BID Africa 1 – Small Grant Template
Final narrative report

Remember that all project activities should be completed within the implementation period of your project. The evaluation period must focus on final reporting and evaluation of your project.

Instructions

- Fill the template below with relevant information. If no result has been achieved on a specific point, please indicate the reason of the delay and expected date of completion. Use the information included in your project Full proposal (reproduced in annex III.a. of your BID contract) as a baseline from which to complete this template.
- The information provided below must correspond to the financial information that appears in the financial report.
- Sources of verification are for example links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc. Please provide access to all mentioned sources of verification by either providing the link or sending a copy of the documents.
- This report must first be sent as a Word document to BID@GBIF.org and be pre-approved by GBIFS.
- Once this report is pre-approved in writing by GBIFS, it must be signed by the BID project coordinator and sent by post to:
The Global Biodiversity Information Facility Secretariat (GBIFS)
Universitetsparken 15
DK-2100 Copenhagen Ø
Denmark

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Template

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This programme is funded by the European Union
2. Project Information

2.1. Principal investigator and grant coordinator: Institution/network-agency name:
National Museums of Kenya and National Environment Management Authority

2.2. Principal investigator name and role: Dr Charles N. Lange: Role – Data Mining, Data Management, analysis, reports development and submission to GBIF

2.3. BID proposal identifier: BID-AF2015-0045-SMA

2.4. Project title: Mobilizing freshwater snails' biodiversity datasets for advancing biodiversity knowledge access, conservation and human wellbeing in Kenya

2.5. Start date and end date of the reporting period: 1st December, 2016 – 31st August 2017

2.6. Country(ies) in which the activities take place: Kenya

3. Overview of results

3.1. Executive summary

Give a short summary of the activities implemented and the outcomes of the project for the whole implementation period (no more than 500 words maximum).

This project sought to mobilize freshwater snails data from secondary sources mainly focusing on collections at the National Museums of Kenya which is the national repository of natural history collection in Kenya including also data mining from literature. The first key project activity involved data mining from collections at the National Museums of Kenya with the assistance of the Project assistant who is a technician at the National Museums of Kenya. This activity ran parallel with data mining from various literature sources such as published books, research papers and internet (www) including data mining from other institutions collections. Data-sets mined focused mainly on taxon data-sets, occurrence, ecology and abundance data-sets. Data mined particularly from collections was screened by the Project Principal Investigator (PI) for quality control particularly the taxon data-sets before entry in to GBIF format database for publication. The data mobilized yielded 57 species comprising of 38236 individuals of freshwater snails (Gastropods). Two (2) species of bivalves captured from literature were also included in the database mainly owing to their conservation status. Among the species recorded, 18 (31.6%) of them are endemic to Kenya. Several other species recorded from the collection at the National Museums of Kenya, are material from other countries and do not occur in Kenya. At least four species are listed Critically Endangered and four others Endangered in the IUCN Red List of Threatened animals. Majority of the species are though listed as Least Concern in the IUCN category. The taxon
(species) database was published in GBIF.org. Most of the taxon names were matched with locality (occurrence data). However, many locality names appear may have been mispelled or present broad range locality names that makes it difficult to present point geodatabase (GPS data). Thus, presenting occurrence database with geodata was a great challenge and hence occurrence data was not published. Nevertheless, efforts are find the best arrangement for presenting the geodata for the various localities associated with the species data. The outcome from the project has been a major contribution in improving the knowledge of freshwater snails in Kenya and even Africa. The classification (species) database published present the range of freshwater snails from Kenya and even beyond which form a good reference point on freshwater snails biodiversity. More so, the project contributes in availing information for promoting the understanding and management of potential snails-borne diseases in Kenya through knowledge on the distribution of the potential intermediate hosts snails in the genera Bulinus and Biomphalaria. The project contributed in enhancing research capacity in Kenya through induction of the research assistant in freshwater snails diagnostics. The project further provided insights for application in designing future research projects on freshwater snails.
3.2. Progress against expected milestones:

