 2)

- For each attribute, always include: (a) the value (b) reference to the method (according to an international norm/standard (c) how it is verified
- The use of correct terminology will be stressed

Fine-tuning of information layer 1 (mandatory information)

Additional information:

- A field describing/specifying the additional value / functionality of the bio-based product will be added to Level 1

Fine tuning "bio-based content":

- A distinction shall be made between bio-based content vs. bio-based carbon content
- The bio-based (carbon) content measurement shall refer to a standard
- Self-claims are acceptable
- Transparency will be stressed
- Information on testing (e.g. C14 method) and certification should be provided

Fine-tuning of information layer 2 (preferred information)

Additional information:

- Product picture should be included
- Sustainability of the biomass feedstock should be covered, e.g. as part of the attribute "biomass type and origin" (see below)

Fine-tuning product attributes "PCF" and ""Environmental Life-Cycle Impact"

- Category name to be changed into the more general "Environmental Impact"
- The category may include information on LCA, water use, etc.

Fine-tuning product attribute "Additives"

- Category name to be changed into "Additives and ingredients"

Fine-tuning product attribute "End-of-life"

- "Product life cycle properties" is considered to more comprehensively cover relevant information, also with relation to durability (in the use phase), re-usability and recyclability

Fine-tuning product attribute "Biomass source and origin"[15]

- Use the term biomass type, rather than biomass source.
  Biomass types include plant species, animal species, etc. as per EN (WI00411104>
- Biomass origin to be interpreted as:
  the origin documented through the supply chain e.g. territory, country, water area
- Sustainability of the biomass feedstock should be covered, via label/certificate info

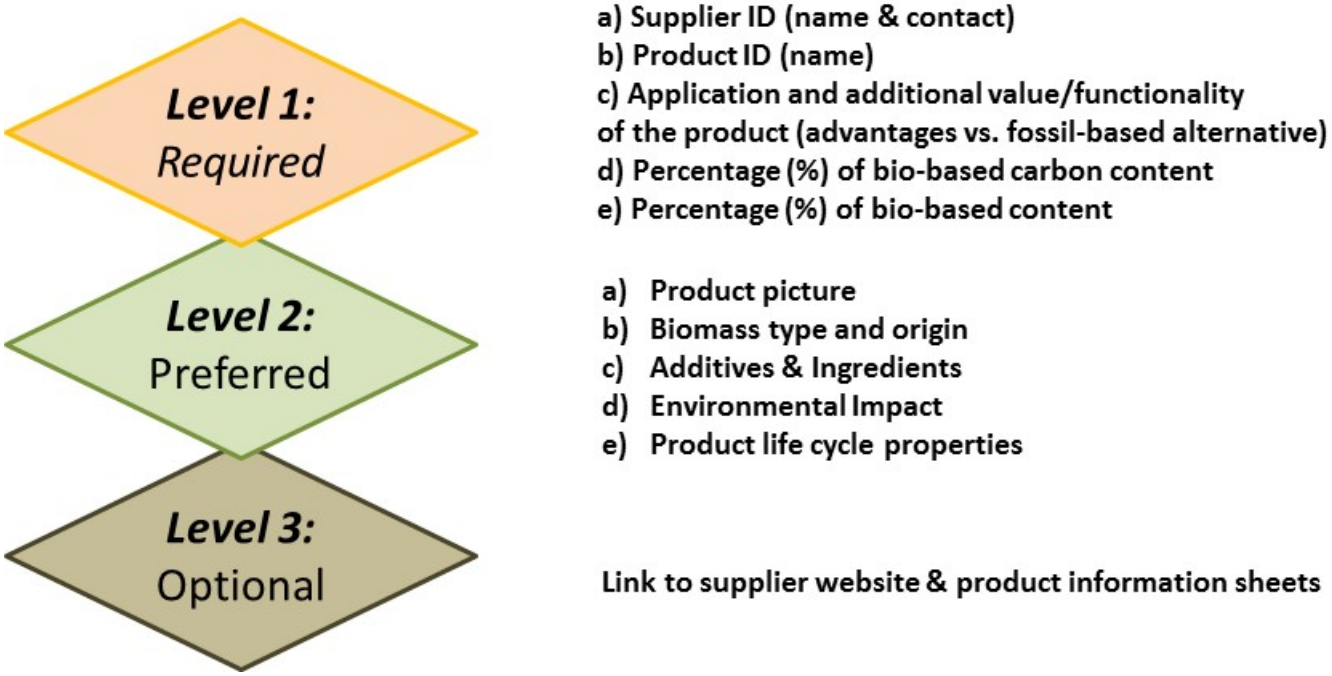
Fine-tuning product attribute "Certificates and labels"[16]

- Certificates and labels referring to listed attributes shall be an integral part of the attribute descriptions
- Category name to be changed into "Other attributes" (can include additional information such as Certification references, Ecolabel and Environmental Product Declaration claims, etc.)

