

Synthesis Report

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Workshop on Hosting and Publication of the Woody Vegetation Database of Huíla Province

CONCLUSIONS AND RECOMENDATIONS

Background: On October 21st 2020, the Department of Natural Sciences of ISCED-Huíla, together with the Associação Ecológica e Ambiental-Omuntiati, co-organized the **workshop on hosting and publication of the woody vegetation database of Huíla province**. The overarching goal was to discuss the hosting and publication format of the newly established database. The workshop was organized by Postdoctoral Fellow **Dr. Francisco Maiato Pedro Gonçalves** and supported by DAAD climapAfrica Programme (German Academic Exchange Service), as well as CIDE - Centro de Investigação e Desenvolvimento da Educação do ISCED-Huíla and CSN-Enterprise Group.

The database resulted from a SASSCAL funded project (task 154), which aimed to assess the vegetation of the region (Huíla province) and produce a regional vegetation database and vegetation maps. Due to lack of funding at crucial stages of the project, only field work was completed and a preliminary draft of the database was compiled. The database still needs to be managed and its content to be standardized in order to be published, so that it can be available for students, academics, researchers and other people interested in the knowledge of the flora of the region.

Participants: Participants participated remotely and in person at the workshop. This included Professors of the Department, Researchers from the Herbarium of Lubango, Students of the Master Course in Ecology and Management of Natural Resources and Guests.

The work programme was divided into two thematic sessions, followed by two plenaries of discussion and one round table at the end.

SESSION 1:

- Importance of databases in the management of plant diversity, **Marina Filomena Francisco Rafael**, MSc.
- Data base of the Zoological collection of the Museum of Ornithology and Mammalogy of ISCED - Huíla, **Abdelaziza Inocência Moyo**, MSc.

SESSION 2:

- Data base of woody vegetation of Huíla province: situation, limitations and constrains, **Silva Kapangue Aguiar Manuel**, Trainee student
- Perspectives for publications of the database of woody vegetation of Huíla province, **Francisco Maiato Pedro Gonçalves**, Ph.D

The opening session of the workshop was delivered by the General Director of ISCED-Huíla, **José Luís Mateus Alexandre**, Full Professor. In his intervention he made allusion on the research works carried out at ISCED-Huíla, highlighting those ones related with the inventory of biodiversity with specimens hosted in the Museum of Ornithology and Mammalogy and in the Herbarium of Lubango, even the ones which resulted from the various research projects of the Herbarium. The intervention of the General Director ended by calling attention to the importance of the databases in terms of repository of information of our national biodiversity and to the need to use this information to publish scientific results. So that, students and researchers in the fields of Life and Environmental Sciences and the broader national and international scientific community should be able to freely access the databases. Data on the distribution of species combined with other ecological aspects may constitute a valuable source of information for future research projects in the fields of Biodiversity



& Conservation, Ecology and Management of Natural Resources of this particular region of the country, actually subjected to many challenges due to human pressure, adding the unexpected effects of climate changes.

During the first session, participants discussed various aspects related to the databases as repositories of information related to biodiversity of specific regions of Angola. As such, two different types of databases for animal and plant collection were presented and their content discussed. Both databases aim to document the diversity of species existing in the two main collections of ISCED-Huíla, namely: the ornithological, mammals and plant collections. In the following, participants touched upon advantages and disadvantages or limitations of the two databases, and at the same time proposals were made to improve some technical aspects, which need to be addressed by technicians in computer sciences, as well as constraints due to lack of consensus among researchers, also at institutional level (e.g. specific issues related to constant updates in scientific nomenclature), are aspects that still make the publication and access to these data impossible.

The second session practically served to present the actual state of the database of woody vegetation of Huíla province. This included results from approximately five years of intensive field work in the entire territory of Huíla province. The project was funded by SASSCAL portfolio 1.0 as mentioned above and represents the first plot-based survey of the woodlands of Huíla province, aiming to assess the composition and diversity of tree species.

Despite severe financial constrains, the database was completed, but still contains some gaps which need to be revised. For instance, within SEOSAW project it was agreed that for multi-stemmed tree species, DBH measurement should consider each stem as individual tree. Thus, currently the database contains more individuals than its predecessor. These and other improvements in the Huíla vegetation database are aspects which need a joint decision in order to be finally published, and make it accessible to a wide audience and the scientific community in general.

