

# 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:** 29/8/2022

## Narrative Midterm report

### Executive Summary

This narrative reporting is based on the plans outlined in the approved proposal and the expected deliverables. The main items we are reporting on are:

- 1.Data Mobilization;
2. Capacity building; and
3. Strengthening of Biodiversity Information Management Forum

The main achievements of the project include

- 32,274 data records have been mobilized, cleaned and published on GBIF. This is 4,274 records more than the proposed number of records.
- Capacity Building programs have been successfully organized for project partners and other institutions within the BIMF. More than 10 institutions attended the training workshops which focused on Introduction to Biodiversity Data Management, Darwin Core formatting, Digitization, Data Quality Checks, Data Cleaning, Geo-referencing, Meta Data Writing, and Data Publishing using the IPT. Three of these institutions have developed interest to register as GBIF publishers.

The project was monitored and evaluated during planning meetings with partners and other stakeholders. These meetings looked at the project implementation and reviewed how data holders are contributing to the data mobilization exercises and the expected uptake of the information products to be developed . The M&E gave the project insights into changes to be made on project implementation and delivery to satisfy user needs.

Based on the M&E and associated interactions with data users, the project proposes the following changes. Crop Wild Relative and Invasive species distribution maps, KBA and Redlist assessment are introduced as new products preferred by the end users. More focus will be on these products.

### Progress against milestones

**Has your project published at least one dataset through GBIF.org?: Yes**

**Dataset published:**

Dataset	DOI
Checklist of Flora Records at Asukese Forest Reserve in Ghana	<a href="https://doi.org/10.15468/wzpsw4">https://doi.org/10.15468/wzpsw4</a>
Checklist of Flora Records at Bia North Tributaries Forest Reserve in Ghana	<a href="https://doi.org/10.15468/zzqz9h">https://doi.org/10.15468/zzqz9h</a>
Checklist of Flora Records at Asukese Forest Reserve in Ghana	<a href="https://doi.org/10.15468/qe2rms">https://doi.org/10.15468/qe2rms</a>
Floral Checklist Records of Some Forest Reserves in Ghana	<a href="https://doi.org/10.15468/wzpsw4">https://doi.org/10.15468/wzpsw4</a>
Checklist of Flora Records at Bonsa River Forest Reserve in Ghana	<a href="https://doi.org/10.15468/wu67bp">https://doi.org/10.15468/wu67bp</a>

**Has at least one member of your project team received certification following the BID capacity enhancement workshop?: Yes**

**Name of the workshop participant:**Ransford Agyei

**Certification obtained:** Basic Badge

### Report on Activities

#### Activity progress summary

Pre-project implementation and inception meetings have been completed. As a result, all partners and stakeholders know their roles and responsibilities to ensure successful project delivery. Regular partner meetings of the project continue to be held.

Relevant stakeholder consultations are 100% completed with respect of definition of user needs to address appropriate data needs and end use expectation. A technical team that was constituted to work on the data mobilization and associated information products have also benefited immensely from GBIF training and meetings organized in the project period before midterm reporting. However, since stakeholder consultations are critical components of the project's success, consultations will continue for the rest of the project deliverables.

The project has been able to mobilize more than 100% of its target data records. A few non critical issues exist in the datasets. The will be revised and all

datasets will have no issues by the end of the project.

The Environmental Protection Agency in Ghana is interested in invasive species information products specifically distribution map of invasive species in the ecosystem of Ghana for revision of the National Invasive Species Strategic Action Plan (NISSAP). Therefore, Crop Wild Relative and Invasive species distribution maps, KBA and Redlist assessment are introduced as new products preferred by the end users. Our activities are now focusing on the development of all these information products and stakeholder engagements.

## Completed activities

### Activity: Pre-implementation planning meeting

**Description:** Involved the core project implementation team to draw up the project implementation plan 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:** Midterm Report

### Activity: Project Inception Meeting

**Description:** The purpose of the inception meeting was 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 the project implementation.

