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## Project Final Conference Report

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<b>FUB-BGBM</b>	Freie Universität Berlin	Germany
<b>Pensoft</b>	Pensoft Publishers Ltd	Bulgaria
<b>Sigma</b>	Sigma Orionis	France
<b>RBGK</b>	The Royal Botanic Gardens Kew	United Kingdom
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## Executive summary

The pro-iBiosphere project is supported by the e-Infrastructures Unit of the European Commission (DG CONNECT) through its FP7 research-funding programme.

The aim of the project is to prepare, through a coordination action, the ground for an integrative system for intelligent management of biodiversity knowledge. The project has the vision of implementing an Open Knowledge Biodiversity Management System (OBKMS), an integration platform that will allow production of Biotas (collections of organisms) of the future in a flexible semantically driven online environment.

During the period 2012-2014, the project contributed to making fundamental biodiversity data digital, open and re-usable while envisioning to implement an OBKMS.

The achievements of the project have been presented on the occasion of the project Final Conference, held on June 12, 2014 at the Bouchout Castle in the Botanic Garden Meise in Belgium. The Final Conference was the last event of a series of 6 project meetings organised in Europe in the framework of the pro-iBiosphere project and welcomed more than 75 participants from the biodiversity and/or e-Infrastructures community.

## 1. Conference objectives

### 1.1. Concept and objectives

The Final Conference was taking place at the end of the project when most outputs are available and when the sustainability phase of the project could be further discussed among the stakeholders community. In a broader context, the Final Conference was held at a crucial time for the development of new instruments for the future needs of biodiversity research through the preparation of the next WP 2016-2017 of EU Horizon 2020 Framework Programme for Research and Innovation.

The objective of this Final Conference was to bring together policy and biodiversity stakeholders from Europe and overseas to present the project results, discuss on the project sustainability perspectives and provide key recommendations and inputs from biodiversity experts to the European Commission.

On this occasion, the project presented, discussed and concurred with the Bouchout Declaration on Open Biodiversity Knowledge Management System (OBKMS) while organising a ceremony in which key biodiversity institutions officially signed it.

### 1.2. pro-iBiosphere Final event series

The Final Conference has been the last event organised among a series of activities, so-called pro-iBiosphere Final event, including (i) MS24 - Model Evaluation Workshop<sup>1</sup> held on June 9-10, (ii) Training on Wikimedia<sup>2</sup>, (iii) Biodiversity Catalogue (BioVeL) Workshop<sup>3</sup>, (iv) Demonstrations on project pilots<sup>4</sup>, (v) Demonstrations on outcomes of pro-iBiosphere Data Enrichment Hackathon<sup>5</sup> and a Poster session organised during coffee breaks on June 11.

The general aim of the Final Event has been to present the project achievements in a series of activities, including the Final Conference. The agenda of the week from June 9-12 along with logistical information and directions to the venue are available on the project wiki<sup>6</sup>.

<sup>1</sup> [http://wiki.pro-ibiosphere.eu/wiki/MS24\\_-\\_Model\\_Evaluation\\_Workshop](http://wiki.pro-ibiosphere.eu/wiki/MS24_-_Model_Evaluation_Workshop)

<sup>2</sup> [http://wiki.pro-ibiosphere.eu/wiki/Pro-iBiosphere\\_final\\_event\\_Meise\\_\(Brussels\),\\_June\\_2014/Wikimedia\\_workshop](http://wiki.pro-ibiosphere.eu/wiki/Pro-iBiosphere_final_event_Meise_(Brussels),_June_2014/Wikimedia_workshop)

<sup>3</sup> [http://wiki.pro-ibiosphere.eu/wiki/Workshop\\_on\\_Biodiversity\\_Catalogue](http://wiki.pro-ibiosphere.eu/wiki/Workshop_on_Biodiversity_Catalogue)

<sup>4</sup> [http://wiki.pro-ibiosphere.eu/wiki/Pilot\\_demos](http://wiki.pro-ibiosphere.eu/wiki/Pilot_demos)

<sup>5</sup> [http://wiki.pro-ibiosphere.eu/wiki/Demonstrations\\_on\\_outcomes\\_of\\_pro-iBiosphere\\_Data\\_Enrichment\\_Hackathon](http://wiki.pro-ibiosphere.eu/wiki/Demonstrations_on_outcomes_of_pro-iBiosphere_Data_Enrichment_Hackathon)

<sup>6</sup> [http://wiki.pro-ibiosphere.eu/wiki/Pro-iBiosphere\\_Final\\_Event\\_Meise\\_\(Brussels\),\\_June\\_2014](http://wiki.pro-ibiosphere.eu/wiki/Pro-iBiosphere_Final_Event_Meise_(Brussels),_June_2014)

## 2. Programme

### 2.1. Agenda

The agenda has been structured in a way to present the four major challenges encountered by the pro-iBiosphere project in the mobilization and interoperability of biodiversity data, which are:

- The legal challenges regarding the legal issues of copyright and Open Access in the Biodiversity domain
- The technical challenges regarding the mark-up, historical legacy, publishing, identifiers, standards, etc.
- The future - the Open Biodiversity Knowledge Management System (OBKMS) vision
- The sustainability challenges regarding the financing, business models, maintenance, adoption by the community

As a result, these four challenges have been converted into different sessions of the agenda.

As regards to the legal, technical and sustainability challenges, the aim was to present project outcomes, in particular as regards to the project pilots developed and the project findings.

So as to present the OBKMS vision and to ensure stakeholders commit to the need of better access to biodiversity information, project partners decided to create the Bouchout Declaration and to make it sign by major biodiversity initiatives, institutions and individuals. The inaugural ceremony of the Bouchout Declaration (including official launch of the website<sup>7</sup>) officially took place during the Final Conference held at the Bouchout Castle in the Botanic Garden Meise in Belgium.

Following a request from the European Commission, a specific sub-session on recommendations and future research needs has been added to the sustainability session in order to get first-hand input from the biodiversity experts present during the Final Conference.