<table>
<thead>
<tr>
<th>Expected milestones/activities</th>
<th>Completed? Yes/No</th>
<th>Explanatory notes</th>
<th>Sources of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed capacity self-assessment questionnaire for data holding institutions (<a href="http://www.gbif.org/resource/82785">http://www.gbif.org/resource/82785</a>)</td>
<td>Yes</td>
<td>Completed the assessment questionnaire and send to GBIF secretariat</td>
<td>The completed questionnaire send</td>
</tr>
<tr>
<td>The institution that will publish your data is registered with GBIF.org For registered data publishers see: <a href="http://www.gbif.org/publisher/search">http://www.gbif.org/publisher/search</a></td>
<td>yes</td>
<td>See: GBIF.org</td>
<td><a href="http://www.gbif.org">www.gbif.org</a></td>
</tr>
<tr>
<td>The data users identified in the full proposal have documented their intended use of the mobilized data and provided early feedback</td>
<td>Yes</td>
<td>The results to be used in the development of the Kenya’s National State of Environment Report (SoE) 2015-17</td>
<td>Draft SoE</td>
</tr>
<tr>
<td>All mobilized data has been published to GBIF.org</td>
<td>Checklist Done; Occurrence dataset has challenges due with names that cannot exactly be assigned a Geodata or GPS point data. Species data-sets published</td>
<td>See Checklist on <a href="http://www.gbif.org">www.gbif.org</a></td>
<td>Publication at <a href="http://www.gbif.org">www.gbif.org</a></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>The training outcomes of the project have been documented, including the number of people receiving certification through the BID Capacity Enhancement workshops, the number of people trained in nationally organized events, and the evaluation of the impacts of these training activities</td>
<td>Yes</td>
<td>Mr. Masinde did the online course and is using the expertise to promote database activities at NEMA CHM</td>
<td>Draft SoE chapter on Biodiversity</td>
</tr>
<tr>
<td>Final capacity self-assessments have been completed with sustainability plans</td>
<td>Yes</td>
<td>See send copy of self assessment</td>
<td>Self assessment document send to GBIF</td>
</tr>
<tr>
<td>All uses of the mobilized data have been documented</td>
<td>Yes</td>
<td>Draft SoE noted use of mobilized data on freshwater snails and other will be documented too</td>
<td>Draft SoE Chapter on Biodiversity</td>
</tr>
<tr>
<td>Best practices and lessons learned have been documented</td>
<td>Yes</td>
<td>This report summary indicates best lessons learnt</td>
<td>This report – see summary section</td>
</tr>
</tbody>
</table>
3.3. Project deliverables and activities

Refer to the table in section 2.2 “Deliverables, activities and reporting criteria” of your BID full proposal. Provide updates on the status of each of planned deliverables. We remind you that all deliverables should be completed at the time of drafting this report (end of implementation period). In the event of unexpected delay, please provide detailed explanatory notes and indicate planned completion date. Add as many rows as needed.

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Related activity</th>
<th>Completed?</th>
<th>Explanatory notes</th>
<th>Sources of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Electronic Database</td>
<td>Museum collections data mining, Screening literature sources &amp; Data entry to electronic database</td>
<td>Yes</td>
<td>Data mining from collection and screening of literature sources successfully undertaken and completed</td>
<td><a href="http://www.gbif.org">www.gbif.org</a> data (species data-set) publishing site and copy at NMK database</td>
</tr>
<tr>
<td>• Scientific Publication/ s</td>
<td>Data Treatment &amp; Manuscript development &amp; submission</td>
<td>Ongoing</td>
<td>The manuscript for publication is at an advanced stage now and expect to submit to a journal for consideration on for publication in Early October, 2017</td>
<td>Draft Manuscript can be supplied to GBIF</td>
</tr>
<tr>
<td>• Open access data in GBIF</td>
<td>Data loaded to GBIF.org</td>
<td>Checklist</td>
<td>Occurrence data presenting challenges due to challenges with locality names that</td>
<td>Check <a href="http://www.gbif.org">www.gbif.org</a> for checklist data</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Dataset title</th>
<th>Publishing institution</th>
<th>DOI or URL/Planned hosting institution</th>
<th>Date/expected date of publication</th>
<th>Explanatory notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxon-data set – Checklist (species)</td>
<td>National Museums of Kenya</td>
<td>GBIF.org</td>
<td>Published on <a href="http://www.gbif.org">www.gbif.org</a> data publishing site</td>
<td>Data published on GBIF.org</td>
</tr>
<tr>
<td>Occurrence datasets</td>
<td>National Museums of Kenya</td>
<td>Work on progress</td>
<td>By end of November, 2017</td>
<td>Many of the the species occurrence</td>
</tr>
</tbody>
</table>

