

Integrating ecosystem and biodiversity data to assist national development planning

Programme:BID

Project ID: BID-AF2020-029-USE

Project lead organization:Conservation Alliance International

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

Report approved: 20/6/2023

Final Narrative Report

Executive Summary

Project Implementation:

The project through engagements was able to identify stakeholder needs for biodiversity information and developed strategies to address those needs. Some of the strategies employed included the development of stakeholder capacity on biodiversity data mobilization, supporting stakeholders to share their data through publication on GBIF IPT, engagement of policy makers to identify entry points for mainstreaming information products that will be developed under the project, addressing data gap needs in policies and how these can contribute to achieving both national and global biodiversity goals and targets.

Key Achievements:

- Trained 30 number of stakeholders in Biodiversity Data Mobilization and Management
- Establishment of a community of practice on biodiversity mobilization and management
- Mobilization of 34215 records of biodiversity data of different taxa
- Increasing access to biodiversity data through the publication of 9 datasets
- Development of three information products (Distribution maps for Invasive Alien Species, Herpetofauna and Crop Wild Relatives in Ghana)
- Identification of potential OECMs and KBAs outside Protected Areas in Ghana.
- identified entry points for the mainstreaming of the information products developed as contributions to Ghana's achievement of the Global Biodiversity Framework Goals and Targets particularly Goal 2 and Targets 3, 5,6,9 and 21

Impact

- The information products developed under the project particularly the distribution map for Invasive Alien Species has been adopted by the Environmental Protection Agency to inform decisions regarding the management of IAS in Ghana. This information product is being used to update targets within the NBSAP on dealing with IAS in Ghana.
- Through the project, potential KBAs and OECMs have been identified and are being fed into the National Biodiversity Policy and updating Ghana's NBSAP and also by the local district planning.

Context and Approach for final project evaluation: The project was evaluated based on the project objectives, achievement of deliverables, assessment of stakeholders capacity before and after the project, number of datasets mobilized and published, number of information products developed, general management of the project both technical and financial. A survey was also used to collate responses from partners and key stakeholders of the project. The main conclusions drawn from the evaluation were that the project was generally able to achieve its objectives and deliverables. It increased the knowledge and capacity of 30 number of stakeholders in biodiversity data mobilization and management, provided information to support mainstreaming of biodiversity data into policy and management of critical ecosystems particularly when it comes to the management of Invasive Alien Species. Provided a basis for expanding government initiatives such as the Planting for Food and jobs by incorporating the production of Crop Wild Relatives into the policy strategy as well as enhancing biodiversity conservation particularly in off-reserve areas through the identification of potential KBAs and OECMs through the CREMAs in Ghana.

Key lessons:

-The involvement of policy makers in identifying biodiversity data gaps and needs enhances the uptake of interventions that can enhance the achievement of National Policy objectives and management of biodiversity
-Although KBAs and OECMs are currently not recognized as protected areas particularly in off-reserve areas, the existence of baseline information will serve as a basis for their adoption into policy for the achievement of both national and global biodiversity targets as is being experienced with the incorporation of biodiversity data mobilized into Ghana's National Biodiversity Policy and the update of its NBSAPs.
-Engagement and Capacity building among stakeholders will help unearth biodiversity information that will otherwise have not been accessible

Post-Project Activities:

-Development and publishing of data papers based on the biodiversity data mobilized. The data papers could not be published within the project timelines because the acceptance and review timelines of journals contacted did not align with project timelines. These papers are envisaged to be published by Dec. 2023.

-The project will also hold a stakeholder forum to share the information products that have been developed to enhance learning, mainstreaming into policy such as the NBSAP and the Biodiversity Policy which have currently been drafted and submitted to Cabinet for approval.

Progress against milestones

Has your project completed all planned activities?: Yes

Has your project produced all deliverables: Yes

Report on Activities

Summary of the implementation of the project activities

All project activities listed above have been completed and update from the midterm report and the final report attest to that. Inception meeting led to the buy in and commitment from stakeholders for the successful project delivery. Stakeholders consultations facilitated access to biodiversity data records for mobilization, cleaning and publishing which exceeded the project target.

