



BID-AF2015-0044-SMA

Capacity building workshop on Ecological Niches Modelling

Abomey-Calavi, from March 02th to 03th 2017



REPORT

Introduction

The project untitled "Gathering of biodiversity data on bird species for their sustainable management in Benin" aims at contributing to the conservation of bird species in Benin through the enhancement of data availability on these species. It is registered as BID FA2015-0044-SMA and is funded by the European Union. Among the main planned activities there is a capacity building workshop on ecological niches modelling.

This report summarized the main workshop activities of capacity building workshop on ecological niches modelling . The workshop aims increase the project partners capacity on biodiversity data management to decision-making in Benin. A total of nineteen participants attended this workshop with a high representation of students of the Faculty of Agricultural Sciences of the University of Abomey-Calavi.

1. Opening Ceremony

Two speeches were delivered during the opening ceremony capacity building workshop on ecological niches modelling. The first speech is a welcome speech and was done by the small BID project Coordinator. Mr Charles GANGNIBO has welcomed the workshop participants and presented the main objectives of the project untitled "Gathering of biodiversity data on bird species for their sustainable management in Benin". He listed the main deliverables of the project among the following capacity building workshop. Furthermore, he pointed out the general objective of the workshop that is to reinforce the capacity of the project partners in biodiversity data analysis for decision-making. He also mentioned the genesis of the project and all activities already completed in the framework of the project. The BID-AF2015-0044-SMA coordinator acknowledged the European Union for the financial support and also GBIF for technical support trough training on biodiversity data mobilization.



BID-AF2015-0044-SMA Coordinator explaining the objectives of the workshop

The second speech was the one of Benin Node Manager. In his speech, Professor Jean Cossi Ganglo expressed his happiness seeing the implementing of such as an important activity of the individual BID project. He highlighted the importance of biodiversity data mobilization for decision-making in plants and animals species sustainable conservation. According to Prof. Ganglo, about 240,000 occurrence data have already been published by GBIF-Benin on GBIF website. A better use of this data will contribute to a better management of the national biodiversity. He has also mentioned that the full support of Benin Node of GBIF will be total in such as initiatives. This speech is ended by inviting all the participants to work hard to achieve the goals of the workshop.



The Node Manager of GBIF-Benin opening the workshop

2. Training on ecological niches modelling

2.1 Introduction on ecological niches modelling

The first presentation of the training untitled " Introduction on ecological niches modelling" was given by Mr KAKPO Sunday. He defined the niche as all physical, chemical and biological factors that a specie needs to survive, stay healthy and reproduce. From the definition of niche he highlighted the environmental factors and the biological factors that modify the niche of a given specie. The link between niches modelling and species conservation was established. Several models were briefly described: species distribution model, ecological niches model, habitat quality model and climatic model. The main steps to create a model were described. Mr KAKPO ended his presentation with the limits of ecological niches modelling. At the end of the presentation, questions from participants have been answered by the trainer.

2.2 Presentation on data downloading and data cleaning

The presentation on data downloading and data cleaning was given by Mr KAKPO who gave the first one. Step by step the trainer showed how to download data on GBIF website and to clean the data downloaded. The presentation was based on practical demonstration. So, each participant of the workshop has downloaded occurrence data on a given specie on the GBIF website and tried to clean them. GoogleRefine and QGIS were mainly used for data cleaning. From this practical demonstration, a spreadsheet has been prepared for the next step of the training.

2.3 Presentation on environmental layers formatting

Mr YEHOUEYOU TESSI Donald has given the presentation on the environmental layers formatting. This presentation is divided in two parts: theoretical information and practical demonstration.

The theoretical information is based on some reminders on modelling and environmental layers, types and sources of environmental layers and environmental layers preparation. He highlighted two types of data for model input: species distribution data and environmental data (temperature, precipitations, topography, type of soil, land cover The environmental data common types have been described. Special attention has been taken on distribution models established by MaxEnt. Some sources of environmental data were listed: <http://www.worldclim.org/> for climatic data (current, future and past data), <http://www.isric.org/> for soil data in the world, <http://glcf.umd.edu/index.shtml> for land cover etc. Furthermore the main steps for environmental data preparation have been explained and the needed software (e.g. QGIS) mentioned.

During the practical step, some exercises have been done by participants. Then, environmental data have been downloaded and prepared.



Participants during practical phase

At the end of this stage, a sheet of data was prepared to be run in MaxEnt in the next stage. Environmental layers have also been cut and converted in appropriate type of file that can be run with MaxEnt.

2.4 Modelling with MaxEnt

The step of modelling with MaxEnt is exclusively practical. The main trainer during the ecological niche modelling is Mr GBETOHO Jaures. Through exercises participants have learned how to load environmental layers and species occurrences in Maxent.



Participants following the trainer's demonstration on modelling

Demonstrations were also focused on performing a run in MaxEnt. The model settings and the viewing of the results were also a matter of interest for the participants.

A last part of this training was the presentation of the ecological niches modelling results.

3. Closing ceremony

Before closing the capacity building workshop on ecological niches modelling, a short workshop assessment was done. All the participants were satisfied by the knowledge and the abilities gained from the training. On the behalf of the participants, Miss AYEKO Denise expressed her happiness by attending the training. She appreciated the fact that the training was 90% practical and expressed the acknowledgements of all the participants to the trainers

before promising to use the knowledge gained for the sustainable management of threatened species.

The workshop was closed by the representative of the Node Manager of GBIF-Benin. He expressed his gratitude to the participants and wished a good use of the knowledge earned during the training to support decision-making in the area of biodiversity in Benin. The representative of Prof. GANGLO thanked all the partners of BID projects especially European Union and GBIF.

Conclusion

The objectives of the capacity building workshop on ecological niches modelling hold in the framework of the implementing of the BID-AF2015-0044-SMA project were achieved. The capacity of the partners of the project untitled "Gathering of biodiversity data on bird species for their sustainable management in Benin" was reinforced. All the participants are satisfied by the knowledge and practical skills gained during the training. The implementing of this activity will contribute to the use of published data to support decision-making for biodiversity conservation in Benin.

Appendices

Appendix 1: Program of the workshop

Time	Activities	Responsible
	Day 1 : Thursday, march 02, 2017	
08:30–09:00	Welcome and installation of participants	Mr GANGNIBO Charles
09:00–09:30	Opening + Photo of participants	Prof. GANGLO Jean
09:30–09:45	Presentation of participants	Mr GANGNIBO Charles
09:45–10:00	Workshop goals presentation	Mr GANGNIBO Charles
10:00–10:30	Introduction on ecological niches modelling	Mr KAKPO Sunday
10:30–12:00	Data downloading and data cleaning	Mr KAKPO Sunday
12:00–13:00	Lunch break	
13:00–16:00	Environmental layers formatting	Mr TESSI Donald
	Day 2 : Friday, march 03, 2017	
09:00–10:00	Environmental layers formatting (following)	Mr TESSI Donald
10:00–13:00	Modelling with MaxEnt	Mr GBETOHO Jaures
13:00–14:00	Lunch break	
14:00–15:30	Presentation of ecological niches modelling with MaxEnt	Mr GBETOHO Jaures
15:30–16:00	Closing	Prof. GANGLO Jean

Appendix 2: List of participants

N°	Names	Structure	Origin	Address	
				Phone	E-mail
1	AIKON Gorgias	LSF/FSA	Cotonou	61450451	gorgiaspremier@yahoo.fr
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19	YEHOUENOU TESSI Donald	LSF/FSA	Cotonou	97696308	tdonal3@yahoo.fr