The results of the fine-tuning are graphically illustrated in the following revised database set-up (see Figure 4):

[15] Personal communication with Harmen Willemse, secretary of CEN TC 411, discussing the current (July 2015) draft of the data sheet for Business to Business declaration for bio-based products according to prEN 16848
[16] Idem

Figure 4: Revised product database set-up



5.2 Fine-tuned website content, structure and functionality

Taking into account stakeholders' suggestions, the fine-tuned website shall include the following data and information:

- **General information**, such as e.g. (a) a key to abbreviations and symbols, (b) a glossary in which e.g. a definition of bio-based products is given, (c) a list of examples for different product categories
- A set of **links to relevant external websites** (e.g. existing websites/databases addressing such issues as public procurement, sustainable procurement, Green Public Procurement, Public Procurement of Innovation, Ecolabels, Bio-based procurement, Bio-based products etc.)
- The **database** of bio-based products and services.
- Some basic comparison functionality e.g. a **filter** (based on the use of tags)

The fine-tuned website will have the following structure:

- The **home page** (main portal), which could include 3 gates, one each for the target groups B2P, B2B and B2C. Only the B2P section will be multi-level
- The **B2B gate** will include for intermediates an interconnection with external website iBIB, and for end products a pointer to the database within the B2P gate
- The **B2C gate** will lead to website page with information presented in e.g. FAQ-style
- The **B2P gate** will offer three different options as point of entry, as follows:
    - The Bio-based Building, visually representing the 11 product categories
    - A list of the 11 product categories

- A search option, offering different search methods such as: 1. Free text search 2. Index (tag) search 3. Step-by-step searching/using drop-down menus.

Important database/website features and functionalities would include, as discussed in D8.3:

- Easy reading etc. (applying common sense and widely known tips & tricks)
- Several search methods, as introduced above
- A filter option
- Different ways for displaying search results (e.g. no. of products listed per screen)
- A simple product-by-product comparator would be good to have

To make optimal use of existing bio-based product information the Open-Bio database will be (inter-)connected with selected internet databases and platforms. This may include the following existing product information list[17]:

- iBIB database (nova)
- Nawaro-im Einkauf database (FNR)
- Other websites operated by parties external to Open-Bio, e.g. AgroBiobase

Considering the intended future expansion and development of the database (within Horizon 2020 project InnProBio), the Open-Bio database will also have to be connected with ICLEI's Procurement of Innovation Platform[18] (see Section 6.2).

Still to be decided (this will be done when the database beta version is developed) is how best to integrate the **general information** and **links to websites** (as mentioned above) in this website structure.

The proposed website set-up is being described in the website development plan that nova started drafting in July 2015.

5.3 Database eligibility rules and filling procedure

Taking into account stakeholders' suggestions, and based on the philosophy that to attract a sufficient number of bio-based products, the entrance requirements should be kept reasonably low, the eligibility rules were fine-tuned as follows:

- Both manufacturers and suppliers can apply for registration of bio-based end products
- The threshold of a minimum of 20% bio-based content that was proposed in D8.3 has been revised. In line with the new CEN TC 411 definition any end product with >0% bio-based content (category 1 and category 2 products, as per CEN TC 411 defini-

[17] The connection may consist of a simple reference.
[18] https://www.innovation-procurement.org/

tion[19]) is deemed acceptable. At a later stage in time, the minimum bio-based content may be raised, or extra criteria may be included.
- Certification of the bio-based content is preferred, but self-declaration is acceptable. Self-declaration will need to refer to the method used to determine the bio-based content.
- The database will be transparent what type of claim is made.
- Certified sustainable biomass use is preferred, but not mandatory to proof it.
- Products made outside Europe but marketed within Europe will be acceptable.

To help ensure that the Open-Bio database can be filled quickly with a sufficient number of bio-based products it is proposed to connect it with existing national and international databases. This may include some websites/databases explored as part of Open-Bio Task 8.1 (including the Nawaro-im Einkauf and iBIB databases mentioned above). Some recently established or existing websites/databases that have been initiated and/or identified since Task 8.1 was completed constitute another potential source of suitable bio-based products, e.g.:

- **Biobased Huis**, www.biobasedeconomy.nl/biobasedhuis/app, launched in September 2014, showcasing bio-based consumer products available on the Dutch market
- **Kennisbank Biobased Bouwen**, www.biobasedbouwen.nl/; launched in February 2015, showcasing biobased construction materials available on the Dutch market
- **Acquisiti Verdi,** the Italian Green Public Procurement platform, www.acquistiverdi.it/catalogo, showcasing green products sold in Italy.

[19] See e.g. Lara Dammer, Michael Carus (nova-Institut), Standards, norms and labels for bio-based products, in: Aeschelmann, F. et al.: Market study on “Bio-based Polymers in the World – Capacities, Production and Applications: Status Quo and Trends towards 2020. Hürth 2015.