3.4 Datasets published on GBIF.org

*If the dataset is not yet published, please indicate detailed explanation about causes of delays*. Add as many rows as needed.
data presents locality names that can not be assigned precisely to Geodata or GPS data point owing to the way the names are provided. This work therefore require extensive verification which in some cases require visits to given locality names for getting reliable geodata. Some locality names also were either mispelled or non-existence while others present broad names of large geographical areas that cannot precisely be assigned a point GPS data. Thus
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<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>further extensive verification is necessary which require more time</th>
</tr>
</thead>
</table>
3.5. Examples of use of biodiversity data available through GBIF

Use the table to document use or planned use of data available through GBIF as part of your project. You may want to refer to the section 2.5 ‘Plan to support the integration of biodiversity information into policy and decision-making processes’ of your BID full proposal. Please provide the DOI for datasets published on GBIF or data downloaded from GBIF in the “Dataset” column. Briefly describe how the data have been used or are planned to be used in the “Data use” column (ca. 50 words). Provide the date or approximate time frame in months for the use or planned use in the “Date/time frame” column. Please provide links to any documents or webpages documenting the use in the “Sources of verification” column. Add as many rows as needed.

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Data user</th>
<th>Data use</th>
<th>Date/time frame</th>
<th>Sources of verification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe names (Taxon Dataset) of freshwater snails and loaded to GBIF</td>
<td>Government agencies such as NEMA, NMK and other, International agencies and Non-Governmental Organisations</td>
<td>Research, Environmental Assessments and Biodiversity conservation promotion including management of potential snail borne diseases</td>
<td>Data will be used for the development of the State of Environment report 2015-17, development of management plans</td>
<td>State of Environment report 2015-2017</td>
<td>The database on checklist (species) and distribution (countries) form a critical foundation for building relevant research projects and targeted biodiversity assessment s, including basis for promotion of biodiversity conservation. The information is will also be instrumenta l in serving public health through improved</td>
</tr>
</tbody>
</table>
knowledge on distribution of potential vectors of parasites that cause snail-borne diseases and hence disease transmission risks

3.6. Events organized as part of the project

List all the events that have been organized as part of your project. Please provide links to any documents or webpages documenting the use in the “Sources of verification” column. Add as many rows as needed.

<table>
<thead>
<tr>
<th>Full title</th>
<th>Organizing institution</th>
<th>Dates</th>
<th>Number of participants</th>
<th>Sources of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBIF Supported Freshwater Snails Data Mobilization Workshop at the National Museuems of Kenya</td>
<td>National Museuems of Kenya</td>
<td>29th August, 2017</td>
<td>15</td>
<td>List of Participants</td>
</tr>
</tbody>
</table>

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4. Implementation of BID project activities

Refer to section 2.2 “Deliverables, activities and reporting criteria” in your BID full proposal. Provide updates on each of the activities using the reporting criteria and other sources of verification as appropriate.

Sources of verification are for example links to relevant digital document, news, newsletter, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc.

