COST ACTION BOTTOMS-UP

BIODIVERSITY OF TEMPERATE FOREST TAXA ORIENTING MANAGEMENT SUSTAINABILITY BY UNIFYING PERSPECTIVES

CA18207

WORKING GROUP 1

TOWARDS COMMON TOOLS FOR FOREST MULTI-TAXON RESEARCH AND MONITORING

DELIVERABLE 1

PLATFORM DESCRIPTION

ANNEX 1

PLATFORM BYLAWS

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BYLAWS

DATA USE AND RULES OF GOVERNANCE

Approved by the founding BOTTOMS-UP founding Consortium on November 13th 2020

ARTICLE 1   STATUS AND PURPOSE OF THE BOTTOMS-UP DATA PLATFORM

1. The data platform of forest multi-taxon data (short: BOTTOMS-UP platform) is a collaborative initiative within the framework of the COST (acronym of *European Cooperation in Science and Technology*) Action CA18207 *Biodiversity Of Temperate forest Taxa Orienting Management Sustainability by Unifying Perspectives* (short: BOTTOMS-UP project).

2. One of the purposes of BOTTOMS-UP project is to establish and maintain a common data platform of high-quality multi-taxon data for Pan-European forests, and to facilitate the use of these data for non-commercial purposes, academic research and applications in biodiversity conservation and for the implementation of sustainable forest management criteria.

3. For the purpose of these bylaws:

    a) dataset means a homogeneous range of data sampled through the same protocols and referring to a unique dataset custodian;

    b) stand means a specific area, which is sufficiently uniform in species composition, age arrangement, and condition as to be distinguishable from the forest on adjoining areas. It represents the unit for which one and the same silvicultural treatment is prescribed (see Van Laar A, Akça A. Forest mensuration. Springer Science & Business Media; 2007);

    c) site means a homogeneous geographical area within which data are collected in one or more plots or, for a minority of taxa, across its entire area;

    d) plot means a concretely defined area as part of a fieldwork to which one or more sampling units are referred and of which geographical coordinates are known;

    e) pan-European forest refers to land with a tree canopy cover equal to or of more than 40 percent, within other threshold values as defined by FAO, and within the Pan European region as defined by the European Environment Agency;

    f) forest stand structure data refer to numeric plot level dendrometric data including tree species composition, living volume data based on size, condition and growth of individual standing and trees, stand age or development stage;

    g) management variables include a categorical definition of the sylvicultural system adopted and any other associated quantitative data;

    h) site conditions refer to lithological, climatic and topographic parameters;

    i) team means a group of two or more persons related to the same research project;

    j) metadata form means a quantitative and qualitative description of each dataset including sampling protocol specification;

k) parallel project means a generically meant project partially based on BOTTOMS-UP data platform referring to different scientific result products: research papers, proposals for national or international programs or scientific product;

l) observational studies mean those collecting data in forest stands relatively homogeneous in terms of forest stand structure and management in space and time, not affected by treatments specifically designed for research activities, where sampling is not repeated during a time frame to test specific multitaxon diversity changes;

m) experimental studies mean those collecting data in forest stands where a treatment is undertaken to make a discovery, test a hypothesis, or demonstrate a known fact;

n) Dataset Custodian is a person that takes care of a dataset within the platform: when contributing data this person provides details about the public or private institution that holds the property of the data with details about the acknowledgments that have to be reported for it; this person will be contacted by the platform custodians or by the Governing Board for whatever issue relative to the specific dataset.

4. The BOTTOMS-UP data platform focuses specifically on multi-taxon data in plots with extensive data on forest stand structure and site conditions. The platform will include data from both observational and experimental studies. Whenever possible, data from experimental studies will be included both among experimental and observational data. The choice about which plots (e.g. control plots) or sampling repetition (e.g. before or after manipulation) will be made by the data custodian.

5. For each study site, the obligatory requirements to be included in the BOTTOMS-UP data platform are:

    a) forests have to belong to managed or unmanaged pan-European closed forests;

    b) sampling of at least three plots per each site;

    c) detailed description of the sampling design and survey protocol adopted for each dataset;

    d) data on site conditions;

    e) data on forest stand structure;

    f) data related to management variables;

    g) data on a minimum of three taxonomic groups, representing at least two of the following broad groups of organisms: *Plantae*, *Fungi* and *Animalia*, and including *Animalia*, as identified at the following taxonomic ranks or informal groups:

6. Plantae

    i. Bryophytes

    ii. Tracheophytes

7. Fungi

      i.   Lichens

      ii.   divisions or higher levels for fungi

8. Animalia

      i.   all classes. For insects, orders or higher levels.