Panel sessions and question and answers sessions have been organised in order to facilitate discussions and to involve the audience in the debates.

The final version of the agenda is available online<sup>8</sup>.

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<sup>7</sup> <http://www.bouchoutdeclaration.org>

<sup>8</sup> [http://wiki.pro-ibiosphere.eu/wiki/Final\\_Conference](http://wiki.pro-ibiosphere.eu/wiki/Final_Conference)

## 2.2. Speakers

The profile of speakers was well balanced between project partners and external speakers and a wide scope of organisations was represented (see figure 1 and 2 below). The majority of speakers was European, but a selection of keynote speakers from outside Europe, in particular the United States of America, enabled the sharing of overseas experiences and visions (see figure 3).

Final Conference speakers included (i) national and European institutions such as DG CONNECT e-Infrastructure Unit of the European Commission, the US National Academy of Sciences, (ii) other biodiversity initiatives such as VIBRANT, BioVeL, EU-BON, LifeWatch, VerNet, EOL, (iii) Universities and institutes, (iv) major biodiversity centres such as Botanic Gardens, Natural History Museums but also NGOs, Publishers.

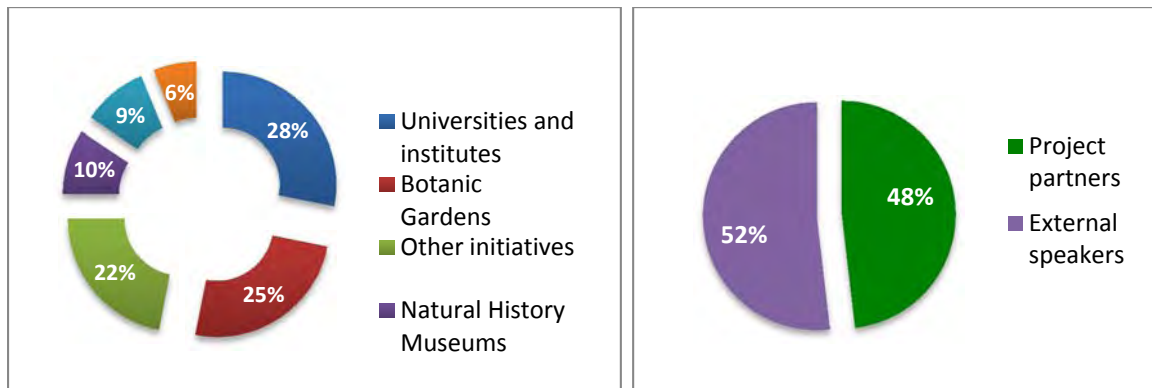


Figure 1 and 2 - Speakers' profile

As regards to the speakers' origin, the majority of speakers came from Europe (81%) and 19% came from outside Europe, 4 speakers came from the USA and 1 speaker came from Asia Pacific (New Zealand and Australia). See figure 3 below.

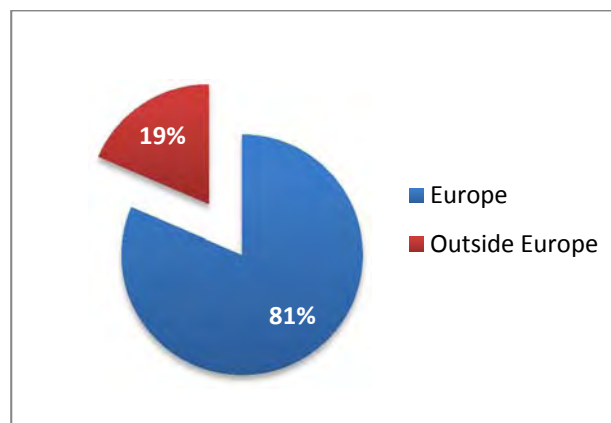


Figure 3 - Speakers' origin



## 3. Promotion

### 3.1. Internal promotion

#### 3.1.1. *Online dissemination*

The internal promotion has been launched in three phases on the project website and social media (Google +, LinkedIn, Twitter and Facebook) corresponding to (i) a mark your calendar news at M15, (ii) a latest updated news at M20 and (iii) a last days to register news at M22.

As regards to the dissemination database, (i) at M19, an email blast has been sent to project stakeholders to invite them to attend the Final Event, (ii) at M20, a news on the Final Event has been highlighted on the project quarterly newsletter<sup>9</sup> to invite stakeholders to register.

On June 12, 2014, the project Twitter account<sup>10</sup>, Facebook page<sup>11</sup> and LinkedIn account<sup>12</sup> have been updated with a new picture to promote the launch of the Bouchout Declaration.

#### 3.1.2. *Dissemination materials*

An event flyer and poster<sup>13</sup> have been developed to promote the Final Event and have been placed on the website, wiki, and sent to external stakeholders for a wide dissemination (along with the email blast, with news posted on other websites etc.).

### 3.2. External promotion

The External promotion has been launched in two phases, (i) firstly, at M20 via external social media (Facebook, LinkedIn and Google +) and biodiversity mailing lists and secondly, at M21 through external websites (project partners' websites, advisory board members' websites and other initiatives' websites).

#### 3.2.1. *Websites and blast mails*

News have been posted on the following websites:

##### a) European Commission

- Cordis<sup>14</sup>
- Digital Agenda<sup>15</sup>
- EU Agenda<sup>16</sup>

<sup>9</sup> [http://www.pro-ibiosphere.eu/news/0\\_4\\_2014](http://www.pro-ibiosphere.eu/news/0_4_2014)

<sup>10</sup> <https://twitter.com/proibiosphere>

<sup>11</sup> [https://www.facebook.com/proibiosphere?ref\\_type=bookmark](https://www.facebook.com/proibiosphere?ref_type=bookmark)

<sup>12</sup> [https://www.linkedin.com/groups/PRO-iBiosphere-4682845?trk=myg\\_ugrp\\_ovr](https://www.linkedin.com/groups/PRO-iBiosphere-4682845?trk=myg_ugrp_ovr)