During the round table, participants discussed the utilization and management aspects related to the databases. Moreover, it was highlighted that the database of Huíla



vegetation is about 90% completed, and lacks but still need more attention from botanists, due to constant updates in the botanical nomenclature of certain species and families. The workshop produced some recommendations resumed below:

From the point of view of organizing the database

- Taxonomic issues need to be dealt with more cautiously;
- The integration of more elements of the plant community to the database will serve to enrich the information of the database;

Management

- Improvement of records during field surveys, making sure that the technicians have a minimal knowledge about the botanical nomenclature;
- Need of a continuous update of the database, considering the dynamic of botanical nomenclature;
- Need of continuous capacity building of students and technicians involved with the databases in the Herbarium;
- Custody of data requires new approach, including aspects of joint decision-making;

Technicalities

- Improve the technological skills of technicians working with the databases, allowing them to update their knowledge, sometimes already related with data management platforms, databases management systems, host and data access, database technologies, and in this particular aspect it was recommended the inclusion of the Computer Section of ISCED-Huila and other **experts** in Computer engineering and Computer sciences;

Scientific perspective

- Continuous taxonomic update, including aspects related to plants ecology, phenology and also plants life cycle and life form;
- Standardization of information in the database, considering the good practices with international benchmarks;



- Incorporation of other aspects related to local sites, like: topography, geology, land use, already in our field sheets etc;

Main challenges

- Making the projects increasingly sustainable, so that the Herbarium can continue receiving new specimens of biodiversity;
- Incorporation of *OpenSource* technologies for rapid and easy access of information related to our databases;
- The need to make the working groups cohesive, so that they can continue even after the projects are finished, otherwise there will be always a need to incorporate new students with new training requirements;

Finally, it was clear that the databases should contain **relevant information** for different audiences as other people outside the academia could be interested in the information related our flora. The overarching goal is to make the database as **informative** as possible with georeferenced information for instance, in order to be published on any of the existing platforms, like: **GIVD** or **sPLOT**. It is common sense that there is a need for a general public version of the database, both with **online** or **offline** access. In the other hand, it is clear that the database should also be available in t **Excel** or **Access** formats, including fields that may respond the necessities of past and actual projects, so that the field protocols can be adjusted to respond effectively the different projects.



Participants of the workshop

- **José Luís Mateus Alexandre**, General Director of ISCED-Huíla;
- **António Valter Chisingui**, Deputy General Director for Scientific Area of ISCED-Huíla;
- **Francisco Maiato Pedro Gonçalves**, Professor and Researcher at the Herbarium of Lubango;
- **Helder Alicerces Bahu**, Professor and Coordinator of CIDE, ISCED-Huíla;
- **Jorge Gonçalves Mayer**, Professor and Coordinator of the Master Course of Sciences Teaching of ISCED-Huíla;
- **Evanilton Pires**, Professor and Coordinator of Environmental Engineering Course at ISPT;
- **Vladi Sénio Pereira**, Professor and Head of Department of Natural Sciences of ISCED-Huíla;
- **Fernanda Maria Oliveira Pires Lages**, Coordinator of the Herbarium of Lubango;
- **Joaquim Hangalo**, Computer Engineer and Mentor of Startups;
- **José João Tchamba**, Professor and Researcher at the Herbarium of Lubango;
- **Abdelaziza Inocência Moyo**, Professor and Researcher at the Herbarium of Lubango;
- **Marina Filomena Francisco Rafael**, Professor of ISCED-Huíla;
- **João Hequer**, Professor and Researcher of CIDE, ISCED-Huíla;
- **Hervé Pedro Vela**, Professor and Researcher of CIDE, ISCED-Huíla;
- **Isabel de Sá Galamba**, Professor of ISCED-Huíla;
- **José da Silva**, Professor of ISCED-Huíla;
- **Abel Mavuqui Bala**, Researcher of CIDE, ISCED-Huíla;
- **Irma Gabriel**, Researcher of CIDE, ISCED-Huíla;
- **Bernardino do Rosário Bambi**, Researcher of ISCED-Huíla;



- **Abel Cavinguilo Ezequiel Cahali**, Student of the Master Course in Ecology and Management of Natural Resources, ISCED-Huíla;
- **Domingos Fortunato Félix Páscoal da Silva**, Student of the Master Course in Ecology and Management of Natural Resources, ISCED-Huíla;
- **Jucemara Cerejo**, Student of the Master Course in Ecology and Management of Natural Resources, ISCED-Huíla;
- **Silva Kapangue Aguiar Manuel**, Student of Biology and Trainee at the Herbarium of Lubango;
- **Ruth Cristovão Francisco**, Student of Biology and Trainee at the Herbarium of Lubango;
- **Grece Nacale**, Student of Biology and Trainee at the Herbarium of Lubango;
- **Eduardo Kivete Lutondo**, Researcher of Fundação Kissama;
- **Bartolomeu Paulo Capila Alicerces**, Computer Engineer at ISPT;
- **Tomás Francisco Lucas Selombo**, Professor and Head of Educational Informatics Section, ISCED-Huíla;
- **José Camôngua Luís**;
- **Joaquim Lourenço Txifunga**, Professor and Researcher at ESPN;