**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/>

### Activity: Capacity building

**Description:** A 2-day training workshop for relevant institutions on data mobilization, management and digitization

**Start Date - End Date:** 16/12/2021 - 17/12/2021

**Verification Sources:** <https://www.gna.org.gh/1.21298349>

Midterm Report

Media Brief

### Activity: Strengthen BIMF

**Description:** Hosting of annual BIMF for its current members and also use the opportunity to recruit more institutions onto the platform and deliberation how investment in biodiversity data is key for national development .

**Start Date - End Date:** 1/12/2021 - 2/12/2021

**Verification Sources:** <https://www.gna.org.gh/1.21298349>

Midterm Report

Media Brief

### Activity: Data Mobilization

**Description:** Mobilization of datasets from identified sources completed, analyzed and cleaned to make them fit for use. The datasets have also been published on GBIF IPT.

**Start Date - End Date:** 1/6/2021 - 31/1/2022

**Verification Sources:** Midterm Report

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

### Activity: Capacity Building

**Description:** A 2-day training workshop for relevant institutions on data , cleaning, publishing.

**Start Date - End Date:** 24/11/2021 - 25/11/2021

**Verification Sources:** <https://www.gna.org.gh/1.21298349>

Midterm Report

## Report on Deliverables

### Deliverables progress summary

More than 100% of target data to be mobilized has been completed and published in GBIF. Therefore, all data mobilization deliverables were accomplished.

For progress and means of verification on evaluation phase deliverables, see the list of deliverables below. These include new information products: Distribution maps of Crop Wild Relative and Invasive species, KBA and Redlist assessment as deliverables. These have been introduced as new products preferred by the end users. More focus will be on these products. Major progress on these information products is that all datasets required to develop them have been mobilized.

The monitoring and evaluation conducted revealed that some institutions would like to be GBIF publishers after the capacity building workshop. These will need to be registered. We are working with BID regional contractor to complete the registration. Once registered, these will be assisted to publish their data on GBIF.

Delays were observed during the data mobilization phase due to delay in project fund approval and COVID-19 restrictions. Approval for funding and subsequently payment were made in very 11th October instead of July hence inability of the project team to engage some key institutions for data mobilization. Additionally, delay in data sharing agreement with some institutions hampered the data collection. COVID -19 also restricted some of the travels and activities had to be re-scheduled due to Delta/Omicron intensification. Fortunately, all the target datasets have been gotten and published.

Progress towards deliverables

## Deliverables - Project planning phase

### Data Mobilization Plan

**Description:** Describes datasets to be mobilized, information products to be developed and use of the information products (mainstreaming processes)  
**% complete:** 100%

**Status update:** Data mobilization and use plan in excel to ensure accurate data workflow

**Sources of verification:** Data mobilization and use plan is attached to this report

## 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/ A Rocha Ghana/Conservation Alliance

**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:** <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 2021.  
**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*) will be laid on an ecosystem map of Ghana using GIS analysis tool to get their distribution map to be 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:** 80%

**Status update:** Occurrence records of the two IS mobilized and published on GBIF IPT. Records to be supplemented by data from Global Invasive Species Database (GISD) on Ghana. EPA ready to integrate map into their annual NISSAP review in December, 2022. A member of our project was added to the NISSAP Technical Working Group (TWG) to ensure smooth mainstreaming of this product. Meeting on product integration update was discussed at the NISSAP biennial meeting on 31/05/2022.

**Sources of verification:** <https://doi.org/10.15468/w87ty5>

### 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 policymakers 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:** 75%

**Status update:** Occurrence records of the CWRs (grains, vegetables, root and tubers etc.). Ecosystem map of Ghana has been developed with the support of EPA.

**Sources of verification:** <https://doi.org/10.15468/pbn67c> <https://doi.org/10.15468/zt6gk4> Midterm Report

### 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:** 70%

**Status update:** Checklist and occurrence records mobilized. KBA assessment template in excel showing list of KBA trigger species and their populations determined for one OECM.