Through the capacity building exercises, two organizations (EPA and the Forestry Commission) have expressed interest to be publishers on the GBIF IPT with the Forestry Commission registered and awaiting endorsement. Both institutions have submitted data records that have to be published as post project activity as their endorsements are completed.

Completed activities

Activity: Pre-implementation planning meeting

Description: Involved the core project implementation team to draw up the project implementation plan, M&E Plan, plan formats and functionality of the biodiversity information products and protocols for documentation for continuous learning will be developed.

Start Date - End Date: 1/6/2021 - 1/6/2021

Verification Sources:

https://assets.ctfassets.net/uo17ejk9rkwj/3ZQRM5VUQLTBxv4KszGGgO/8abe0bec967cf871dc0cb5a3af136983/BID-AF2020-029-USE_Public_Early_Progress_Narrative_Report.pdf

Activity: Project Inception Meeting

Description: To introduce the project to key stakeholders, including its objectives, implementation plan, and the role

of stakeholders (i.e data holders, data users, policy makers) in project implementation and to validate data mobilization plan and workflows

Start Date - End Date: 26/7/2021 - 26/7/2021

Verification Sources: <https://conservealliance.org/conservation-alliance-and-partners-launch-bid-af2020-029-use-project/>

https://assets.ctfassets.net/uo17ejk9rkwj/3ZQRM5VUQLTBxv4KszGGgO/8abe0bec967cf871dc0cb5a3af136983/BID-AF2020-029-USE_Public_Early_Progress_Narrative_Report.pdf

Activity: Stakeholder consultations

Description: Purposely to define and conduct user needs and data needs assessments and also form technical team to mobilize and develop information products with relevant end users.

Start Date - End Date: 1/6/2021 - 28/3/2023

Verification Sources:

https://assets.ctfassets.net/uo17ejk9rkwj/3ZQRM5VUQLTBxv4KszGGgO/8abe0bec967cf871dc0cb5a3af136983/BID-AF2020-029-USE_Public_Early_Progress_Narrative_Report.pdf

Final Report

https://assets.ctfassets.net/uo17ejk9rkwj/2pKTchiaGwok7E3719Y2mW/29efe9a69bf9885388516d6389789e42/BID-AF2020-029-USE_Public_Midterm_Narrative_Report.pdf

Activity: Data Mobilization

Description: All datasets on occurrence, taxon and event records have been mobilized and published

Start Date - End Date: 8/7/2021 - 1/6/2022

Verification Sources:

https://assets.ctfassets.net/uo17ejk9rkwj/2pKTchiaGwok7E3719Y2mW/29efe9a69bf9885388516d6389789e42/BID-AF2020-029-USE_Public_Midterm_Narrative_Report.pdf

<https://www.gbif.org/project/BID-AF2020-029-USE/integrating-ecosystem-and-biodiversity-data-to-assist-national-development-planning#datasets>

Report on Deliverables

Deliverables - Summary

The project through the User needs assessment was able to identify the type of information products that will be relevant to stakeholders particularly for uptake into policy and mainstreaming across decisions regarding biodiversity conservation in Ghana. The project was able to develop and disseminate three information products in the form of maps showing distribution of Invasive and Alien Species (IAS) in Ghana, distribution of Herpetofauna and distribution of Crop Wild Relatives. These Invasive and Alien Species information products have been adopted by the Environmental Protection Agency as part of their identification of IAS areas in the country in their NBSAP and it is informing measures developed to combat and address challenges posed by IAS in Ghana.

The Herpetofauna information product will feed into the updates being done on Ghana's National Biodiversity Policy as well as inform conservation measures being developed to align with the current adoption of the Global Biodiversity Framework. The Crop Wild Relatives information products will be used to engage both the Wildlife Division of the Forestry Commission and the Ministry of Food and Agriculture for mainstreaming into policy decisions such as the current planting for Food and Jobs policy which seeks to engage youth in farming to support and sustain the food production capacity of the country.