<sup>13</sup> <http://www.pro-ibiosphere.eu/media/center/4366>

<sup>14</sup> <https://cordis.europa.eu/wire/index.cfm?fuseaction=article.Detail&rcn=44130>

<sup>15</sup> <http://ec.europa.eu/digital-agenda/en/news/pro-ibiosphere-final-event>

<sup>16</sup> <https://www.euagenda.eu/2014/6/10/pro-iBiosphere-Final-Event>

## b) External websites

- Vifabio<sup>17</sup>
- BioVeL<sup>18</sup>
- EU BON<sup>19</sup>
- Pensoft Publishers<sup>20</sup>
- Botanic Garden Meise<sup>21</sup>
- Plazi<sup>22</sup>
- Agricultural Information Management Standards (AIMS)<sup>23</sup>
- Sigma Orionis<sup>24</sup>

## c) Blast mails

A promotional email on the Final Event has been sent at M21 to EU-BON dissemination database comprising 150 contacts.

### 3.2.2. Social media

#### a) Twitter

:: Prior to the event:

- Botanic Gardens Conservation International (BGCI): @bgci (1,396 followers)
- EU-BON: @EUBON1 (273 followers)

:: During the event:

A specific hashtag has been created and shared with participants to tweet about the Final Event: #pibmei. The project, project partners and external stakeholders have been using this hashtag resulting in the release of more than 50 tweets.

#### b) LinkedIn

Discussions have been posted on other biodiversity groups including:

- Alter-net (968 members)<sup>25</sup>
- Biodiversity Heritage Library (BHL - 885 members)<sup>26</sup>
- BioFresh (136 members)<sup>27</sup>
- EU-BON (63 members)<sup>28</sup>
- Global Biodiversity Information Facility (GBIF - 1,319 members)<sup>29</sup>
- Gfgsquared (GFG<sup>2</sup> - 533 members)<sup>30</sup>
- LifeWatch (330 members)<sup>31</sup>

<sup>17</sup> <http://www.vifabio.de/en/iqfBio/detail/8425>

<sup>18</sup> <https://www.biovel.eu/events/conferences>

<sup>19</sup> [http://www.eubon.eu/news/10864\\_pro-ibiosphere-final-event-in-meise-\(brussels\)---june-10-12-2014/](http://www.eubon.eu/news/10864_pro-ibiosphere-final-event-in-meise-(brussels)---june-10-12-2014/)

<sup>20</sup> <http://www.pensoft.net/event.php?n=73&SESID=auzykddd5>

<sup>21</sup> <http://www.br.fgov.be/PUBLIC/GENERAL>

<sup>22</sup> <http://plazi.org>

<sup>23</sup> <http://aims.fao.org/fr/node/115307>

<sup>24</sup> <http://sigma-orionis.com/sigma-orionis-sign-bochout-declaration-pro-ibiosphere-final-event/>

<sup>25</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-1113827%2ES%2E5861846752012824580?qid=657c2516-947a-4466-91d2-fb11986532f4&goback=%2Egna\\_1113827](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-1113827%2ES%2E5861846752012824580?qid=657c2516-947a-4466-91d2-fb11986532f4&goback=%2Egna_1113827)

<sup>26</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-1510217%2ES%2E5861847348757438466?qid=68488873-1e5a-4b89-af35-0f34389472ea&goback=%2Egna\\_1510217](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-1510217%2ES%2E5861847348757438466?qid=68488873-1e5a-4b89-af35-0f34389472ea&goback=%2Egna_1510217)

<sup>27</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-4148402%2ES%2E5861847126580953089?qid=a64f9087-7b93-49d2-ac32-9d6657da8776&goback=%2Egna\\_4148402](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-4148402%2ES%2E5861847126580953089?qid=a64f9087-7b93-49d2-ac32-9d6657da8776&goback=%2Egna_4148402)

<sup>28</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-4805349%2ES%2E5861847598687625218?qid=0aa060be-7d38-4480-80a7-6cc4c5c2b571&goback=%2Egna\\_4805349](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-4805349%2ES%2E5861847598687625218?qid=0aa060be-7d38-4480-80a7-6cc4c5c2b571&goback=%2Egna_4805349)

<sup>29</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-55171%2ES%2E5861847737347108867?qid=65295176-4e90-4812-9238-c01740348a15&trk=groups\\_items\\_see\\_more-0-b-ttl](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-55171%2ES%2E5861847737347108867?qid=65295176-4e90-4812-9238-c01740348a15&trk=groups_items_see_more-0-b-ttl)

<sup>30</sup> [https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-3787047%2ES%2E5861847841986613251?qid=93ee6a75-115c-46a0-8ace-71f7f81a416d&goback=%2Egna\\_3787047](https://www.linkedin.com/groups/REGISTER-NOW-proiBiosphere-Final-Event-3787047%2ES%2E5861847841986613251?qid=93ee6a75-115c-46a0-8ace-71f7f81a416d&goback=%2Egna_3787047)

<sup>31</sup> [https://www.linkedin.com/groupItem?view=&gid=1516417&type=member&item=5861847969359228932&qid=97835b8c-207c-4b2a-955f-41296f5eca27&goback=%2Egna\\_1516417](https://www.linkedin.com/groupItem?view=&gid=1516417&type=member&item=5861847969359228932&qid=97835b8c-207c-4b2a-955f-41296f5eca27&goback=%2Egna_1516417)

- Taxonomic Database Working Group (TDWG - 392 members)<sup>32</sup>

### c) Facebook

Discussions have been posted on other biodiversity groups including:

- Fishbase (4,260 likes)<sup>33</sup>
- Encyclopedia of Life (EOL, 27k likes)<sup>34</sup>
- EU-BON (67 likes)<sup>35</sup>
- United Nations Decade in Biodiversity (32k likes)<sup>36</sup>
- GBIF (1,047 likes)<sup>37</sup>
- SeaLifeBase (595 likes)<sup>38</sup>
- BHL (7,644 likes)<sup>39</sup>
- iPlant Collaborative (303 likes)<sup>40</sup>
- ExpEER (70 likes)<sup>41</sup>
- EU-Interact (210 likes)<sup>42</sup>
- BGCI (995 likes)<sup>43</sup>
- VertNet (258 likes)<sup>44</sup>

### d) Google +

- EU-BON (15 subscribers)<sup>45</sup>

## 3.3. Press release

Following the Final Conference, several articles have been published online, in particular as regards to the official launch of the Bouchout Declaration.