**Sources of verification:** [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: Range maps and Red List assessments of three Endemic Heptofauna Species in key OECMs

**Description:** National Range maps and subsequent Redlist assessments of three endemic species of frog namely *Hyperolius baumannii*, *Hyperolius fusciventris* and *Hyperolius sylvaticus* will be conducted.

**% complete:** 40%

**Status update:** Occurrence records mobilized and published.

**Sources of verification:** <https://doi.org/10.15468/k74k8j>

### Information product 5: Infographics of threatened species within OECMs and other off reserve areas

**Description:** This is to give information focused only on IUCN Redlist species and threatened endemic species (based on national threat rating for Ghana) for SBR reporting using graphs, charts and distribution tables. This information is useful for the EPA and MESTI for environmental impacts assessments to recognize these species for development activities within the OECMs and also update biological resources recorded within the OECMs.

**% complete:** 60%

**Status update:** Completed user needs assessments for this product. Stakeholders such as the EPA, MESTI, National Development Planning Commission (NDPC) very interested in this product. Checklist and occurrence data mobilized and published.

**Sources of verification:** <https://doi.org/10.15468/wzpsw4> <https://doi.org/10.15468/wu67bp> <https://doi.org/10.15468/zzqz9h> <https://doi.org/10.15468/sw6yw6> <https://doi.org/10.15468/uzbb7r> <https://doi.org/10.15468/tuaw26> <https://doi.org/10.15468/3t9mtt> <https://doi.org/10.15468/bdgbm9>

### Information product 6: Integration of biodiversity data and information into National Biodiversity Policy (NBP)

**Description:** Develop petition paper on the need to integrate biodiversity data and information into the draft National Biodiversity Policy (NBP) to ensure government funding and other statutory support biodiversity data-science-policy related activities in the country and submitted to the National Biodiversity Committee (NBC). The NBC is the body in charge of formulating and drafting biodiversity policy related issues in Ghana. The petition paper will highlight data mobilization efforts in Ghana including BID-AF2020-029 USE

**% complete:** 100%

**Status update:** The NBC lobbied and biodiversity data and information included into draft NBP. This is found at page 30 of the draft NBP.

**Sources of verification:** [https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE?preview=Draft+NBP\\_16.08.2021+\(1\).docx](https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE?preview=Draft+NBP_16.08.2021+(1).docx)  
<https://www.dropbox.com/home/BID-AF2020-029%20PROJECT%20FILE?preview=Petition+Letter.pdf>

## Information product 7: Data Paper

**Description:** Data paper to highlight datasets that are published under the project for knowledge and lesson learning.

**% complete:** 50%

**Status update:** All published datasets are accompanied with metadata which will be the basis of the data paper.

**Sources of verification:** <http://197.189.235.147:8080/iptghana/rtf.do?r=avifauna123&v=1.1> <http://197.189.235.147:8080/iptghana/rtf.do?r=mammal001&v=1.1> <http://197.189.235.147:8080/iptghana/rtf.do?r=butterfly001&v=1.1> <http://197.189.235.147:8080/iptghana/rtf.do?r=use2020&v=1.2> <http://197.189.235.147:8080/iptghana/rtf.do?r=crema001&v=1.1> <http://197.189.235.147:8080/iptghana/rtf.do?r=crema002&v=1.0> <http://197.189.235.147:8080/iptghana/rtf.do?r=cwr001&v=1.2> <http://197.189.235.147:8080/iptghana/rtf.do?r=csirpgrri2021&v=1.2> <http://197.189.235.147:8080/iptghana/rtf.do?r=check002&v=1.3> <http://197.189.235.147:8080/iptghana/rtf.do?r=check003&v=1.3> <http://197.189.235.147:8080/iptghana/rtf.do?r=check001&v=1.6> <http://197.189.235.147:8080/iptghana/rtf.do?r=check0004&v=1.2> <http://197.189.235.147:8080/iptghana/rtf.do?r=heptofauna001&v=1.1>