Delayed deliverables:

The project was not able to carry out the National Redlist Assessment the reason for the delay was due to challenges in accessing the needed technical capacity and data to fit all the requirements of the Redlist Assessment. This deliverable will not be produced as a post-project activity. The project will however explore in the future the needed capacity both technical and financial resources needed to mobilize the requisite data to carry out the National Redlist Assessment. This will build on the data that has already been mobilized under the current project. Unfortunately we cannot provide a timeline for when this deliverable can be achieved. GBIF will however be updated once this deliverable has been accomplished.

Deliverables produced by the project

Dataset deliverables

Other deliverables

Deliverables - Project planning phase

Deliverables - Project data mobilization phase

Checklist of Flora Datasets

Dataset type: Checklist

Dataset scope: National dataset on flora checklists obtained from survey and occurrence records across Community Resource Management Areas (CREMAs) in Ghana from 2000 to 2021.

Number of records: 2,154

Data holder: Forestry Commission/ A Rocha Ghana/Conservation Alliance

Data host institution: SANBI

% complete: 100%

Status update: Datasets published on GBIF IPT

DOI: <https://doi.org/10.15468/wzpsw4>, <https://doi.org/10.15468/wu67bp>, <https://doi.org/10.15468/qe2rms>, <https://doi.org/10.15468/zzqz9h>

Expected date of publication:

Flora Occurrence Datasets

Dataset type: Occurrences

Dataset scope: National occurrence dataset on flora records across Community Resource Management Areas (CREMAs) in Ghana from 2000 to 2021.

Number of records: 19,110

Data holder: Forestry Commission/Conservation Alliance International

Data host institution: SANBI

% complete: 100%

Status update: Datasets published on GBIF IPT.

DOI: <https://doi.org/10.15468/sw6yw6>, <https://doi.org/10.15468/uzbb7r>

Expected date of publication:

Fauna Occurrence Datasets

Dataset type: Occurrences

Dataset scope: National occurrence datasets on fauna from 2006 to 2021. Species include mammals, birds, heptofauna and insects.

Number of records: 4,698

Data holder: Forestry Commission/Conservation Alliance International

Data host institution: SANBI

% complete: 100%

Status update: Datasets published on GBIF IPT

DOI: <https://doi.org/10.15468/tuaw26>, <https://doi.org/10.15468/3t9mtt>, <https://doi.org/10.15468/bdgbm9>, <https://doi.org/10.15468/k74k8j>

Expected date of publication:

Invasive Species Occurrence Dataset

Dataset type: Occurrences

Dataset scope: National occurrence dataset on invasive species records across Community Resource Management Areas (CREMAs) in Ghana from 2000 to 2021.

Number of records: 2,515
Data holder: Forestry Commission/Conservation Alliance International
Data host institution: SANBI
% complete: 100%
Status update: Dataset published on GBIF IPT
DOI: DOI: <https://doi.org/10.15468/w87ty5>
Expected date of publication:

Crop Wild Relatives (CWRs) Occurrence Datasets

Dataset type: Occurrences
Dataset scope: National occurrence dataset on flora records across Community Resource Management Areas (CREMAs) in Ghana from 2000 to 202
Number of records: 4,006
Data holder: CSIR-Plant Genetics Resources Research Institute
Data host institution: SANBI
% complete: 100%
Status update: Datasets published on GBIF IPT.
DOI: <https://doi.org/10.15468/pbn67c>, <https://doi.org/10.15468/zt6gk4>
Expected date of publication:

Deliverables - Project evaluation phase

Information product 1: Distribution Maps of Invasive Species (IS)

Description: Occurrence records of two most important invasive species (IS) in the high forest zone of Ghana (*Chromolaena odorata* and *Brossounetia papyrifera*) were overlaid on an ecosystem and threat maps of Ghana using GIS to get their distribution map and integrated into the National Invasive Species Strategic Plan (NISSAP). This information will be used by the Environmental Protection Agency [(EPA)-the statutory body responsible for invasive species management in Ghana] to prioritize areas of conservation concern and adopt local context-based approach for IS management within each ecosystem type.

