

Mobilization and use of botanical data as decision-making tools in Gabon

Programme: BID

Project ID: BID-AF2020-194-USE

Project lead organization: Institut de Pharmacopée et de Médecine Traditionnelle

Project implementation period: 1/4/2021 - 31/3/2023

Report approved: 11/10/2021

Narrative Early Progress report

Executive Summary

I. Project achievement

i) Meeting with members of local institutions to launch the project activities; ii) Data mobilization. For herbarium specimen, 2000 herbarium sheets have been mounted and stored in the collection room of the Herbarium National du Gabon. Forest inventory data have been mobilized on 58 temporary plots from 0.1 to 0.16 ha; iii) Data categorization. About 221 endemic species and 106 threatened have been already selected for digitalization. For the type specimens, only 250 are stored in our herbarium among 1700 types recorded in the databases; iv) Specimens digitalization. In the project, 2000 specimens, including specimens used for categorization were planned for digitalization. Data categorization activity allowed to select 577 specimens that have already been sent to AGS company in charge of the digitalization; v) Workshop attendance. Two projects representative, Mboma Raymonde and Engone Obiang Nestor, attended three workshops organized by BID-AF2020 on between May and July.

II. Monitoring, evaluation and changes. Activities listed above are done by all herbarium staff except the digitalization process. Lists of each category were compiled according to taxa. Each staff is responsible to look for the selected species and put them in the box for digitalization. Each list is checked in order to record the missing specimen. No major change is done for the moment. Therefore, project planned to digitalize about 2000 specimens, including cosmetic, endemic, threatened and type specimens for digitalization. Up to date, about 577 specimens are physically present in Gabon National Herbarium. The rest of the specimens are found in other herbaria. Based on these facts, about 1423 specimens representing different families will be selected for digitalization.

Planning phase - User(s) consultation outcome(s)

Defining Data User Needs

Biodiversity data are largely used by researchers, students and economic operators. To describe new species, typical samples are in high demand. Gabon, for several years, recommends environmental and social impact studies before important project implementation. Information concerning the distribution of endemic, threatened or rare species is increasingly requested in the areas affected by such projects, hence the need to know and develop the mapping of these species. The general public, especially the non-scientists and the non academics, are much more interested in information concerning medicinal and cosmetic plants. There are therefore several types of demand defining the different needs. The categorization of data as planned in this project will help meet these different needs.

The policy or decision-making process that our project will be addressing will focused on

i) Production of simple deliverables to facilitate decision-making such as a massive production of distribution maps of rare species, ii) Intensification of advocacies with decision makers; iii) Strength actions to know and protect more biodiversity. The project is going, with the partners, MBG and ANPN, to contribute to the organization of a workshop on the evaluation of the conservation status of plant species in Gabon; iv) Develop an online checklist of medicinal and cosmetic plants to promote research on these plants. This point is in line with the objective of the World Health Organization which is to bring member states to take appropriate measures for the use of medicinal plants to meet basic health needs and to initiate African pharmaceutical development.

Defining Data Needs

The importance of a database is the centralization of information on biodiversity. The GBIF portal offers this advantage linked to the availability and free access to data. To answer scientific questions, the use of these data must follow the different themes. The occurrence data allow us to look at the geographic distribution of species. They can also be used for modeling ecological niches and assessing the conservation status of species. Sampling data, on the other hand, provides information on the abundances and densities of species. The checklist allows a quick check of the species in a given territory. No dataset is more useful than another, but it all depends on the use. This is the same information that is contained in most of the current databases.

On the other hand, the gap that exists in the GBIF portal is the non-categorization of data, that is to say that the latter are not classified according to their use, which often does not facilitate research or decision-making. Another user demand is for images of specimens. For several years, Gabon has recommended carrying out environmental impact studies before the start of projects activities. Researchers and technicians who assess the biodiversity of areas to be cleared need images of specimens to confirm their identifications in the field.

This project, which focuses on the initiation of a virtual herbarium and on the categorization of data according to their use, is a possible solution to these different concerns of data users. This work is done in collaboration with qualified technicians from the Gabon herbarium and a company specializing in archiving so that the data enters the appropriate and easily usable formats.

Planning Phase Outcomes

We do not wish to make any change to our project. Before to implement the project, we reviewed all activities in the activities start-up meeting. Following this meeting and the different exchanges with users, we have confirmed the initial objectives. The different evocated points are developed in the meeting report (uploaded).

Report on Activities

Activity progress summary

The project Mobilization and use of botanical data as decision-making tools in Gabon (BID-AF2020-194-USE) is about five main activities: data mobilization, categorization, specimens digitalization, the development of niche model and drafting of policy briefs.