A press release<sup>46</sup> on the Bouchout Declaration has been published on EurekAlert by the project.

Articles have been published on external websites:

- Agro-Know blog<sup>47</sup>
- Biodiversity Heritage Library (BHL)<sup>48</sup>
- Ross Mounce blog<sup>49</sup>
- Tela Botanica<sup>50</sup>
- DNA Barcoding<sup>51</sup>
- Encyclopedia of Life (EOL)<sup>52</sup>
- Plazi<sup>53</sup>

<sup>32</sup>[https://www.linkedin.com/groupItem?view=&gid=993557&type=member&item=5861848102897479682&qid=782d6571-fd7b-4aa7-9e72-60813e36d507&goback=%2Egna\\_993557](https://www.linkedin.com/groupItem?view=&gid=993557&type=member&item=5861848102897479682&qid=782d6571-fd7b-4aa7-9e72-60813e36d507&goback=%2Egna_993557)

<sup>33</sup> <https://www.facebook.com/FishBase>

<sup>34</sup> <https://www.facebook.com/encyclopediainlife>

<sup>35</sup> <https://www.facebook.com/pages/EU-BON/136503689835379?ref=stream>

<sup>36</sup> <https://www.facebook.com/UNBiodiversity>

<sup>37</sup> <https://www.facebook.com/gbifnews>

<sup>38</sup> <https://www.facebook.com/TheSeaLifeBaseProject>

<sup>39</sup> <https://www.facebook.com/BioDivLibrary>

<sup>40</sup> <https://www.facebook.com/iPlantCollab>

<sup>41</sup> <https://www.facebook.com/EcosystemResearch>

<sup>42</sup> <https://www.facebook.com/InteractArctic>

<sup>43</sup> <https://www.facebook.com/BGCIeducation>

<sup>44</sup> <https://www.facebook.com/VertNet>

<sup>45</sup> <https://plus.google.com/u/0/105285222457665319373/posts>

<sup>46</sup> [http://www.eurekalert.org/pub\\_releases/2014-06/pp-tbd060314.php](http://www.eurekalert.org/pub_releases/2014-06/pp-tbd060314.php)

<sup>47</sup> <http://blog.agro-know.com>

<sup>48</sup> <http://blog.biodiversitylibrary.org/2014/06/bhl-is-happy-to-be-charter-signatory-of.html>

<sup>49</sup> <http://rossmounce.co.uk/2014/06/12/progress-update-from-meise-belgium/>

<sup>50</sup> <http://www.tela-botanica.org/actu/article6373.html>

<sup>51</sup> <http://dna-barcoding.blogspot.fr/2014/06/open-access-bouchout-declaration.html?sref=tw>

<sup>52</sup> [http://eol.org/news\\_items/461](http://eol.org/news_items/461)

<sup>53</sup> <http://plazi.org/?q=node/57>

### 3.4. Proceedings

Following the Final Conference, the wiki page<sup>54</sup> has been updated with the event proceedings:

- The final event agenda comprising links to speakers' presentations
- The updated attendees list
- A link to the pictures of the event, which have been placed on Facebook<sup>55</sup> and Google +<sup>56</sup>
- A link to the Final Event Storify<sup>57</sup>, a story composed of tweets and pictures of the event

News and discussions on the Final Event success and proceedings have been added on:

- The project website<sup>58</sup>
- The LinkedIn group<sup>59</sup>
- Google + page<sup>60</sup>
- Facebook page<sup>61</sup>
- The project Twitter account<sup>62</sup>

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<sup>54</sup> [http://wiki.pro-ibiosphere.eu/wiki/Final\\_Conference](http://wiki.pro-ibiosphere.eu/wiki/Final_Conference)

<sup>55</sup> <https://www.facebook.com/media/set/?set=a.300160306810331.1073741828.108880212605009&type=3>

<sup>56</sup> <https://plus.google.com/photos/108695805977454304422/albums/6024342580507608609>

<sup>57</sup> <http://sfy.co/cjzL>

<sup>58</sup> <http://www.pro-ibiosphere.eu/news/>

<sup>59</sup> [https://www.linkedin.com/groups/PRO-iBiosphere-4682845?trk=myg\\_ugrp\\_ovr](https://www.linkedin.com/groups/PRO-iBiosphere-4682845?trk=myg_ugrp_ovr)

<sup>60</sup> <https://plus.google.com/108695805977454304422/posts>

<sup>61</sup> <https://www.facebook.com/proibiosphere>

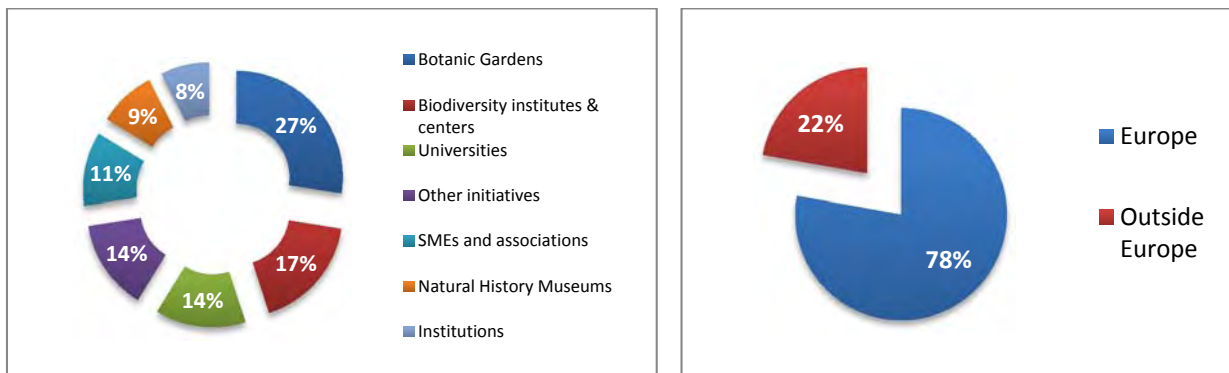
<sup>62</sup> <https://twitter.com/proibiosphere>

## 4. Audience

### 4.1. Participants' profile

The targeted audience was of 60 selected participants according to the DOW. In total, 76 participants participated in the Final Conference (see the online list of participants<sup>63</sup>) and 79 participants attended pro-iBiosphere Final Event (Meeting 6) activities.