% complete: 100%

Status update: : Distribution map of IS developed using relevant occurrence records of IS dataset published on GBIF (DOI: <https://doi.org/10.15468/w87ty5>) and integrated successfully into the National Invasive Species Strategic Plan (NISSAP).

Sources of verification: DOI:<https://doi.org/10.15468/w87ty5>, Final Report, Final Report, IAS final and Invasive species

Information product 2: Distribution Maps of Crop Wild Relatives (CWRs)

Description: Distribution maps showing the extent of occurrence of CWRs within the various ecosystem types of Ghana will be developed and integrated into the Annual State of Biodiversity Reporting (SBR) of EPA. The CWRs have gained traction among policy makers in Ghana due to their potential landrace characteristics (drought, pest, heat, climate change resistance etc.) of their local cultivars. The EPA, the Ministry of Food and Agriculture (MoFA) and the Ministry of Environment, Science, Technology and Innovation (MESTI) will use this information to prioritize species and areas for conservation and to develop integrated and conservation strategies to ensure that genetic diversity of CWRs is protected for intergenerational benefit.

% complete: 100%

Status update: Distribution maps showing the extent of occurrence of CWRs within the various ecosystem types of Ghana were developed using the CWRs datasets published on GBIF (DOIs:<https://doi.org/10.15468/pbn67c> & <https://doi.org/10.15468/zt6gk4>) and integrated successfully into the National Biodiversity Policy and local district development plan instead. The SBR is not ready yet for this year.

Sources of verification: DOIs:<https://doi.org/10.15468/pbn67c> & <https://doi.org/10.15468/zt6gk4>, Final Report, CWRs final

Information product 3: Key Biodiversity Area (KBA) Assessment in Other Effective Area-based Conservation Measures (OECMs)

Description: This is to identify areas within the OECMs that are potential KBAs. These will be based on IUCN KBA

assessment criteria with threatened (Critically Endangered, Vulnerable and Endangered) species in the OECMs as trigger species. This information will be used by MESTI to update and expand list of KBAs in Ghana and use them in Post 2020 Global Biodiversity Frameworks.

% complete: 100%

Status update: OECM database and maps developed and integrated into local district development plans and NBP. The DOIs used to identify trigger species for development of the database inserted in the relevant sources of verification or list the documents section.

Sources of verification: <https://doi.org/10.15468/tuaw26>, <https://doi.org/10.15468/3t9mtt>, <https://doi.org/10.15468/bdgbm9>, <https://doi.org/10.15468/k74k8j>, <https://doi.org/10.15468/wzpsw4>, <https://doi.org/10.15468/zzqz9h>, <https://doi.org/10.15468/qe2rms>, <https://doi.org/10.15468/wzpsw4>, <https://doi.org/10.15468/wu67bp>, <https://doi.org/10.15468/sw6yw6>, <https://doi.org/10.15468/uzbb7r>, <https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE/Final%20Report/Map%20of%20OECMs> Potential OECM database Final Report, [https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE?preview=KBAproposal_Atewa+OECM_Ghana_WORKING+LIST+ADDITIONAL+SPECIES+\(1\).xlsx](https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE?preview=KBAproposal_Atewa+OECM_Ghana_WORKING+LIST+ADDITIONAL+SPECIES+(1).xlsx)

Information product 4: Distribution maps of Endemic Heptofauna Species in key OECMs

Description: Distribution maps of three endemic species of frog namely *Hyperolius baumannii*, *Hyperolius fusciventris* and *Hyperolius sylvaticus* was developed and integrated into NBP

% complete: 100%

Status update: Distribution map developed using Heptofauna dataset published on GBIF (DOI: <https://doi.org/10.15468/k74k8>) and integrated into NBP.

Sources of verification: DOI: <https://doi.org/10.15468/k74k8j>, Final Report, Heptofauna final

Events

Strengthening BIMF

Dates: 2022-07-12 - 2022-07-13

Organizing institution: Conservation Alliance International

Country: Ghana

Number of participants: 40

Comments: The workshop will bring together data holders and end-users to discuss pathways towards successful completion of the BID-AF2020-029-USE project funded by JRS Biodiversity Foundation through GBIF Biodiversity Information Development (BID) programme. The goal of the workshop is to:

Complete KBA training using Red List of ecosystems

Comment and assist in the National Invasive Species Plan using biodiversity assessments to highlight key ecosystem areas for action.