6. Data sampled at the stand or site level can be contributed if deriving from sampling at the plot level within the same stand or site, that can be aggregated across taxa or with structural attributes only at the stand level. A dataset composed exclusively of data originally collected at the stand or site level cannot represent a stand-alone contribution to the BOTTOMS-UP platform.

7. Data must be provided in an electronic format and metadata must be incorporated in the specific format (Meta data form) provided by the Governing Board.

8. Taxonomic data deriving from meta-genomic analyses of environmental DNA can be contributed as an addition to data collected through traditional taxonomic sampling within the same sites. These data will be included in the dataset, even if they could not represent a stand-alone contribution to the BOTTOMS-UP platform.

9. Other types of data can contribute to implement the dataset, but they are not obligatory requirements;

10. The platform will involve also datasets that do not comply with the requirements for one individual feature (e.g. lacking information on animalia, or dendrometric measures). The custodians and contributors of datasets, hereafter "external datasets", will be invited to those individual studies that can take advantage of the information included in them, but their data custodians and contributors will not be automatically invited to all the publications of the Consortium.

ARTICLE 2   DATASET CONTRIBUTIONS TO THE BOTTOMS-UP DATA PLATFORM

1. Researchers who are willing to contribute their own published or unpublished data can apply to become a member of the BOTTOMS-UP Consortium. Applications should be sent to the Custodian and Deputy Custodian of BOTTOMS-UP data platform.

2. To each individual dataset included in the BOTTOMS-UP platform, a Dataset Custodian and one or several additional Dataset Contributors are assigned, who, through data contribution, become part of the BOTTOMS-UP consortium referred to in Article 3.

3. Dataset contributors are those people who comply with at least one of the following criteria:

    a) coordinated and or designed the sampling;

b) collected data on forest stand structure;

c) collected data on one or more of the above-mentioned taxonomic ranks or informal groups;

d) entered and harmonized data.

4. It is the responsibility of the Dataset Custodian to forward communication received from the BOTTOMS-UP Governing Board to the individual data contributors, and to inform the Governing Board about any changes of their contact data.

5. The BOTTOMS-UP score rates the overall size and value of datasets in the BOTTOMS-UP dataset. The score is the cumulative sum of the "number of taxonomic groups surveyed" (Nt) multiplied by "the number of the plots for each site" (Np). For example, if a team has collected two taxa in 10 plots of the same site, the BOTTOMS-UP score for the team is 20. If a team has collected two taxa in two plots and five taxa in five plots of the same site, the BOTTOMS-UP score is 29. In those cases where a single team has collected data on plots within different sites (S) (i.e. two or more datasets) its score amounts to the overall sum of the single site score.

Total Score:

$$\sum_{n=S} Nt \times Np$$

6. The percentage of a dataset BOTTOMS-UP score relatively to the overall BOTTOMS-UP platform score is called the relative BOTTOMS-UP score. This will be used to determine the relative contribution of each dataset in each individual study or project as well as the initial number of Dataset Contributors allowed for each dataset. The sum of the BOTTOMS-UP score of all datasets of which an individual is custodian will determine the weight of data owner votes in elections of the BOTTOMS-UP Governing Board (see Article 3).

7. Having contributed plot records to BOTTOMS-UP does not limit other usages of these data by their contributor. Unpublished data, i.e. data that do not exist in form of individual plot records in any publically accessible print or online sources, can be withdrawn from the BOTTOMS-UP platform by their Dataset Custodians at any time. Such withdrawal does not affect usages and publications that have already been approved at that point of time.

ARTICLE 3   BOTTOMS-UP CONSORTIUM

1. Individuals or teams who agree with these bylaws and contribute to BOTTOMS-UP platform with data that meet the specifications defined by the BOTTOMS-UP Governing Board become members of the Consortium once their data are included in the common data platform.

2. The founding consortium of the BOTTOMS-UP platform consists of those proposers/members of the Management Committee (MC) of the COST Action Biodiversity Of Temperate forest Taxa Orienting Management Sustainability by Unifying Perspectives (BOTTOMS-UP) that, in addition to participate to the Action proposal and/or MC, are data custodians of datasets suitable data for the BOTTOMS-UP platform, or substantially contributed to the initial effort of platform creation by data management and standardization. They are listed here in alphabetical order: Reka Azalos, Rafael Barreto De Andrade, Gediminas Brazaitis, Sabina Burrascano, Thomas Campagnaro, Francesco Chianucci, Pallieter De Smedt, Inken Dorfler, Jacob Heilmann-Clausen, Jeňýk Hofmeister, Martin Mikolas, Philippe Janssen, Sebastian Kepfer Rojas, Thibaut Lachat, Asko Lohmus, Peter Odor, Bjorn Norden, Yoan Paillet, Johannes Penner, Tommaso Sitzia, Flora Tinya, Giovanni Trentanovi, Kris Vandekerkhove.