Major European and international biodiversity organisations have been represented, thus the audience profile was quite broad, covering several kind of organisations (Institutes, Universities, Museums, Institutions, SMEs and NGOs a.o.). Most participants (78%) were from Europe, the top 5 countries being from Western Europe: Belgium (29%), UK (20%), the Netherlands (15%), Germany (11%) and France (10%). 22% of participants were from overseas (4 from the USA, 2 from Asia and the Pacific and 1 from Africa). See figures 4, 5 and 6 below.



Figures 4 & 5 - Attendees profile and origin

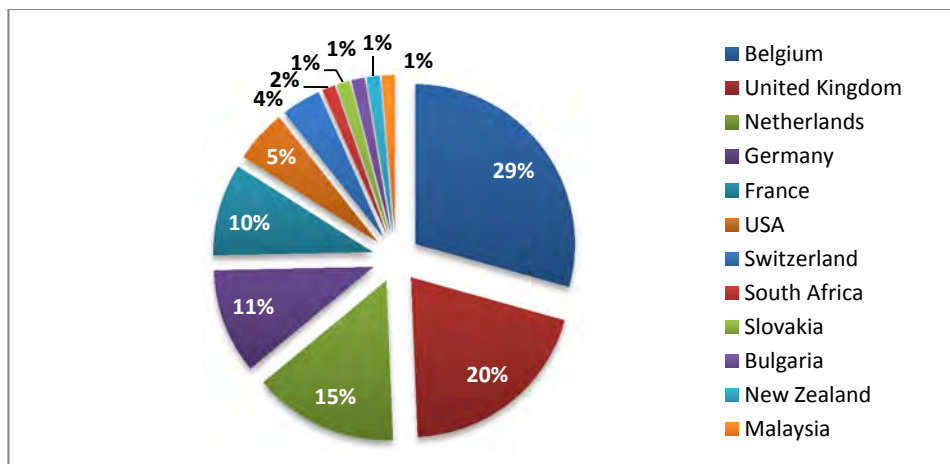


Figure 6 - Attendees' country of origin

Therefore, the Final Conference successfully reached the targeted stakeholders:

- Environmental/natural sciences researchers in academia, institutes, industry, consultancies & governments
- Taxonomists, ecologists, bioinformaticians, conservationists, ethno-botanists, geneticists, chemists,...
- Aggregators of taxonomic data (e.g., GBIF, EOL, CoL)
- Indexing (e.g., IPNI, MOBOT, etc.)
- Other projects and initiatives (e.g., BioVel, World Flora online, ViBRANT, LifeWatch)

<sup>63</sup> [http://wiki.pro-ibiosphere.eu/wiki/Final\\_Conference](http://wiki.pro-ibiosphere.eu/wiki/Final_Conference)

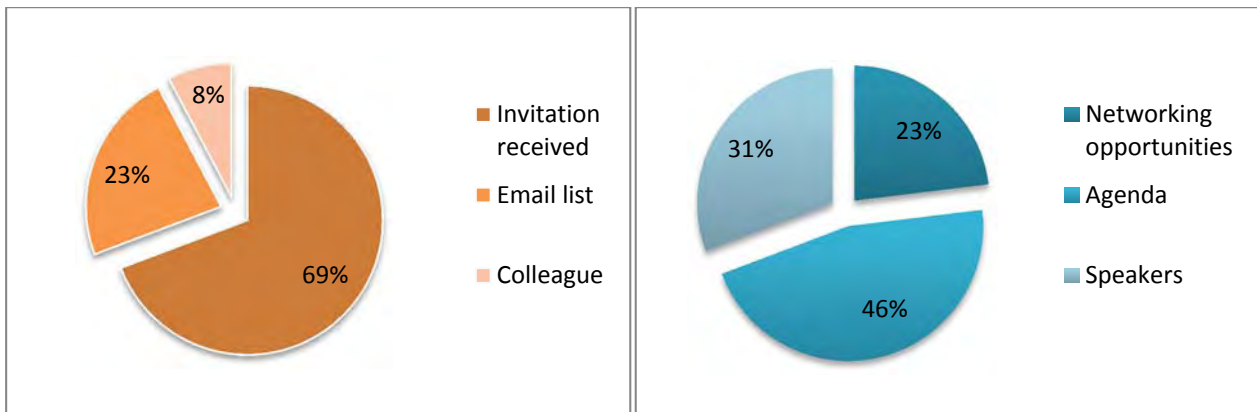
These key stakeholders were targeted as being likely to take the best advantage of project outputs, to commit and sign the Bouchout Declaration and to consider a possible involvement in the sustainability phase of the project.

#### 4.2. Event survey

A thank you email has been sent to all Final Event participants following the Final Conference with a link to an online event survey<sup>64</sup> using Google Forms. A total of 13 attendees participated in the event survey representing a response rate of 16, 5%.