Develop mainstreaming pathways for the Red List of ecosystems using the Mainstreaming Biodiversity Priorities guidelines

Make inputs in Draft National Biodiversity Policy.

Website or sources of verification: <https://www.gbif.org/event/92b748-14e3-47d7-9dcc-3b6300d/biodiversity-information-management-forum-ghana>, Media Brief 1, <https://www.dailyagricnews.com/biodiversity-data-key-to-socioeconomic-development/> <https://www.modernghana.com/news/1223901/biodiversi>

Events

Final Technical Meeting (Stakeholder Validation Workshop)

Dates: 2023-03-23 - 2023-03-23

Organizing institution: Conservation Alliance International

Country: Ghana

Number of participants: 32

Comments: Final Technical Group Meeting for Preparation of Project Closure of the BID project by validating information products developed by the project..

Website or sources of verification: <https://www.gbif.org/event/244a5c-bd61-41df-be08-fc00298/final-technical->

meeting, <https://www.dailyagricnews.com/jrs-biodiversity-foundation-and-gbif-lauded-for-their-biodiversity-data-science-policy-efforts-in-ghana/> <https://www.modernghana.com/news/1223>

Events

Project Closure Workshop

Dates: 2023-03-28 - 2023-03-28

Organizing institution: Conservation Alliance International

Country: Ghana

Number of participants: 45

Comments: Project closure focusing on project lesson learning that includes highlighting project lessons, achievements, challenges, sustainability and post project activities.

Website or sources of verification: <https://www.gbif.org/event/62e1c8-d92c-4d56-a6af-7b4e19e/project-closure-workshop>, Final Report, <https://www.modernghana.com/news/1223514/jrs-biodiversity-foundation-and-gbif-lauded-for.html>

Communications and visibility

The results of the project will be shared with stakeholders through the development and dissemination of infographics and other the information products that have been developed. Stakeholder engagement meeting will be held with Policy makers at their offices to discuss project results and outcomes and how these are either being mainstreamed into decision making or can be mainstreamed into decision making. The information product on CREMAs will also be shared through community meetings to enhance community conservation efforts of the critical ecosystems they live around. Additionally, all project events were publicized on the project website and link shared with stakeholders during meeting invitation to encourage visitations to the website. Below are examples of press releases, links to organized project events and publications;

<https://www.gbif.org/event/92b748-14e3-47d7-9dcc-3b6300d/biodiversity-information-management-forum-ghana>

<https://www.gbif.org/event/244a5c-bd61-41df-be08-fc00298/final-technical-meeting>

<https://www.gbif.org/event/62e1c8-d92c-4d56-a6af-7b4e19e/project-closure-workshop>

<https://www.dailyagricnews.com/jrs-biodiversity-foundation-and-gbif-lauded-for-their-biodiversity-data-science-policy-efforts-in-ghana/>

<https://www.modernghana.com/news/1223514/jrs-biodiversity-foundation-and-gbif-lauded-for.html>

<https://www.gardjagh.org/jrs-biodiversity-foundation-and-gbif-lauded-for-their-biodiversity-data-science-policy-efforts-in-ghana/>

<https://www.dailyagricnews.com/biodiversity-data-key-to-socioeconomic-development/>

<https://www.modernghana.com/news/1223901/biodiversity-data-key-to-socioeconomic-developmen.html>

<https://www.gardjagh.org/biodiversity-data-key-to-socioeconomic-development/>

Monitoring and evaluation

Final Evaluation

Evaluation of project activities, outputs/ deliverables

Project implementation efficiency and effectiveness: The project implementation and efficiency were assessed through feedback from stakeholders collected through a survey exercise. The assessment also factored in stakeholder satisfaction with the project implementation particularly trainings and information products, the capacity of stakeholders in term knowledge and skills in biodiversity data mobilization and management before and after the project, delivery of project outputs, administration and management of funds.