4.1. Goal 1: Increase available biodiversity data, within and beyond the grant period

Activity 1 Museum collections data mining:

Description of any implementation during the reporting period
Data Mining from Museum collection mainly at the National Museums of Kenya (NMK) went on successfully and and completed. All freshwater snail datasets (Taxon, specimens, locality and ecological data) were captured from NMK and other institutions collections. The Museum collection recorded a total of 38236 specimens of freshwater snails. On taxon database, 57 species of freshwater snails (gastropods) and 2 species of bivalves were capture.

Sources of verification
Excel database sheets that can be supplied and checklist database loaded to GBIF.org

Activity 2 name: Screening literature sources

Description of any implementation during the reporting period
Relevant data (on freshwater snails) search and retrieval from secondary sources was undertaken from various sources traced (Books, www and scientific publications) and merged with data mined from museum collections. A checklist of 57 gastropods species and two bivalves was compiled from material at museum collection and literature sources. Some material from the museum collection comprised of species collected from other countries. Only species that were not represented in the museum collection but their geographical distribution include Kenya were captured from literature and merged with museum collection species database.

Sources of verification
Excel database on species checklist, specimens records and occurrence (locality data), mid-term progress report and this project narrative final report.

Activity 3 name: Data entry to electronic database

Description of any implementation during the reporting period
Electronic databasing of freshwater snails data successfully completed and is available at NMK.
4.2. Goal 2: Apply biodiversity data in response to conservation priorities

**Activity 1** Threatened species maps development/updating and revised species conservation status proposals.

Description of any implementation during the reporting period

Distribution map for threatened species and vectors of parasitic diseases done. Upon review of threatened species conservation status using the IUCN criteria 3.1. a conclusion that the species conservation status review of 2010, 2016 and 2017 which most of them I was the assessor was still valid.

**Sources of verification**
Species checklist database loaded at GBIF.org

**Activity 2 name: CHM data enhancement**

Description of any implementation during the reporting period

Database submitted to CHM manager at NEMA for review and consideration for loading to national CHM

**Sources of verification**
Acknowledgement of receipt of data from CHM manager

[Add as many activities as given in your full proposal under “Deliverables, activities and reporting criteria” for goal 2]

**Activity 3 name: Provision of data for the State of Environment report (SoE) development**

Description of any implementation during the reporting period

Data mobilized captured and used in updating the draft SoE 2015-17

**Sources of verification**

Biodiversity chapter of the State of Envriomment report 2015-17.
5. Updated calendar for the BID project implementation and evaluation period

The calendar should be completed in the same way as in the Full Project Proposal, but should include any expected changes. Provide reasons for any expected changes in section 5.1 ‘Explanatory Notes’.

<table>
<thead>
<tr>
<th>Implementation period start date and end date (dd/mm/yy)</th>
<th>1st June 2016 – 31st August, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
</tr>
<tr>
<td>Mid-term evaluation &amp; reporting</td>
<td>X</td>
</tr>
<tr>
<td>Mining of Museum data</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>Screening literature sources</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Data entry to electronic database</td>
<td>X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Data cleaning and treatment</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>Development of publication/s</td>
<td>X X X x x x x x</td>
</tr>
<tr>
<td>Stakeholder forum for project information sharing</td>
<td>X X x x x x</td>
</tr>
<tr>
<td>Loading data to GBIF open access platform</td>
<td>X X X</td>
</tr>
</tbody>
</table>

This programme is funded by the European Union
5.1. Explanatory notes:
The project was successfully implemented.
6. **Sustainability plans**

   *Explain the approach that will be taken to ensure the sustainability of the project’s results after the end of your project (500 words maximum)*

Freshwater snails’ collections mobilization will continue to happen through fieldwork and perhaps donations. The acquired collections will then be mainstreamed to NMK collection data-basing system. The cooperation established between NMK and NEMA will nurture sustainability of this project work through joint programs. NMK through the government of Kenya performance contracting policy has collection acquisition and data-basing as a key performance contract target. Therefore by fast-tracking performance contract requirements, the database will be updated after this project by NMK personnel. As the data volume increases, the database published at GBIF.org will be updated. NEMA through the research collaboration established between NMK and NEMA will continue to access the new information for application in advancing species and wetlands or environment conservation decision making process and policies. NMK through the GBIF node manager will also continue to contribute data to open access.
7. Beneficiaries/affiliated entities and other cooperation

7.1. Relationship with project partners

Please describe the relationship between your project coordinating team/institution and your project partners, and with any other organisations involved in implementing your BID project.

