BID Africa 2017 – National Grant Template
Final narrative report

Instructions

- Fill the template below with relevant information. If no result has been achieved on a specific point, please indicate it as "no result achieved yet" and **indicate expected date of completion.**
- Use the information included in your project Full proposal (reproduced in annex III 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 direct 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 direct 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

Template

1. Table of Contents

This programme is funded by the European Union

2. Project Information

2.1. Project Coordinator: Institution/network/agency name:

Dr Miasa Eustache: University of Toamasina, Institut Supérieur de Sciences, Environnemet & Développement Durable (ISSEDD), together with

Dr Vere Ross-Gillespie: GroundTruth (GT)

2.2. Main contact person and role:

Dr Miasa Eustache; Project management/ co-ordinator. Assistance with organising a venue for AFRESH.IO, guidance and supervision to university students for projects focused on freshwater ecosystems (especially those focused on diatoms, EPT taxa and WQ), acting as a central repository for all collected samples, supervision of students to assist in digitising/mobilising existing data, assistance with coordinated sampling efforts across Madagascar and providing support to future planned long-term monitoring projects

Dr Vere Ross-Gillespie; Project coordination and support to all project partners, facilitating and organising AFRESH.IO workshop, training delegates to use citizen science tools, miniSASS data management/uploading, historical data collation.

2.3. BID proposal identifier:

BID-AF2017-0306-NAC

2.4. Project title:

The Forgotten African Islands - Addressing the gap in freshwater biodiversity knowledge for the Indian Ocean Islands.

2.5. Start date and end date of the reporting period:

February 2018 – March 2019

2.6. Country in which the activities take place:

Madagascar

South Africa

This programme is funded by the European Union

3. Overview of results

3.1. Executive summary

Give a short summary of the activities implemented and the outcomes of the project for the reporting period (500 words maximum)

Since the project commencement in February 2018, and in collaboration with project partners and several museums, where EPT taxa (Ephemeroptera, Plecoptera and Trichoptera) for the region are curated, we have been able to verify specimen records, capture and then re-verify data. Consequently, we have been able to publish two primary datasets of Madagascan Ephemeroptera, Plecoptera and Trichoptera (EPT) and diatom data to GBIF with a combined total of 5646 species occurrence records. Of these, 5313 are related to the EPT taxa and include species occurrence data obtained from museum records and historical literature, while 333 are diatom species occurrence records derived from historical literature only.

Collectively these data sets are the first and most comprehensive of their type for the region. They form a vital basis from which to conduct future freshwater ecological research but also to develop much needed metrics for the region and to inform policy. The data will be utilised in the next Red Data assessment (planned over the next 5 years) prioritising Freshwater Invertebrates in Southern Africa/Africa – which will likely include representative of the EPT taxa

Part of the BID project, the AFRESH.IO workshop with project partners and students, was successfully held at the Madagascar Biodiversity Centre in July 2018. This workshop included specialised training (including insect identification, sampling and preservation techniques) citizen science training as well as GBIF knowledge dissemination, networking opportunities, student research report back sessions and also Northern-Southern hemisphere skills transfer. Training in citizen science tools, and the donation of sampling equipment (and citizen science tools) to the University of Antananarivo and the University of Toamasina combined with a coordinated citizen science sampling event has also led to the miniSASS tool being used for the first time in Madagascar for river monitoring by university students, researchers and citizens. Newly developed Ephemeropteran identification guides for Madagascar, developed by project partner CMZL, were also provided to delegates.

The Universities of Toamasina and Antananarivo will use the donated equipment, guides, tools, skills and collated data along with newly collected data (collected through voluntary sampling - miniSASS) to form the basis of on-going and future-dated student research projects which can be aimed at developing local ecosystem health metrics/indices. Research projects will be undertaken in collaboration with and under the supervision of experts from SA, members of the broader AFRESH network and other international partners.

As final outputs from the BID project four separate research proposals were developed in collaboration with BID project partners and submitted to external funders. One long term research and monitoring proposal was submitted to the CEPF and is still under review. Two proposals, one submitted to the Darwin initiative, and one submitted to the Western Indian Ocean Strategic Action Programme (WIOSAP), are also still under review. Finally, a concept note submitted to the Indian Ocean Commission has been accepted for River rehabilitation work in Mauritius with BID project partners REEF/GroundTruth. New occurrence data will be collected for that region and added to the databases developed during this project. Overall, project partner relationships have been strengthened throughout the project and have a bright future ahead.