## Events

### Capacity Building

**Dates:** 2021-12-16 - 2021-12-17

**Organizing institution:** Conservation Alliance

**Country:** Ghana

**Number of participants:** 22

**Comments:** Training on biodiversity data mobilization, management, digitization were conducted for participants.

**Website or sources of verification:** Midterm Report, <https://www.gna.org.gh/1.21298349>, Media Brief

## Events

### Strengthening of BIMF

**Dates:** 2021-12-01 - 2021-12-02

**Organizing institution:** Conservation Alliance

**Country:** Ghana

**Number of participants:** 34

**Comments:** Update on this project and discussion on investing time and resources on biodiversity data

**Website or sources of verification:** Midterm Report, <https://www.gna.org.gh/1.21298349>, Media Brief

## Events

### Capacity Building

**Dates:** 2021-11-24 - 2021-11-25

**Organizing institution:** Conservation Alliance

**Country:** Ghana

**Number of participants:** 22

**Comments:** Training on biodiversity data , cleaning and publishing were conducted for participants.

**Website or sources of verification:** Midterm Report. <https://www.gna.org.gh/1.21298349>

## Communications and visibility

The project's progress were shared among project stakeholders in Ghana. During the BIM and capacity building workshops held in December, 2021, members were briefed about the project's progress and the funding contribution by JRS Biodiversity Foundation and GBIF in advancing data-science-policy in Ghana through this project. All communication materials included JRS, BID and GBIF logos. Project reports are also distributed to the BIMF members for review and inputs. Additionally, social media platforms were used to enhance visibility of the project including meetings with stakeholders and capacity building workshops. Funding from the JRS Biodiversity Foundation through the GBIF Biodiversity Information for Development (BID) Programme was always mentioned on the social media platforms. Links can be found below.

<https://www.facebook.com/101942998477121/posts/pfbid02hep8L8jGED4w3QCZF1hTf33aLvquru9gcrVgfgnda7vyr4nuyFKmpktaLt5Fc8kPl/?d=n>

<https://www.facebook.com/101942998477121/posts/pfbid02C9VTDZfxWwG3DAe8321V5Usm3LpNde49zMdW2xQeLSjTdUV7jnZVWYaqWBjz8fjl/?d=n>

The following resources can be added to the project's webpage.

BIMF strengthening and capacity building workshops held in November and December, 2021 with the focus on investing time and resources in biodiversity data. Publication on the workshop is found in the following link. <https://www.gna.org.gh/1.21298349>.

Additionally, media brief, banner, brochure (attached )t should be added to the project's webpage.

## Monitoring and evaluation

### Monitoring and evaluation findings

In order to track the progress of the project, an evaluation exercise was conducted and the results revealed that:

- All the planning phases of the project including the pre- Implementation planning meetings, project Inception meetings, data mobilization plan, mandatory attendance of a project team member on BID Capacity Enhancement Workshop have been completed (Phase one of the project).
- Mandatory milestone of the midterm; project implementation including certification on BID Capacity Enhancement Workshop, publication of at least one dataset and completion of phase one the project have been met.
- All datasets have been mobilized and fully published on GBIF exceeding target. Strengths of the project include partnership building and stakeholder involvement in the project activities. Feedback on weakness was more on absence of data records of aquatic species to inform decision of aquatic biodiversity –related policy issues. This will be considered in future work.
- The project remains very relevant to stakeholders and the end users are looking forward to using the information products. The Environmental Protection Agency, Ghana) is the newest end user to express interest in using the information products.
- The assignment of GBIF Support Associate, Laban Musinguzi was timely in providing technical and management backstopping to the project.
- Areas of success to build on include the expression of interest of three publishers to make their data records on the GBIF and a new user committed to using two of the information products.
- Additional technical mentorship will be needed in IUCN Redlist assessment and species distribution models/maps.

### Impact of COVID-19 pandemic on project implementation

COVID -19 also restricted some of the travels and activities have been scheduled as the Delta and Omicron variants became intensified. This affected data mobilization exercises as some data holders put embargo on non-workers of the institution not to visit their premises. This affected the times for the organization of workshops on capacity building workshops and strengthening of the Biodiversity Information Management Forum (BIMF),Ghana.

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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.