3. The BOTTOMS-UP Consortium has the following functions:
   a) it elects the BOTTOMS-UP Governing Board;
   b) it approves and potentially modifies these bylaws.

4. The whole BOTTOMS-UP Consortium has to be informed about any intended usage of data retrieved from the BOTTOMS-UP platform directly or indirectly. Only members of the BOTTOMS-UP Consortium are entitled to propose paper projects using BOTTOMS-UP platform, but non-members can submit a proposal jointly with a BOTTOMS-UP Consortium member. Each proposal should be firstly validated by the Governing Board, then will be proposed to the whole consortium for opt-in procedure.

5. Communication within the BOTTOMS-UP Consortium is via e-mail; it is the responsibility of each BOTTOMS-UP Consortium member to provide the Governing Board with a working e-mail address.

6. Decisions by the BOTTOMS-UP Consortium (including elections) are made via electronic ballot (i.e. e-mail) within a 21-day period by majority among the returned votes. In these ballots, each BOTTOMS-UP Consortium member accounts for one, two or three votes, based on the amount of data they contributed to the data platform. An individual BOTTOMS-UP score above or equal to 70% of the overall platform accounts for three preferences, an individual BOTTOMS-UP score above or equal to 35% accounts for two votes, an individual account below 35% accounts for one preference. Those who have been appointed as Consortium members without contributing data always account for one preference.

ARTICLE 4   GOVERNING BOARD, CUSTODIAN AND DEPUTY CUSTODIAN

1. BOTTOMS-UP is represented and governed by its Governing Board. During the COST Action 18207 the Governing Board will include the Action Chair, Vice Chair and 3 persons elected from the founding Consortium. After the end of the COST Action, the Governing Board is elected by the BOTTOMS-UP Consortium for three-year renewable terms. Eligible are all BOTTOMS-UP Consortium members who have been nominated by a BOTTOMS-UP Consortium member. The nomination period will last a minimum of 21 days.

2. In the election, each member can vote for up to five candidates, with the votes being weighted as in Article 3. The five candidates with the highest number of votes are elected; in case of a tie for the fifth position, all candidates with the same number of votes are also elected. If there are as many or fewer nominees than positions to be placed, the candidates are appointed without election. If more than half of the regular positions of the Governing Board has become vacant, positions are replaced by an election for the remaining time of the term.

3. The Governing Board is responsible for managing the BOTTOMS-UP platform and any ancillary data, processing incoming data requests as described in Article 6, representing BOTTOMS-UP on conferences and similar occasions, attracting additional data or paper projects, preparing grant proposals as well as for maintaining a BOTTOMS-UP web page and updating the BOTTOMS-UP data on the BOTTOMS-UP action website.

4. The Governing Board can appoint additional researchers from inside and outside the BOTTOMS-UP Consortium to assist them with the data management.

5. During the COST Action 18207 the Action Chair and Vice Chair will be the Platform Custodian and Deputy Custodian. After the end of the Action, the Governing Board elects from its members the BOTTOMS-UP Custodian and Deputy Custodian. They are responsible for running the everyday business of the platform serving as main contact for requests from inside and outside the Consortium.

6. Unlike the procedure described above, the first Governing Board for the period November 2019 – October 2022 will be assembled through an election within the founding Consortium to facilitate a quick set-up of the first platform version.

ARTICLE 5   DATA AVAILABILITY REGIMES

1. All the data contributed to the BOTTOMS-UP platform up to the end of the BOTTOMS-UP project will be used for the research objectives of the project itself with no limitation in this regard.

2. For objectives that are beyond the BOTTOMS-UP project and for a parallel projects that start or continue over the end of the BOTTOMS-UP project, data availability will depend from the regime that the Dataset

Custodian assigns at the time of data submission or update. Data availability regimes can be selected among the following three.

a) Restricted access: data requires an explicit consent from the Dataset Custodian each time their use is requested. If the Dataset Custodian does not give such an approval (possibly after negotiation of details) within 21 days of distributing the parallel project, the data will not be made available for the particular request.

b) Semi-restricted access: data are generally available for all parallel projects that are in agreement with these by-laws. The Dataset Custodian will be informed by the Platform Custodian and Deputy Custodian at least 21 days before the release of data. If no objection is raised during this period, this will be considered as implicit permission to use these data for the particular purpose. Contributors are encouraged to assign this access regime to their data.

c) Open access: data are made available for all parallel projects that are in agreement with these by-laws. The Dataset Custodian will be informed by the Platform Custodian and Deputy Custodian at the moment of data release.