6 Future development work and ideas

6.1 Database programming, testing, refining, completion and presentation

The fine-tuned database set-up, as presented in the previous chapter, will be the starting point for the step-wise development and fine-tuning of the Open-Bio product information database/website and associated interaction tool in summer and autumn 2015. Database-related tasks and activities include:

- **T8.5:** Development of the database/website and associated interaction tool (nova; with assistance from FNR, BTG, ECN and IAR) on the basis of the specifications laid down in the current report and nova's expertise with the iBIB business directory. Refinement of the same on the basis of the results of pilot testing in Task 8.6;
- **T8.6.** Filling the database (FNR & nova) with a reasonable number of products/relevant sample size across the defined product categories and the three interfaces (B2P, B2B and B2C), followed by pilot testing of the Beta-version of the tool in winter 2015/2016 (lead: FNR, supported by TUB, nova and BTG);
- **T8.7**: Further filling and completion of the database (nova and FNR), plus public presentation (FNR, nova, BTG, NEN and the advisory partners).

The outcomes of the database development process are thus:

- a tested, final and operable database interaction tool; and
- a database that is filled with information on a critical number of products

The first process step will yield the following documents and products:

- A website development plan and/or functional design (contributors: nova)
- A beta version of the BBP database and interaction tool including the website with general information (i.e. glossary), the product database and the technical backend for BBP suppliers that want to submit product information (contributors: nova)
- A User Manual, targeting suppliers of bio-based products that want to submit product information. The manual will assist them filling the database with the correct information. Among others, it will explain what terminology to use and give examples for suitable standards, test methods and metrics (contributors: FNR, NEN[20], BTG, nova).

To help start the website programming process at nova, which is scheduled to be carried out between July and October 2015, BTG and FNR produced a pre-Deliverable, containing essential findings of the current document, in June 2015. Based on this pre-Deliverable nova started drafting the website development plan in July 2015.

6.2 Ownership, maintenance and sustainability of the Open-Bio database

The completed database will be available only towards the end of the Open-Bio project duration (October 2016), and will be the result of contributions of many project partners. Maintaining the jointly developed database, keeping it operational, up-to-date, reliable and relevant

[20] NEN support will be essential to make the link with other relevant Open-Bio Work packages.

will require additional (human and financial) resources that the Open-Bio project cannot provide. Alternative sources of financing will thus be needed, whether public, private or a combination of these. Joint ownership of the database may complicate finding such finance.

As a temporary solution, key Open-Bio WP8 partners proposed that work on the Open-Bio database be continued within a new research proposal submitted in June 2014 in response to the Horizon 2020 Call: H2020-ISIB-2014-1, Topic: ISIB-07-2014. The application for the new project, called InnProBio (full title *Public procurement networks on innovative bio-based products*) was successful. InnProBio will run from March 2015 to February 2018, and will *inter alia* build on the database-related work carried out in Open-Bio. The database will be hosted by InnProBio project partner ICLEI (Local Governments for Sustainability), within the environment of the Procurement of Innovation Platform (www.innovation-procurement.org).

For the longer term, a solution needs to be found how the database can be sustained. Charging fees, either from users or from suppliers listed in the database (the model employed by e.g. Agrobiobase and iBIB), could help to generate the needed income. However, it is believed that for long-term continuation the database/website will have to be embedded in a receptive environment. For this, three options have preliminary been identified i.e.:

1. Independent operation with income generation by a party involved in Open-Bio (for example nova or advisory partner IAR).
2. Independent operation with continued external sponsoring, such as the European Commission, a national government agency or programme (e.g. FNR), an NGO, business/trade association, an international operating organisation or cluster.
3. Integrating the database in a larger Internet platform (not unlike the short-term solution adopted in InnProBio, described above).

The technical implementation of the database will have to take into account that the database will be developed in the Open-Bio project, continued in the InnProBio project, and is to be sustained in possibly another setting. Further issues that need careful consideration are Intellectual property (IP) rights and ownership rules, as well as governance.

Both within Open-Bio and InnProBio the partners involved in database development will actively explore options to secure long-term sustainability. The issue will also be brought to the attention of the Public Procurement Working Group of Bio-based Products, one of the working groups that was set-up by the Commission Expert Group for Bio-based Products.

6.3 Additional functionality

Continuation of the Open-Bio database under the H2020 project InnProBio will not only ascertain that the database can be kept operational, up-to-date, reliable and relevant for an additional 17 months (February 2018 instead of October 2016). It also allows the inclusion of additional functionalities, such as a (more elaborate) product comparator, social networking and learning, and procurement assistance tools (legal support, product guides). Obviously the structure being developed within Open-Bio needs to consider these future add-ons from the beginning.

Figure 5: Additional database/website features, to be implemented within InnProBio

Product comparator	Social networking and learning	Procurement assistance (legal support, product guides)