3.2. Progress against expected milestones:

Give an overview of all the expected milestones for your project from the beginning until now (see Annex V of your contract)

Expected milestones/activities	Completed? Yes/No	Explanatory notes	Sources of verification
Completed capacity self-assessment questionnaire for national biodiversity information facilities https://www.gbif.org/document/82277/capacity-self-assessment-guidelines-for-national-biodiversity-information-facilities (EN) https://www.gbif.org/document/82782/auto-evaluation-des-capacites-pour-les-systemes-nationaux-dinformation-sur-la-biodiversite (FR) (***Early Progress report milestone***)	YES	The questionnaire was completed by GroundTruth in conjunction with the project lead ISSEDD and MadBIF	Receipt of capacity self-assessment acknowledged by GBIF secretariat via e-mail (Maheva)
At least one national data publishing institutions are registered with GBIF.org Guidelines to become a publisher: https://www.gbif.org/become-a-publisher (***Early Progress report milestone***)	YES	We have three data publishing institutions registered as part of the project. BOKU University of Austria which is managing the Freshwater Information Platform (data publishing unit registered as "BioFresh" at GBIF) ISSEDD (the project lead's institution) is also registered as a data publishing institution with GBIF CNRE - a project partner based in Madagascar is linked to MadBIF We will also initiate the process of getting GroundTruth registered with SANBI as a data publishing institution.	https://www.gbif.org/publisher/b872b075-9ab5-4e27-b6c6-5add6b890379 https://www.gbif.org/publisher/c51031f4-69df-4b81-b296-5fdd72e7e693 https://www.gbif.org/publisher/c8ce072d-9c61-4ec8-b8e7-0c36a8122791
At least one person from the project team has completed the certification process following the BID Capacity Enhancement workshop on Data Mobilization organized as a part of the BID programme Africa 2015 or BID programme Africa 2017 (***Early Progress report milestone***)	YES	Dr Vere Ross-Gillespie attended the BID Capacity Enhancement Workshop on behalf of the project management team. All post workshop activities were completed and have been submitted for evaluation. Evaluation results have not yet been provided by GBIF BID.	Participant list for GBIF BID Capacity Enhancement Workshop 1 Cape Town
Knowledge dissemination activities have been scheduled following the first BID Capacity Enhancement workshop (***Early Progress report milestone***)	YES	The first knowledge dissemination activity was completed in Feb 2018 at the GroundTruth offices with key GroundTruth staff. The second took place via Skype and the third took place at the AFRESH.IO workshop.	Link to GroundTruth website with project information and knowledge dissemination dates: http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands

			See Appendix 1 AFRESH.IO Workshop Attendance register and Agenda See AFRESH.IO Workshop documentation including agenda, presentations, sessions and all material. https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf
At least one dataset has been published to GBIF.org (***Midterm report milestone***)	YES	Dataset compiled from existing records - 154 records of EPT taxa from museums – this dataset was published.	https://www.gbif.org/dataset/fb6835d0-b72e-464e-b49a-b69e5b9cc0b6 metadata are available at: http://data.freshwaterbiodiversity.eu/metadb/bf_mdb_view.php?entryID=FAI_1
The data users identified in the full proposal have documented their intended use of the mobilized data and provided early feedback (***Midterm report milestone***)	YES	Two of the primary intended data users are the University of Toamasina and CNRE. ISSEDD/Toamasina: Will use the existing data sets and new data (collected through voluntary sampling), to form the basis for future research projects which can be aimed at developing local ecosystem health metrics/indices. Projects will be undertaken in collaboration with and under the supervision of experts from South Africa as well as the broader AFRESH network and other international partners for continued sustainability. CNRE: Long-term goal is to use the data to develop a national river ecosystem monitoring programme and database, (for use by scientists, researchers, students etc), This would support IUCN global efforts. CNRE will use the data to assist ISSEDD/Toamasina in the development of national river	See Attached file MADIO-LG-2019-06_CEPF_Proposal.pdfand Appendix 2 – Submitted CEPF proposal “Project Rationale” under review and accpeted Jacotet River (Ridge to Reef) rehabilitation project Context See Appendix 3 – New MIniSASS records for Madagascar which are being used together with GBIF datasets for student projects

		health monitoring metrics/indices, using EPT taxa and diatoms. All Partners: An outcome of the AFRESH.IO workshop will be the drafting of a proposal to develop a long-term monitoring programme which incorporates citizen science-based monitoring.	
All mobilized data have been published to GBIF.org **(Final report milestone)**	YES	Datasets comprising 5313 EPT occurrence records and 333 Diatom occurrence records have either been published or are confirmed for publishing pending some delays communicated to GBIF	https://www.gbif.org/project/PTXkKWR6QoECgQy6leacM/the-forgotten-african-islands-addressing-the-gap-in-freshwater-biodiversity-knowledge-for-the-indian-ocean-islands#datasets https://www.gbif.org/dataset/fb6835d0-b72e-464e-b49a-b69e5b9cc0b6 https://www.gbif.org/dataset/42ac1433-d581-4480-8336-0078141a3ca3 - https://www.gbif.org/occurrence/download/0006580-190813142620410 Appendix 4
All published data meet the minimum requirements outlined in the Data Quality Requirements available at https://bid.gbif.org/en/community/data-quality/ **(Final report milestone)**	YES	All published data collate existing datasets into a GBIF standardized format.	See published data sets and Appendix 4
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 **(Final report milestone)**	YES	25 participants attended the AFRESH.IO main training workshop in Antananarivo (July 2018) – all of these participants received training in data publishing through the second knowledge dissemination session. Addionally a Citizen Science training sampling session was conducted during the AFRESH.IO workshop during which all 25 particpants gained knowledge and training	See AFRESH.IO Workshop documentation, training material etc and newly developed Ephemeropteran Identification guides https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf

		in the use of several freshwater Citizen Science monitoring tools (miniSASS, the transparent Veloicty Head Rod and the Clarity Tube). Tools were donated to the Univeristy of Antananarivo and the Univeristy of Toamasina. Following the workshop a number of student volunteers attended the coordinated voluntary sampling event under the supervision of University lecturers. The first independently collected miniSASS samples for Madagascar were uploaded during this voluntary sampling effort and in some cases are forming the basis for freshwater training in semester courses and also student projects. Research partners, who have done extensive collecting and research on Madagascar, have been identified and they have provided vital insights for us providing information on 'gaps' in biodiversity on Indian Ocean Islands, and future capacity building and extension of the project. Two project members, namely project co-leader Dr Vere Ross-Gillespie and Malagasy student Doudou Albert attended the Bid Capacity Enhancement workhsops 1 and 2 respectively. Both completed the workshops successfully and Dr Vere Ross-Gillespie attained the Biodiversity Data Mobilization Badge at the Advanced Level	BID Capacity Enhancement Workshops 1 and 2 attendence register See Appendix 3
Final capacity self-assessments for national biodiversity information facilities have been completed with sustainability plans. https://www.gbif.org/document/82277/capacity-self-assessment-guidelines-for-national-biodiversity-information-facilities (EN) https://www.gbif.org/document/82782/auto-evaluation-des-capacites-pour-les-systemes-nationaux-dinformation-sur-la-biodiversite (FR) **(Final report milestone)**	YES	The questionnaire was completed by GroundTruth in conjunction with the ISSEDD (project lead) and MadBIF.	See e-mail to BID dated 18 April 2019

All uses of the mobilized data have been documented **(Final report milestone)**	YES	Due to the elaborate data extraction process, the mobilized data have not yet been extensively used, but the existing data sets and new data (collected through voluntary sampling) will form the basis for future on-going student research projects and submitted research proposals which are aimed at developing local ecosystem health metrics/indices amongst other objectives. Planned student projects will be undertaken in collaboration with and under the supervision of experts from South Africa as well as, the broader AFRESH network and other international partners for continued sustainability. Already submitted reserach proposals (Appendix 2) will involve GBIF project partners and will utilise the data sets developed in this project. Conversation have been held with Nancy Job of SANBI regarding the use of our data for the next round of IUCN Red Listing (over the next 5 years) to be focused on freshwater invertebrates in SADC– the groups already earmarked for review will include the EPT taxa. Our data is the only data of its kind for the Indian Ocean Region in SADC – so will be valuable in informing the process. Project co-Lead Dr Vere Ross-Gillespie has already been engaged on the matter and will be liaising with the Red List team going forward.	See Appendix 2 Nancy Job (SANBI) Pers. Comm. NJob@sanbi.org.za
Best practices and lessons learned have been documented **(Final report milestone)**	YES	Project management have documented lessons learned and identified best practice.	See Appendix 5

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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. In the event of unexpected delay, please provide detailed explanatory notes and indicate planned completion date. Add as many rows as needed.

Deliverable	Related activity	Completed ? Yes/No	Explanatory notes	Sources of verification
Conference and networking meeting for freshwater aquatic scientists and students working in Africa to share knowledge; and to gather information related to the Indian Ocean Islands, which is vital to this project.	AFRESH.IO Conference/ workshop	YES - Dates (16-20th July 2018)	Name change to AFRESH.IO; 25 attendees attended the conference/workshop. Attendees included project partners (including experts for the tackled organism groups), key personnel and students. The focus of the conference/workshop was on networking with key personnel that can be trained to train others. This included training students that can be involved with future AFRESH activities, as well as long term monitoring research projects.	http://www.gbif.org/event/4JkZLIO5GM0iaoyaYo80SQ/gbif-african-freshwater-indian-ocean-afreshio-national-workshop
Training of project partners, TBA alumni, students, researchers and conference delegates from the Indian Ocean Islands in the various indices and citizen science tools available to assess river health and aquatic ecosystems.	Training at AFRESH.IO	YES Dates (16-20th July 2018)	Training was held at the AFRESH.IO workshop in Madagascar. 16 people were trained from the region, and an additional 9 international delegates were trained.	AFRESH.IO Workshop training material https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf https://www.gbif.org/event/4JkZLIO5GM0iaoyaYo80SQ/gbif-african-freshwater-indian-ocean-afreshio-national-workshop
Training and assistance with the collation, digitisation and uploading of data that is mobilised over the course of the project to GBIF and an additional online information platform - the Freshwater Information Platform (FIP).	Upload Indian Ocean Island data to FIP/GBIF	YES – Focussed session during (16-20th July 2018) and ad-hoc post the workshop up until March 2019	A dedicated session/with training was held at the AFRESH.IO workshop focusing on uploading of data and publishing. A workflow for data handling was established. Data sets have been compiled, collated digitised and uploaded.	See Appendix 1. AFRESH.IO training material – specifically Session 17th July 14:00 – Data publishing_ASK.pdf https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf

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Verification and quality control of all data mobilised during the course of the project.	Quality control of data	YES – Dates March 2019 but quality control /verification of data commenced from March 2018 and will be ongoing as several odd errors have appeared on the GBIF site	Data sets have been compiled, collated and verified. Taxonomic experts in respective fields have checked/verified species level data and distribution records. Data sets were error checked using Open Refine, Coordinates were error checked using tools from the GBIF Workshop 1 (INfo XY and Google Earth). Species names have been verified by taxonomists and digitisers using Global Names Resolver and expert knowledge.	See Appendix 4 and verified data sets.
Collate, digitise and upload existing EPT and diatom data housed in museums for the region	Mobilisation of existing data	YES - and ongoing Data sets comprising 5607 records for EPT taxa and Diatoms have been published. Data sets cover historical records from literature and museum specimens. The data sets will be added to with new records emanating from recent sampling in the region (post the AFRESH workshop) and planned future projects –	Training covered the collation, digitising and uploading of existing EPT and diatom data. Project partners then collated data from literature records and museum specimens. Historical EPT and Diatom data from literature and museum specimens from the Museum National d'Histoire Naturelle (MNHN) were collaboratively collated using Google sheets, while the CMZL prepared their museum data independently	https://www.gbif.org/dataset/fb6835d0-b72e-464e-b49a-b69e5b9cc0b6 https://www.gbif.org/dataset/42ac1433-d581-4480-8336-0078141a3ca3 - See Appendix 4 See Appendix 2 for ongoing work
Use data generated during the GBIF project to establish the basis for a long-term monitoring project with TBA, CNRE and the University of Toamasina, that can be used to generate research articles or inform policy - This is in line with the national priority of preservation of the environment and ties in well with the recently published IUCN freshwater report for Madagascar.	Long-term monitoring project	YES - completion date March 2019 but also ongoing	A proposal for the long-term monitoring research project was mind-mapped and formalised at the AFRESH.IO workshop together with project partners during the workshop. This included a water quality and aquatic ecosystem health assessment component. Future student projects will focus on the development of metrics/indices (including the potential for a diatom tool) for the region. These tools/metrics/indices will be based on the historical data sets published through the course of the GBIF project.	See Appendix 1. AFRESH.IO training material – specifically Long term freshwater monitoring proposal AFRESHIO.xmind https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf See Appendices 2 and 3 Nancy Job (SANBI) Pers. Comm. NJob@sanbi.org.za

			Conversation have been held with Nancy Job of SANBI regarding the use of our data for the next round of IUCN Red Listing (over the next 5 years) to be focused on freshwater invertebrates in SADC – the groups already earmarked for review will include the EPT taxa. Our data is the only data of its kind for the Indian Ocean Region in SADC – so will be valuable in infomring the process. Project co-Lead Dr Vere Ross-Gillespie has already been engaged on the matter and will be liaising with the Red List team going forward.	
Ensuring that data generated for the Indian Ocean Islands is made freely available, accessible and usable by the public - in line with the national priority of open data.	Open Data	Completion date March 2019 but also ongoing	Data will be continuously updated. Metadata to the datasets are freely available at the Freshwater Metadatabase and will be published as open access article in the Freshwater Metadata Journal. All occurrence data are available open access through GBIF.	https://www.gbif.org/dataset/fb6835d0-b72e-464e-b49a-b69e5b9cc0b6 https://www.gbif.org/dataset/42ac1433-d581-4480-8336-0078141a3ca3 - See Appendix 4
GBIF BID AFRESH.IO Freshwater Citizen Science Event		YES - and ongoing	Following the workshop a number of student volunteers attended the coordinated voluntary sampling event under the supervision of University lecturers. The first independently collected miniSASS samples for Madagascar were uploaded during this voluntary sampling effort and in some cases are forming the basis for freshwater training in semester courses and also student projects. Through this voluntary sampling event and ongoing citizen science using miniSASS the aim is to collect and generate new distribution records of EPT taxa, it is hoped that participation will help to raise awareness of freshwater biodiversity and its importance within the region.	https://www.gbif.org/event/3pX4wUwsNW8q48g4weYGO2/gbif-bid-afreshio-freshwater-citizen-science-event See https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf - specifically GBIF Citizen Science Event E-mail.pdf and GBIF Citizen Science Event Details.pdf in the folder Citizen Science Resources within the folder Resources Used/Presented See also Appendix 3

3.4. Datasets published on GBIF.org

Refer to the table in section 2.4 "Biodiversity data mobilization plan" of your BID full proposal. If the dataset is not yet published, please indicate the name of the institution that is expected to host the data when published in the column "DOI or URL/Planned hosting institution". Add as many rows as needed.