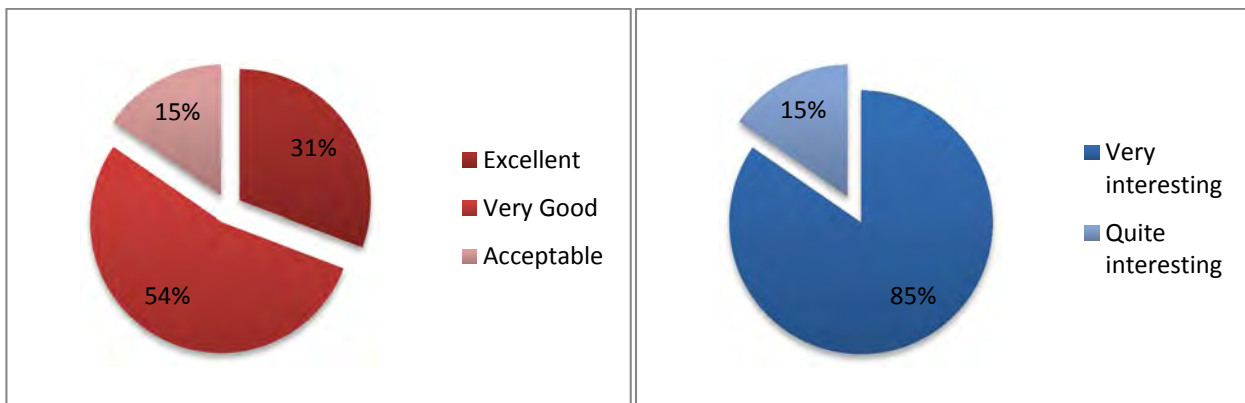
The overall results of the event survey demonstrate that all respondents were satisfied with their participation to the Final Conference and by its content. The majority of respondents made more than 5 useful contacts during the conference and would recommend it to others.

69% of total respondents have been invited to the event, most probably through the sending of the blast email and/or personal invitation from partners, the main attractiveness of the Final Conference was the agenda (46%) followed by speakers (31%). Networking opportunities has also been a motive for attendees to join the Final Conference (23%). See figures 7 and 8 below.



Figures 7 & 8: "How did you hear about the Final Event?" - "What attracted you to the Final Conference?"

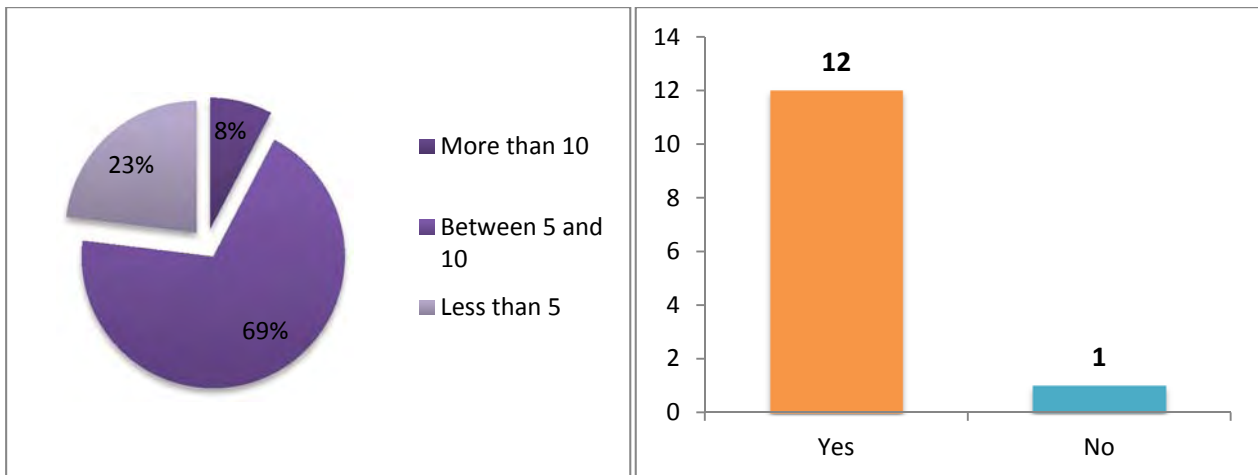
The respondents have been largely satisfied with the content of the event with 85% of them assessing it as either excellent or very good and all respondents found an interest in participating. See figures 9 and 10 below.



Figures 9 & 10: "Content rating of the Final Conference?" - "Interest in participating?"

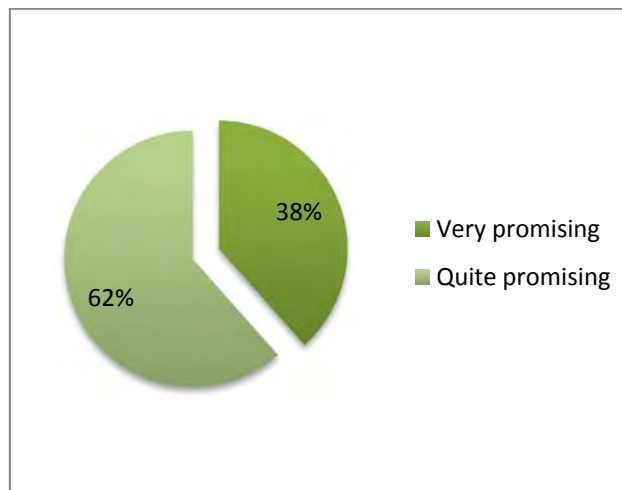
<sup>64</sup> <https://docs.google.com/spreadsheets/viewform?fromEmail=true&formkey=dEVjbjNzbUNHMmxEbWFEYWN1N1J6eWc6MA>

As regards to the number of useful contacts made by respondents, 77% of them made more than 5 useful contacts during the Final Conference (see figure 11 below) while coffee breaks, lunches and a networking cocktail facilitated the networking of participants. 12 respondents out of 13 would recommend the Final Conference to others.



**Figures 11 & 12: "How many useful contacts?" - "Would you recommend the Final Conference to others?"**

When considering the vision of the OBKMS by respondents after the Final Conference, all of them feel the OBKMS is promising while 38% of them find it very promising and 62% of them find it quite promising. See figure 13 below.



**Figures 13: Do you feel after the Final Conference that the pro-iBiosphere project towards a OBKMS is:**

## 5. Event outputs

### 5.1. Opening session

This session started with a speech from pro-iBiosphere Project Officer at DG CONNECT e-Infrastructure Unit who presented the perspectives for e-Infrastructures under H2020.