The National Museums of Kenya (NMK) which was the Lead institution in the project has successfully natured a research collaboration with the National Environment Management Authority (NEMA) and other relevant partners particularly the scientific institutions involving data sharing for advancing environment management. The BID project was instrumental in laying the foundation for this corporation through joint freshwater snails data mobilization for application in advancing biodiversity information knowledge, access and environmental conservation. NMK and NEMA held joint data mobilization from NMK and other institutions extensive collections and shared this data with NEMA for application in promoting environmental management and Development of the State of Environment report 2015-17 among other environmental management undertakings. The laid foundation will continue to be expanded.
7.2. Links to other projects and actions

Where applicable, outline any links and synergies you have developed with other actions, e.g. GBIF nodes, other BID funded projects, etc. If your organization has received previous grants in view of strengthening the same target group, how far has your BID project been able to build upon/complement the previous project(s)?

The National Museums of Kenya in collaboration with institutions in Africa also received other GBIF funding. In particular, the Africa Insect Atlas where NMK invertebrates section collaborated with other African institutions. Freshwater snails data mobilization project shared a lot with the Africa Insects Atlas project working closely in the same collections, sharing experiences and building synergies in data mining from the collections and any challenges that arise we discussed and sought mechanisms for addressing the challenges concurrently. The project learnt experiences also from projects at Kenya Wildlife Services i.e. Mobilizing biodiversity information from Kenya Wildlife Service” and Kenya’s other carnivores. The project PI had an active project on assessing the population status and ecology of an endangered freshwater snail species (Eussoia inopina) from Eastern Kenya which was also another point of project link. The project results also from a basis for establishing further project linkages i.e. new project development and implementation.

8. Visibility

Please refer to the BID guidelines.

8.1. Visibility of the BID project

How is the visibility of your BID project being ensured?

Short summary

The project once was approved and funds provided was circulated via NMK (KenBIF node) communication to NMK and associated collaborators via email creating the first project visibility intervention. Further project visibilities were done during two key stakeholder forums, one at the National Museums of Kenya and another one during drafting of the State of Environment report 2015-17 making process. Further long term visibility will happen through the data published on GBIF.org, local NMK database, references to the paper and presentation to conferences which the PI will make in the future including reference to the project in building other future projects on freshwater gastropods in Kenya. The NMK and NEMA education and public communication sections will be used as avenues for increasing the project visibility through these section public programmes (education and other publicity programmes) also in the future

Sources of verification

KenBIF node – can be found at KenBIF communicaiton platforms, www.gbif.org website on funded projects, www.gbif.org project resources for published
datasets, deliberation of NMK stakeholder project sensitization workshop and any future workshop proceedings.

8.2. Visibility of the EU contribution

Short summary
EU contribution to this project was mentioned or recognized in all project activities supported by the project funds from EU. For instance, during the stakeholder workshop at the National Museums of Kenya, EU contribution was recognized and even during the meeting for drafting the State of Environment Report. Going forward, any activities involving use of results associated with this project, EU contribution will be acknowledged i.e. in publications and even conference presentations.

Sources of verification
PowerPoint presentation for the stakeholder workshop at the National Museums of Kenya on the acknowledgement part. Further publication and presentation related to the project acknowledging EU can be availed.

Signature __________________________
Name of the contact person for the BID Project: _________________________________
Date report sent by email in Word format to bid@gbif.org for pre-approval: 31.8.2017 ______________
Date report sent by post to GBIF Secretariat: __________________________