Dataset title	Publishing institution	DOI or URL/Planned hosting institution	Date/expected date of publication	Explanatory notes
IO-Historic Freshwater insect taxa: Existing data for Ephemeroptera, Plecoptera and Trichoptera taxa for the Indian Ocean region contained currently in key institutions and Museums as well as extracted from literature	GroundTruth/ BOKU (through BioFresh)	BOKU / FIP https://www.gbif.org/dataset/fb6835d0-b72e-464e-b49a-b69e5b9cc0b6 metadata are available at: http://data.freshwaterbiodiversity.eu/metadb/bf_mdb_view.php?entryID=FAI_1 and will be published in the Freshwater Metadata Journal	First published 30 May 2018 (153 Occurrences) Updated 26 August 2019. Additional occurrences were added to make a total of 1004 occurrence records for the dataset. Coordinates & Taxonomy checked and updated where necessary. The dataset will be added to over time with future projects.	Several sources of data in museums/institutions were identified & the status/quantity etc. of the data were evaluated. Literature searches have been conducted. Templates for capturing the data were added to Google Spreadsheets for all partners to access and contribute to: https://docs.google.com/spreadsheets/d/1AFIzo398CXrKLIR6GNvb3Y0_YCI8837In3rbZAWpyZY/edit#gid=180423681 Data citations have been changed to include main data providing personnel/institutions. A data set, comprising information for Ephemeroptera Plecoptera and Trichoptera from the Indian Ocean Islands from the following institutions has been published: NMPC (National Museum Prague), CBGP (Centre de Biologie pour la Gestion des Populations, Montferrier), MNHN (Muséum National d'Histoire Naturelle), INHS (Illinois Natural History Survey), USNM (United States National Museum of Natural History, Smithsonian Institute), ZMUB (Museum of Zoology, University of Bergen), NRM (Swedish Museum of Natural History), NHM (Natural History Museum Vienna), OPC (Olah Private Collection, Debreceen under protection of HNHM), ZIN (Zoological Institute, Cantonal Museum of Zoology-Lausanne (CMZL), Institut de Recherche pour le Developpement (IRD), Russian Academy of Sciences) and AM (Albany Museum).
Aquatic insects from the Indian Ocean Islands	Cantonal Museum Zoology Lausanne	GBIF Suisse. https://www.gbif.org/project/PTXkKWR6QoECgQy6leacM/the-forgotten-african-islands-addressing-the-	While the data were verified, quality assured and two subsets sent to GBIF Suisse for publication in January and February 2019 respectively, delays in publishing were due to the adoption of the publication table to make the project identifier visible with	This dataset comprises species occurrence data primarily for Ephemeroptera but also some Plecoptera from historical museum records curated in the Cantonal Museum Zoology Lausanne's collection. For explanations regarding delays see Appendix 4

		gap-in-freshwater-biodiversity-knowledge-for-the-indian-ocean-islands#datasets https://www.gbif.org/occurrence/download/0006580-190813142620410	the occurrences as requested by GBIF.org, a step that ensures consistency with the information on the project metadata page. Using a novel workaround this dataset was published on the 28 August 2019. 4309 records comprise this dataset and are currently in conformity with the GBIF Suisse data schema.	
IO-Historic Diatom Data Existing data for Diatom taxa for the Indian Ocean region contained currently in key institutions and Museums	GroundTruth/ NWU BOKU (through BioFresh)	BOKU / FIP https://www.gbif.org/dataset/42ac1433-d581-4480-8336-0078141a3ca3 Metadata will be updated and will also be published in the Freshwater Metadata Journal	First published 28 March 2019 (333 Occurrence Records added) Metadata were updated in April 2019 and again on 26 August 2019. Coordinates and taxonomy were updated	This data set comprises species occurrences recorded from Literature and collated by the North West University (NWU). It will be added to over time.
IO-Recent Freshwater EPT taxa: Newly collected data have been captured/digitised as a result of the project	GroundTruth/ ISSEDD/ BOKU to be confirmed	BOKU / FIP	Dec 2019 – Ongoing with modifications additions to extend beyond life of GBIF project	Following co-ordinated voluntary sampling efforts in the region and on-going student projects many of the samples are still being identified by project partners (expert taxonomists Wolfram Graf, Michel Sartori and Jonathan Taylor) and will be collated to form this dataset once the identifications are complete. Initially this data set will comprise only a few occurrence records but with time and contributions from planned future research and student projects it will expand. Data will continue to be added to this data set even after the GBIF project has terminated – this will be achieved through long-term monitoring research projects to be established with TBA, linkages to other research projects (African Insect Atlas), citizen science involvement and other projects in the region
IO-Recent Diatom Data	GroundTruth/ BOKU/NWU to be confirmed	BOKU / FIP	Dec 2019 – Ongoing with modifications additions to extend beyond life of GBIF project	Diatom data was collected during the AFRESH.IO workshop as part of training but also as part of citizen science voluntary sampling efforts. Many of the samples are still being identified by Jonathan Taylor (NWU) and will be collated to form this data set once analyses are complete. The dataset will continue to be added to over time and with planned future research projects and student projects.