The first activity consisted in organizing a debriefing meeting with the project members from local institutions to define the activities that were to begin in priority. Among these activities, there are: data mobilization, data categorization and specimens digitization. Other activities such as development of niches modelling and policy briefs will be done at the second stage of the project.

Progress on activities

Activity: Data mobilization

Description: 2000 specimens herbarium data and 58 sampling even have already been mobilized

Start Date - End Date: 7/5/2021 - 20/4/2023

Verification Sources: Excel table of the mounted and mobilized specimens - Table of plots and transects geographical coordinates

Activity: Meeting with the local project partners

Description: To launch activities of project

Start Date - End Date: 6/5/2021 - 6/5/2021

Verification Sources: Report of the meeting

Activity: Data digitalization

Description: 577 have been selected for digitalization

Start Date - End Date: 7/5/2021 - 20/4/2023

Verification Sources: Table for species categorization (endemic, threatened and types species)

Activity: Data categorization

Description: The categorization have been done about 221 endemic species - 106 threatened species and 250 types specimens

Start Date - End Date: 7/5/2021 - 20/4/2023

Verification Sources: Excel table on endemic, threatened species ant types specimens

Report on Deliverables

Deliverables progress summary

The presented deliverables come from the main project activities currently implemented.

1) Meeting to launch the activities of project

Project activities started with the organization of a meeting with the members of local institutions especially IRET and ANPN. The objective of this meeting was to launch the activities of the project focused on the following points: Data mobilization; Data digitalization; Data categorization; Niche modelling and Policy briefs for policy makers. Large gatherings being limited on the basis of compliance with barrier measures related to COVID 19, eight people were present. List of participants and the meeting report are the verification source of this event.

2) Data Mobilization

a. Data occurrences. It is planned to mobilize 10,000 occurrence data and publish them on the GBIF portal at the end of the project. Currently 2,000 new data have been already mobilized and are available in the Excel table format (uploaded). Those are the mounted specimens. The coordinate data will be checked and added during the next coming months.

b. Inventory data. The mobilization of inventory data should result in 75 sample data. In total, 58 samples (plots and transects) listing 4631 trees belonging to more than 100 species have already been mobilized. The source of verification for this deliverable is the Excel table (attached) available from IPHAMETRA and IRET, with the geographic coordinates of the different samples. These data fully digitized are not yet published on the GBIF portal or on our IPT as the others are waiting to complete inventory dataset.

3) Data categorization

The verification of the categorized species can be done by BRAHMS and TROPICOS database. This categorization was about

- 221 endemic species
- 106 threatened species
- 250 types specimens

4) Digitalization

In the 2000 specimens, including specimens used for categorization, 577 specimens have already been selected and sent to be scanned. But images are not still available in the database due to the difficulty to find the sheets in our herbarium. About 1700 types specimen from Gabon are recorded in BRAHMS database. After physical checking, unfortunately only 250 type specimens are stored in our herbarium. Most of them are found in other herbaria, especially in the Museum d'Histoire Naturelle de Paris (MNHN). Based on these facts, actions will be taken:

- about 1423 specimens representing different families will be selected for digitalization
- request of repatriation of type specimens in the digital format to MNHN.

Progress towards deliverables

Deliverables - Project planning phase

Digital herbarium

Description: Catalogue of the selected specimens to be digitalized including endemic, threatened and types specimens

% complete: 29%

Status update: Images are not available in our database for the moment but the number of the selected specimens to start digitalization is available at the herbarium

Sources of verification: Excel table of the selected specimens

Deliverables - Project data mobilization phase

Herbarium specimen data

Dataset type: Occurrences

Dataset scope: Mounting and insertion of herbarium specimens

Number of records: 2,000

Data holder: IPHAMETRA-Herbier National du Gabon

Data host institution: IPHAMETRA-Herbier National du Gabon

% complete: 20%

Status update: Not present on the GBIF webpage or in our IPT

DOI:

Expected date of publication: 2023-03-20

Inventory data

Dataset type: Sampling Event

Dataset scope: Synthesis of inventory data across 3 area of Gabon: Haut Ogooué, Ogooué Ivindo and Woleu Ntem

Number of records: 58

Data holder: IRET, IPHAMETRA

Data host institution: IPHAMETRA

% complete: 77%

Status update: Not available on the GBIF portal or Gabon IPT for the moment

DOI:

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Deliverables - Project evaluation phase

GBIF leads the Biodiversity Information for Development (BID), a programme funded by the European Union. The programme provides supplementary support for activities addressing the needs of regional researchers and policymakers through mobilization and use of biodiversity data.