ARTICLE 6   DATA REQUESTS AND TERMS OF DATA USE

1. Individuals or groups of individuals who would like to use the BOTTOMS-UP data platform for a parallel project, must submit a request form to the Governing Board containing:

a) lead author;

b) project title;

c) names and addresses of the applicant(s), indicating who of them is a Consortium member;

d) brief description of the aims of the parallel project;

e) specification of the data type needed;

f) estimated time of delivery of results, e.g. manuscript submission or proposal application;

g) envisaged publication and pre-opt-in authorship;

h) explicit statement that the applicant agrees with these bylaws;

i) for a parallel project delivered within the BOTTOMS-UP project, also relationships with the BOTTOMS-UP project objectives and reference Working Group should be stated.

2. Only parallel projects by BOTTOMS-UP Consortium members will be considered, but non-members can submit a parallel project jointly with a BOTTOMS-UP Consortium member. Only parallel projects that are

based on multiple datasets are considered, if a single dataset has to be used, the Platform Custodian and Deputy Custodian will encourage direct exchange with the specific Dataset Custodian.

3. For the incoming requisition form of each parallel project, the Governing Board will check:

   a) The eligibility of the applicant to obtain data according to these bylaws;

   b) The respect of these bylaws;

   c) The presence of a link between the aims, expected outputs and data requested;

   d) The presence of any conflicts with already approved projects;

   e) The consistency with the BOTTOMS-UP project objectives for those research projects submitted during the BOTTOMS-UP itself.

   In order to be forwarded to the Consortium members for data request a parallel project should be unanimously approved by the Governing Board.

4. If the requirement of point 3 have been met, the Governing Board will send the request to all Dataset Custodians and all Data Contributors whose data are concerned.

5. Within 28 days after such a request has been sent out, contributors of restricted access data can agree to provide their data and those of semi-restricted access data can disagree with their usage in this particular case. After the deadline and based on the received answers of the Dataset Custodians, the Governing Board will release the available data to the authors of the parallel project.

6. The Governing Board will make efforts to deliver the data as fast as possible; however, the speed of this service may be affected by the available labor force and funding. Upon data delivery, the applicants must provide the result (e.g. a manuscript ready for submission or an advanced draft) to the Governing Board within two years. After this period, they lose their mandate to use the data unless they ask for extension and get it granted.

7. The Governing Board is entitled to ask for the progress of the parallel project using BOTTOMS-UP data at any point of time. Each publication and conference contribution using BOTTOMS-UP data must be sent to the Governing Board before submission for a check whether the data were used in accordance with these bylaws. This check will not deal with the scientific quality of the parallel project and the Governing Board will keep any information contained in the manuscript as confidential until it become of public knowledge.

8. The applicants are not allowed to pass any data obtained from BOTTOMS-UP project to third parties or use them for other purposes than stated in the original parallel project. Data obtained from BOTTOMS-UP project can be used for non-commercial purposes only and the final parallel project product should contain a proper citation of the BOTTOMS-UP data platform and of the original data sources (or at least

main sources if there are many sources, possibly in an electronic appendix). Recommended references will be provided by the Governing Board.

9. The titles of the parallel projects that have received data from BOTTOMS-UP project, together with the names of applicants, can be published on the COST Action website. The applicants will send the parallel project product based on BOTTOMS-UP data platform to the Custodian upon it become of public knowledge; links to the parallel project products can be added to the COST Action website. The applicants are encouraged to report any errors found in the data to the custodians of the original databases.

10. At any stage, if a data applicant is not complying with these bylaws or to a correct academic conduct, the Governing Board can interrupt the permission to use BOTTOMS-UP data, regardless of the level of work already carried out by the applicant.

11. A correct academic conduct includes:

a) A timely, continuous, honest and complete provision of information on the parallel project advancement, dissemination at various levels, short and long term perspective to all co-authors and to BOTTOMS-UP Governing Board;

b) Respect of the original agreements on authorship and/or roles in the parallel project;

c) Accounting in both formal and informal communications for the roles of co-authors and of the BOTTOMS-UP data platform Governing Board, Custodian and Deputy Custodian.

12. Specific attention will be paid to behaviors that may result in a direct or indirect expression of whatever discrimination based on gender, nationality as well as other elements of diversity.