3.5. Examples of use of biodiversity data available through GBIF

Data mobilised through the BID programme, ultimately, should guide natural resource conservation and management policy. We require you to report on how you have integrated these data into these policy-making processes. You may want to refer to the section 2.5 "Plan to support the integration of biodiversity information into policy and decision-making process" of your original proposal as a reminder of your original commitments.

As part of that process, we request you to provide us with a summary of how you have used these data within the decision-making process and we have included some guiding questions below to help with that process. Please note that if your dataset has been combined with other datasets in analyses that guide the decision-making process, then this should be recorded too.

Description

Has your project been successful in integrating data within the policy-making process?

Where did the demand for these data come from?

If yes, which policies have been developed using your data?

If no, what were some of the challenges you faced in getting your data into those processes?

Did you have a biodiversity data integration plan from the beginning of your project? If so, did you have to adapt your plan as the project progressed and why did you have to make those alterations?

In what format are your data being used i.e. what were the analyses, if any, that you needed to perform on the data to ensure that they was in a format accessible to policy-makers?

What level of communication has there been with the relevant policy stakeholders i.e. by which means? With what regularity? And, how critical have these interactions been for the development policy-relevant analyses?

What additional support (resources, tools, network, training) would be needed for your project to ensure the flow of information from mobilisation to decision-making?

How would you improve on your own processes in the future to improve data integration in the future?

Data may serve other purposes other than for policy-making and these are as valuable. How was your data used for other purposes e.g. development of training materials, scientific publications, communication activities etc?

Although our project data has not yet influenced or been used in policy and decision-making in Madagascar or elsewhere, our intention from the outset of the project was to highlight the gaps in species information about freshwater taxa which are fundamental to the ecology of freshwater ecosystems, and which directly influences the overall health and water quality of these systems. Thus, the demand for this type of data stems from a need to a) establish a baseline for EPT taxa and diatoms in rivers within Madagascar and the Indian Ocean Region, since there has been little or no record of such data up to now, apart from some collection efforts in the 1950's and 60's; and b) use this baseline data to monitor river health and water quality in Madagascar, and thus develop a metric/index for river quality. Such a metric/index would feed into the IWRM (Integrated Water Resource Monitoring) program as well as in the Master basin planning – as part of ANDEA (National Water and Sanitation Authority), the government agency in Madagascar; and also, the National Water and Sanitation Fund (FNEA), which finances the conservation, mobilization and protection of water quality. This would then inform other agencies such as the Ministry of Water, JIRAMA, SOREA and Commune Service Providers. The Ministry of Water is responsible for the implementation of national WSS (water, sanitation and supply services) and as such the aforementioned aspects would greatly assist them in managing freshwater resources in the region.

It is hoped that our data and collective efforts from the BID project (training, networking, future research proposals/planned projects) can contribute towards the Aichi Targets focusing on the conservation of freshwater habitats and species in Madagascar:

These being:

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society:

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use:

- Strategic objective 6: By 2025, all exploited fish stocks and other living marine and freshwater / brackish resources are valued and managed in a sustainable manner and destructive harvesting practices are eliminated

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity:

- Strategic objective 14: In 2025, terrestrial ecosystems including forests, marine and coastal, freshwater-brackish including mangroves and lentic environments that provide essential services, especially water supply and those contributing to health, livelihoods and human well-being are protected and restored; Equitable access to ecosystem services is ensured for all, taking into account the gender approach
- Strategic objective 15: By 2025, the adaptive capacity of ecosystems and the contribution of terrestrial, freshwater and marine biodiversity to mitigation and adaptation to climate change are strengthened, including the restoration of at least 15% of degraded ecosystems and the fight against desertification

Despite the focus on threatened freshwater species of Madagascar, in the recent IUCN document edited by Máiz-Tomé, L., Sayer, C. and Darwall (2018) 'The status and distribution of freshwater biodiversity in Madagascar and the Indian Ocean islands hotspot' the only invertebrate group highlighted as important indicators of ecosystem health, are the odonates (i.e. dragonflies and damselflies). It should be emphasized here, that although these two suborders are important as indicators for riparian health and diversity, they do not give an in-depth indication of the status of river health in terms of water quality. Thus, it is crucial that taxa such as the EPT (Ephemeroptera, Plecoptera and Trichoptera) and diatoms, the focal groups of this project, are included as indicator species, since together, they can be used as reliable indicators to assess river health, as part of an integrated water quality assessment. Fortunately, and this regard, contact was made during the course of the project with the new freshwater programmes director, Nancy Job, at the South African National Biodiversity Institute (SANBI) who will be facilitating the next round of IUCN Red Listing (over the next 5 years) to be focused on freshwater invertebrates in SADC. Given that the data emanating from our BID project is the only data of its kind for EPT taxa in the Indian Ocean Region in SADC it will be valuable (even in its current form) for informing the process. Project co-Lead Dr Vere Ross-Gillespie has already been engaged on the matter and will be liaising with the Red List team going forward.