Then the local host and pro-iBiosphere project partner, Quentin Groom from the Botanic Garden Meise, shared a presentation on the scientific collections in the Digital World.

Finally, Soraya Sierra, pro-iBiosphere project leader from Naturalis Biodiversity Center presented the pro-iBiosphere project.

### 5.2. Towards intelligent openness of biodiversity data

This session highlighted four main challenges as regards to the openness of biodiversity data with presentations from project partners on the following topics:

- Legal issues of copyright and Open Access in the Biodiversity domain
- Mark up in the mobilization of Biodiversity literature
- Unlocking the Legacy: The Untapped Value of Data in Taxonomic Literature
- Automated registration of new taxon names

The discussions can be summarized into the following key points:

- Biodiversity data must be open
- New biodiversity publications should be marked up from now on
- Some kinds of data can only be gathered from the literature
- Text mining and fine-grained mark-up can provide additional functionality on top of coarse-grained mark-up
- Automation can make workflows more efficient

The session was then followed by a question and answer session with the audience.

### 5.3. Interoperability and vision of interoperability

Interoperability, as one of the main identified challenges by the project (see above in section 2.1. - Agenda), was divided into two sessions to gather in the same time inputs from project partners on (i) Interoperability between e-Infrastructures, (ii) Interoperability of taxon treatments and (iii) Persistent identifiers and inputs from external stakeholders from other biodiversity initiatives through a panel discussion on the vision of interoperability.

The key outputs of interoperability are:

- Biodiversity literature is very rich in data and much has a basic structure (treatments) across all Biota. Tools for semi-automatic markup exist. An identifier system for treatments exists.
- Semantic Web compatible HTTP-based identifiers are a necessity. Local maintenance of stability and centralized redirection (DOI) both have good use cases. Combination is actually beneficial.
- Most of today's biodiversity e-platforms were not conceived as components in service-oriented software environments and have to be adapted
- Legacy literature should be strategically marked up. Prospective literature should be semantically enhanced.
- Keep mission-critical URIs (... URLs, IRIs, web-addresses) for resources stable. Priority should be given to URIs for institutions, collections, specimens, geolocations, taxa, publications, treatments, traits and features.



- Start using services. Think workflows to identify gaps and use cases. Tackle fundamental interoperability issues in a focused and concerted way.

The key findings from the panel discussion on the vision of interoperability are:

- Important role for communities to define roles of web services (use-case-driven; distinguish infrastructure, curator, scientist!)
- Need for reliable, stable, focussed, scalable web services
- Need for basic functionality for complex research questions
- LOD is a foundation for further services
- 4-Star Open Data (<http://5stardata.info/>) “expose RDF” not enough. 5-star: builds the links
- Current competitive funding models lead to fragile infrastructure and need to be rethought
- Interoperable data facilitates evidence-based decision-making
- Societal impact of biodiversity can be amplified by interoperability with other domains (e.g. climate data)

#### **5.4. Towards an Open Biodiversity Knowledge Management System (OBKMS) and the Bouchout Declaration**

The major aim and output of the pro-iBiosphere project was to evaluate the changes that will be required to achieve an Open Biodiversity Knowledge Management System (OBKMS). As a result, a particular effort during this Final Conference has been to (i) present and to promote this OBKMS, to (ii) identify and select key stakeholders that should participate in the Final Conference so as to (iii) ensure their commitment to the OBKMS through the signature of the Bouchout Declaration. Thus, three sessions intended to achieve this aim, the first one explaining the OBKMS vision and envisioning it into a global context, the second bringing a panel of key stakeholders to discuss on the impact of the Bouchout Declaration and the last session was dedicated to the official signature ceremony and the simultaneous launch of the project website ([www.bouchoutdeclaration.org](http://www.bouchoutdeclaration.org)).

The major conclusions that aroused from the OBKMS is:

- Free and open access
- Serving society through services for people and machines
- Knowledge management system that works across multiple people
- Continuous collaborative review and improvement

The panel discussion on the impact of the Bouchout Declaration can be summarised into three key topics:

##### **An introduction on what is the Bouchout Declaration:**

- An enabling mechanism for international cooperation and collaborations
- A signal from the community that we want to provide access and contribute to the growing knowledge sphere.
- A basis as an educator regarding new possibilities for open access and finding data and to foster respective debates

##### **Inputs on what will be the impact of the Declaration from panel members:**

- Changes in social norms
- Role model for getting a community together, implement Open Access
- The BD as initiator of internal discussions on Open Access, data sharing
- Open access as an evolutionary process: knowledge becomes an asset
- Easy shopping
- Usage metrics of biodiversity data

### Recommendations on the next steps to be undertaken for the Declaration

- From principles to action (e.g. implementation of identifiers; commitments of the institutions)
- Optimize the impact through outreach and involvement of the community
- Coordinate with other related initiatives
- Loose agile governance
- Develop metrics on implementation of the principles
- Prepare FAQ and if necessary specific documents dealing with
  - General Open Access: Business plans for future publishing and data sharing
  - Copyright needs to be properly explained
  - Costs versus attribution
  - New publishing models that suit our community
  - Implementation manual(s) of identifiers

The signature ceremony created a real buzz among the biodiversity community with 50 tweets in 7 days representing an estimated reach of 60,180 accounts<sup>65</sup> reached and 75,398 impressions<sup>66</sup> according to a TweetReach<sup>67</sup> Report.

## 5.5. Sustainability perspectives and future research needs

This session was divided into two sub sessions being (i) Sustainability perspectives comprising presentations of other biodiversity initiatives and (ii) a Panel discussion on recommendations and future research needs to gather key recommendations and inputs from biodiversity key experts for the preparation of the next WP 2016-2017 of EU Horizon 2020 Framework Programme for Research and Innovation.