ARTICLE 7   AUTHORSHIP

1. The lead author of a parallel project (either a Consortium member or a non-member jointly with a Consortium member) is the person who submitted a requisition form for a parallel project as detailed in Article 6.

2. Specifically, for parallel project research papers related to the six Working Groups (WGs) of the BOTTOMS-UP project as described in the Action Memorandum of Understanding, agreements on roles and authorship should be formally communicated to the Working Group leader, the Action vice-Chair and the Action Chair before starting the necessary activities. Changes to this formal agreement should be timely communicated and justified formally to the Working Group leader, the Action vice-Chair and the Action Chair. Relevant omissions or miscommunication by the lead author will represent a lack of compliance to these by-laws.

3. For a dataset to be included in a parallel project research paper, data should be contributed before the deadline specified by the lead author. The Custodian of each dataset will be offered co-authorship. The number of additional data owners to be offered co-authorship will depend on the relative BOTTOMS-UP score of the dataset in relation to the overall score of the database at the moment of manuscript/project proposal; i.e., 2% points will give the possibility to offer co-authorship to one data owner (with priority given to Dataset Custodian), 4% points to offer co-authorship to 2 data owners and so on.

4. Which data owners will be included in each specific manuscript/project will be defined by the group of data owners for a specific dataset, and this decision will be formally communicated to the lead-author and to the Governing Board. In this way the maximum number of co-authors deriving from data contribution will never exceed 50 when the whole BOTTOMS-UP platform is used.

5. Custodians of datasets making up less than 2% of the data platform will be offered the option of: contributing data without being included among co-authors, contributing data and opt-in as a Consortium member, not contributing data.

6. Exceptions to these general principles can be negotiated 1) in case of papers dealing with a large number of datasets, in which case the Governing Board can decide to increase the number of co-authors and 2) in case of datasets where special funding or organizational conditions would make the data unavailable unless more co-authors, than determined by the calculated points, are invited as active contributors. These exceptions can only be negotiated for persons directly involved in data collections and actively contributing to the manuscript as specified in point 4, and needs to be approved by the Governing Board.

7. Overall, authorship of manuscript completely or partly based on data received from BOTTOMS-UP requires at least two of the following conditions: (i) data provision; (ii) intellectual contribution to study design; (iii) participation in the statistical analyses; (iv) interpretation of the results; (v) writing or (vi) revising the text.

8. In addition to the authors listed in the parallel project (either within or out of the Consortium), all Consortium members will be invited to co-author an initial manuscript/report that describes and promotes the BOTTOMS-UP platform. For further updates on the content and functionality of BOTTOMS-UP data platform, upon discretion of the Governing Board, authorship can be offered again to all Consortium members or only to those who newly joined or contributed new content since the last data platform description/report.

9. When a parallel project using part of the data included in the BOTTOMS-UP platform is approved by the Governing Board, an opt-in email is sent to all Consortium members. Potential opt-in authors have to declare their interest to join as co-authors during the same 28-day period during which also the Dataset Custodians have to respond to data requests. Their declaration should contain a specification why they

are interested in the particular paper project and what they could contribute and should be sent to the Governing Board.

10. The Governing Board can nominate up to two opt-in authors from the Governing Board members or additional researchers involved in the database management.

11. The Governing Board collects the information on proposed opt-in authors and will send them upon approval to the lead author of the publication for inclusion into the preliminary author list.

12. Generally, the lead authors of a parallel project decide when and how to involve the approved opt-in authors. However, they are requested to provide all potential co-authors adequate opportunity and time to contribute. This means that outcomes should be shared with the full author team at least at the following time steps:

    a) when there is a concrete outline of the methodological approach;

    b) when there are the complete results;

    c) at least three weeks before submission of a planned paper or presentation of the results on a conference.

13. If a person preliminarily listed as opt-in author, despite requests from the lead author, has not made any intellectual contribution to the paper by the time of submission, the lead author should remove the respective name after consultation with the Governing Board. In case of dispute over authorship, both lead authors and opt-in authors can appeal to the Governing Board.

14. The final list and order of the co-authors of a manuscript is suggested by the leading author based on their contribution in the manuscript. The final list and order of the authors should be accepted by the Governing board.

ARTICLE 8   RELATIONSHIP WITH OTHER EUROPEAN AND INTERNATIONAL EXPERIENCES

1. BOTTOMS-UP project and its deliverables aim at integrating existing projects and databases carried out at the European and global level. It will be a specific commitment of one member of the Governing Board to make and keep contacts with the coordinators of these projects and databases and to seek ways for fruitful interaction and integration.