An important reality is that for most of Africa the species level data for freshwater invertebrates does not exist and such data still needs to be collected through expeditions, focused sampling efforts or innovative means (e.g. citizen science).

The data sets published as part of this BID project and the new data (collected through voluntary sampling and student projects will also form the basis for future on-going student research projects and submitted research proposals which are aimed at developing local ecosystem health metrics/indices amongst other objectives. Planned student projects will be undertaken in collaboration with and under the supervision of experts from South Africa as well as, the broader AFRESH network and other international partners for continued sustainability.

Recommendations stemming from this project for which certain actions have already been initiated include

- **The need to promote and advocate voluntary certification schemes such as Water Stewardship Partnerships**. To this end, representatives of local BID project partners in Madagascar (ISSEDD – Univeristy of Toamasina, the University of Antananarivo and CNRE) will be invited to attend the AFRESH 2 meeting planned for 2019 as part of the EU funded AfriAlliance Ubuntu Action Group (*https://afrialliance.org/action-*

groups/) project. The focus of this project and AFRESH 2 will be *"The Creation, establishment and enhancement of community knowledge centres to bridge the gap between the local community and policy makers'. In the project seeks to strengthen a community of practice which is concerned with citizen science and community mobilization for wise water management and water stewardship*."

- **Survey a selection of newly identified freshwater KBA's and protected areas in Madagascar.** All surveys could be co-led by local partners. This will be communicated to CEPF to form the basis for a future project.
- **Provide effective means for data management and increased access to information useful to the scientific community as well as to political and private decision-makers, at a regional level through the use of existing global platforms.**
- **Generate actionable data to support conservation efforts, evaluate threats to freshwater ecosystems and monitor threats of alien invasive species.** These elements have been incorporated into the proposal submitted to CEPF (see Appendix 2)
- **Initiate the process of establishing routine freshwater monitoring (using established metrics) at sentinel sites across the hotspot**. This has in some part been incorporated into the proposal submitted to CEPF (see Appendix 2) but will be a major focus of the AFRESH 2 workshop (planned as part of an EU funded AfriAlliance project commencing in 2019 – see first bullet point above)

Supporting materials

As part of our reporting, we request you to provide us with a copy of any materials highlighting data use on your dataset, either on its own or in combination with other datasets. This could be in the form of:

- Reports – governmental, ministerial, non-governmental organisations, international policy-making bodies
- Policy briefs
- Scientific publications
- Outputs from analyses that will be used in the future e.g. species distributions maps and other spatial analyses
- Education/communication materials

Please provide a valid dataset to the doi. Where the doi is not known, please state why.

Name of resource	Type of resource i.e. report, policy brief, scientific publication, analysis output, education materials, communication materials, other (please specify)	Dataset doi	Link to document or publication citation
Freshwater Invertebrate Red List update for Southern Africa	Regional Red List Assessment	NA – assessment is planned for the next 5 years	Planned for the next 5 years

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.

Full title	Organizing institution	Dates	Number of participants	Sources of verification
Internal meeting and knowledge dissemination session with GroundTruth staff	GroundTruth	Feb 2018 (completed)	5	http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands - full details have been added to the GBIF and GroundTruth websites
Key project partners Skype teleconference (separate teleconferences)	GroundTruth, ISSEDD, BOKU, NHM (London)	February 2018 (completed)	10 at different times	Unavailable
AFRESH.IO –training workshop	GroundTruth, ISSEDD, NHM, CMZL	16-20 July 2018	25	http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands - full details have been added to the GroundTruth website as of 31st May 2018 See Appendix 1 AFRESH.IO Workshop Attendance register and Agenda See also AFRESH.IO Workshop documentation including agenda, presentations, sessions and all material. – shared with all project partners following the workshop https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf
AFRESH.IO BID knowledge dissemination sessions (data mobilisation and data analysis)	GroundTruth, ISSEDD, BOKU	16-20 July 2018	25	http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands - full details were added to the GroundTruth websites as of 31st May