Project relevance to partners and stakeholders: Stakeholders particularly policy makers embraced the project and provided it the necessary support in terms of identifying biodiversity data needs that can bridge the gap in accessing biodiversity data for both national and global reporting of biodiversity commitments made by the country. The information product on IAS has been adopted by the Environmental Protection Energy for the identification and

management of areas challenged with invasive alien species.

Project strength and weakness: the project strength was the exposure of implementing staff to previous biodiversity data mobilization and management. This made it possible for the project to publish more data mobilized from key stakeholders within the natural resources management space in Ghana.

-The establishment of the community of practice via BIMF facilitated the enhancement of skills in biodiversity data mobilization and publishing beyond the project lifespan. The project weakness was the limited skills by project implementation team in the use of geographic information system (GIS).

The project also received support from the GBIF Support associate in terms of delivery of trainings and review of reports.

The project built on the existing community of practice within the existing BIMF. The information products development also built on existing datasets on crop wildlife relatives as well as the Ecosystem types map of Ghana.

The project has been a great learning experience for the project implementers, the community of practice and policy makers who have found the information products useful enough for adoption and mainstreaming into management of critical ecosystems.

Best Practices and Lessons learned

-development of a workplan, M&E framework and a communication plans contribute to the successful implementation of projects.

- keep regular communication with partners on project implementation and progress.

Lessons learnt:

-The involvement of policy makers in identifying biodiversity data gaps and needs enhances the uptake of interventions that can enhance the achievement of National Policy objectives and management of biodiversity

-Although KBAs and OECMs are currently not recognized as protected areas particularly in off-reserve areas, the existence of baseline information will serve as a basis for their adoption into policy for the achievement of both national and global biodiversity targets as is being experienced with the incorporation of biodiversity data mobilized into Ghana's National Biodiversity Policy and the update of its NBSAPs.

-Engagement and Capacity building among stakeholders will help unearth biodiversity information that will otherwise have not been accessible

Post Project activities

Post-Project Activities:

-Development and publishing of data papers based on the biodiversity data mobilized. The data papers could not be published within the project timelines because the acceptance and review timelines of journals contacted did not align with project timelines. These papers are envisaged to be published by December, 2023.

-Stakeholder engagement particularly of CREMAs to share information product developed.

Sustainability

Sustainability Plans

Training: The sustainability of the project is hinged on the community of practice found within the Biodiversity Information Management Forum (BIMF) as well as institutions that received training during the project implementation. The number of members of the community of practice has increased with the project and the capacities of both the old and new community of practice. These stakeholders will mainstream the skills gained under the project by training other members of the institutions and other stakeholders who have an interest in biodiversity mobilization and particularly its use in decision making.

OECM Database: The OECM database that has been developed will serve as a basis for further engagement with state institutions such as the Forestry Commission whose mandate is to establish and manage protected to validate these identified OECMS and support their management. The database will also be used by policy makers in the update of biodiversity information in the development of policy implementation plans.

Data published and development of information products: the data published has enhanced the availability of biodiversity data in Ghana, it will also enhance their availability for decision making and policy mainstreaming as

demonstrated in the development of the information products and their mainstreaming into decision making such as the NBSAP. The information products that have been developed under the project have provided a basis for mainstreaming into decision making. For instance, the Invasive Alien Species (IAS) distribution map has been adopted by the Environmental Protection Agency for the management of invasive species in the country. This mainstreaming is also being applied with the other information products developed. Strengthening BIMF: the engagement of the BIMF in the training and other project activities has enhanced their capacity and skills as a community of practice.

Impact of COVID-19 pandemic on project implementation

The emergence of the Delta and Omicron variants of the corona virus constituted the greatest challenges to the project. Some institutions had put visitor embargo to their premises which delayed the data mobilization exercises by affecting travel to those institutions. Additionally, the quality of data received and also mobilized fell very short of the expected quality. Therefore, more time has been spent on the data cleaning exercise than usual to make them fit for use and publication. Additionally, some policies and plans were not readily available for information product integration partly due to delays from some end users and other legislative procedures.

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.