The outputs on the sustainability perspectives can be summarized into two main needs being to be more efficient and for outreach:

### 1. Need to be more efficient

- Institutions continue to resource existing products and services, but do it in a smart way, making use of more efficient tools and technologies
- Funding for infrastructure and services will be mixed and there will be opportunities for those specializing in particular technical areas
- Demonstrate the benefits of OBKMS and provide evidence that they outweigh the costs
- Online training
- We need to support the development of production level tools, not just the prototypes
- Move from short-term project to long-term infrastructure

### 2. Need for outreach

- Build community: better understand user needs; support user feedback
- OBKMS not yet self sustaining, still needs institutional backing and additional funding to transform from current structures
- Funding models to explore
- Mixed funding
- Grant and project income
- Institutional core funds
- Public-private partnership (e.g. provider subscription for some technical service)
- Hybrid community/institutional
- Commercial services based on added value interpretative services
- Practical demonstrations of value to the institutions themselves, users and society at large will assist transition
- Ambassadors - advocacy

<sup>65</sup> The total number of unique Twitter users the tweet was delivered to

<sup>66</sup> When tweet has been delivered to the Twitter stream of a particular account

<sup>67</sup> <http://tweetreach.com>

- Training
- Responsiveness
- Easy to access documentation

As regards to future research needs, the recommendations can be grouped into five topics:

**1. Actively pursue the publication of existing content**

- Encourage individuals, citizen science organisations, institutions and projects to make their existing data openly accessible by means of targeted joint action and coordination projects. The aim is to contradict misconceptions with respect to legal issues and promote the positive effects of open data provision.
- Include encouragement to free existing content (“background IPR”) in calls for funding applications.
- Encourage project to provide data and data-processing in the form of (web)services, but also provide for large-scale downloads (for local processing) and publication of data in non-custom formats.

**2. Mobilise “primary biodiversity information”**

- Call for preparatory projects for a Europe-wide initiative for the digitisation, data extraction and re-use of biodiversity literature and natural history specimens. The aim is to provide a solid business model, standards, and coordination to avoid duplication of efforts (especially with the Biodiversity Heritage Library), and to identify sustainable repositories.
- Continue the development of text mark-up tools to facilitate access to data in existing biodiversity literature and their use in data analysis.
- Establish linking and usage-tracking mechanisms between digitized specimen data and both legacy and prospectively published literature.
- Build multilingual ontologies and controlled vocabularies for biodiversity data.

**3. Build an interdisciplinary information infrastructure**

- Facilitate the connections of the biodiversity domain and biodiversity informatics with other EU programmes with similar aims, such as the Future Internet Research and Experimentation initiative, EUROPEANA (CEF), European Open Data projects, and the ESFRI initiatives.
- Further convergence with programmes outside the EU, too, e.g. within the framework of the Belmont Forum.
- Development of production level tools to support the participation of the broad community.
- Further wide application of interdisciplinary standards and support the change management necessary to adopt common standards, including cross-domain ontologies

**4. Build and support key components necessary for Open Biodiversity Knowledge Management**

- Support sustainable openly accessible repositories for taxon names plus name-resolving services.
- Establish the Biodiversity Catalogue as the European standard registry and documentation for biodiversity web services
- Support the Global Biodiversity Information Facility with projects targeting agreed aims that cannot be covered by GBIF’s core funding.
- Follow the recommendations given in the report of the OECD megascience forum that led to the formation of GBIF and the recently published Global Biodiversity Informatics Outlook as well as the Decadal View of Biodiversity Informatics.

**5. While biodiversity informatics is basically global in nature, introduce a specifically European perspective by:**

- Furthering multilingual developments.
- Rally the European taxonomic community to update and maintain the European standard lists of organisms (E.G PESI: Fauna Europaea, Euro+Med PlantBase, European Register of Marine Species)
- Link the standard lists with relevant literature, specimens, and national checklists in order to facilitate species identification and management of concept problems
- Build a sustainable European GBIF Node, which helps to coordinate OBKMS.

## 5.6. Wrap-up session

For the wrap-up session, the moderators of each session jointly prepared a summary of the discussions for each session. This summary (PowerPoint presentation) has been made available on the wiki<sup>68</sup> following the event and promoted via the project online tools (email to participants, Twitter, website, LinkedIn and Google +).

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<sup>68</sup> [http://wiki.pro-ibiosphere.eu/w/media/6/67/Sessions\\_conclusions\\_moderators.pdf](http://wiki.pro-ibiosphere.eu/w/media/6/67/Sessions_conclusions_moderators.pdf)

## 6. Conclusions and recommendations

### 6.1. Conclusions

The pro-iBiosphere Final Conference attracted a targeted audience of more than 75 stakeholders. Positive feedback from the audience and speakers shows that the conference provided stakeholders with a complete overview of the project outputs and an excellent platform for discussions. Indeed, according to the event survey conducted following the Final Conference, it appeared all respondents were satisfied with their participation to the Final Conference and by its content and the majority of them would recommend it to others.

The intense activity on Twitter (see the Final Event Storify<sup>69</sup>) through the use of the Final Event hashtag #pibmei by project partners and participants and following the official launch of the Bouchout Declaration also depict the interest and buzz that aroused from the Final Conference.

The main goal of the Final Conference was to bring together policy and biodiversity stakeholders from Europe and overseas to present the project results, discuss on the project sustainability perspectives and provide key recommendations and inputs from biodiversity experts to the European Commission. The objective has been successfully achieved through active discussions between project partners, key selected experts (speakers) and the audience on reviewing key areas of improvement in the design and implementation of an OBKMS and providing recommendations on future research needs.

### 6.2. Recommendations

The Final Conference speakers and moderators had been asked to focus their presentation and inputs on key recommendations for the preparation of the next WP 2016-2017 of EU Horizon 2020 Framework Programme for Research and Innovation. As a result of the panel discussion on future research needs, 5 key recommendations emerged (which are further developed in section 5.5):

1. Actively pursue the publication of existing content
2. Mobilize “primary biodiversity information”
3. Build an interdisciplinary information infrastructure
4. Build and support key components necessary for Open Biodiversity Knowledge Management
5. Introduce a specifically European perspective

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<sup>69</sup> <http://sfy.co/cjzL>