				2018. See Appendix 1. AFRESH.IO and AFRESH.IO training material – specifically Session 17th July 14:00 – Data publishing_ASK.pdf https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf
Coordinated voluntary sampling	GroundTruth, ISSEDD, Univeristy of Antananarivo	15-20 October 2018 – though some institutions conducted their own events at slightly different times	Approx. 20	https://www.gbif.org/event/3pX4wUwsNW8q48g4weYGO2/gbif-bid-afreshio-freshwater-citizen-science-event See https://drive.google.com/drive/u/0/folders/1qZ3DOUf-OGq8xymnLE1qbSvxquEmhZZf - specifically GBIF Citizen Science Event E-mail.pdf and GBIF Citizen Science Event Details.pdf in the folder Citizen Science Resources within the folder Resources Used/Presented See Appendix 3 – new miniSASS records for Madagascar as part of the event
Possible training session to be held during Tropical Biology Association course	TBA, GroundTruth, ISSEDD	2020 - Still to be confirmed	Approx. 25	Conversations have been had with TBA and unfortunately it was not possible to have the event in 2018 but it is still in the pipeline for future TBA courses – possibly 2019/2020.

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4. 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 4.1 'Explanatory Notes'.

Implementation period start date 01/10/17 and end date 31/12/18																
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	**Notes**
Planning	X	X	X	X	X				X					X		Completed
Mobilisation of existing data		X	X	X	X	X	X	X	X	X	X	X	X	X	X	Completed
BID capacity enhancement workshop – data mobilization and publication			X													Completed
Early progress evaluation & reporting			X	X												Completed
BID capacity enhancement workshop – data use					X											Completed
Mid-term evaluation & reporting								X	X							Completed
AFRESH.IO workshop										X						Completed 16-20 July 2018
Training										X						Completed 16-20 July 2018
Collection / mobilisation of new data										X	X	X	X	X	X	Collection Completed 16-20 July 2018 new data still being identified and mobilised – planned publication Dec 2019/Jan 2020
Quality control						X	X	X	X	X	X	X	X	X	X	Completed for published data sets and will be ongoing for new data sets
Long-term monitoring research project proposal					X	X				X	X			X	X	Completed proposal submitted to CEPF – Proposal still under review – See Appendix 2 and attached CEPF proposal
Upload data to FIP/GBIF						X	X	X	X	X	X	X	X	X	X	Completed for two data sets – with a delay on the last dataset to the first or second week of April 2019 see Appendix 4
Open data		X	X	X	X	X	X	X	X	X	X	X	X	X	X	Extended to cover entire project duration.
Final evaluation & reporting															X	Completed

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Evaluation period start date (01/01/2019) and end date (31/03/2019)				
Activity	1	2	3	**Notes**
Final financial and narrative reporting		X	X	Narrative report Completed – extension granted by GBIF on financial reporting to first week of April 2019
Long-term monitoring research project proposal	X	X		Completed – proposal submitted to CEPF - Proposal still under review – See Appendix 2 and attached CEPF proposal.

4.1. Explanatory notes:

Budget expenditure will be submitted together with this final report for the consideration of GBIF. No changes have been made to other activities in the project in terms of timing and they are as per the mid-term progress report. Notes on the status of activities is provided below.

Mobilisation of existing data – Efforts were focused on the mobilisation of existing historical data rather than on trying to mobilise new data to be collected from voluntary sampling (added extra as part of the project). Existing data (such as the collections in the NHM, Swiss Cantonal Museum Zoology Lausanne, Albany, Muséum National d'Histoire Naturelle, A&M and elsewhere) have been mobilised and published. The first dataset, comprising Ephemeroptera Trichoptera and Plecoptera records (153 occurrence records), from historical museum records was published as of the 31st of May 2018. This dataset was updated on the 28 March 2019 with an additional dataset, comprising historical records of Trichoptera, Plecoptera, Ephemeroptera captured from literature (1012 occurrence records). A third dataset comprising diatom species occurrences captured from literature records (333 occurrence records) has been published as of 28th of March 2019 and will be added to. A fourth and last dataset has been prepared focussing on Ephemeroptera and Plecoptera from historical museum records curated by the Cantonal Museum Zoology Lausanne (4418) records – this data set is ready for publishing but there have been some delays communicated with GBIF/BID (see Appendix 4) and the dataset will be published in the first or second week of April.

AFRESH.IO Workshop – The AFRESH.IO workshop was held at Madagascar Biodiversity Centre (Madagascar, Antananarivo City) on the 16th -20th July 2018, and all the material used/presented during the workshop has been circulated and shared.

Training –Training in the application of citizen science tools for freshwater monitoring, identification of EPT taxa and diatoms, coincided with the AFRESH.IO workshop. Sampling and training materials were also donated to the University of Antananarivo and the University of Toamasina to facilitate future student projects/freshwater ecological research and to foster citizen science in the region.

Collection / Mobilisation of new data - The collection and mobilisation of new data coincided with the AFRESH.IO workshop, where training surrounding specimen collection was offered but training sessions also extended beyond the AFRESH.IO workshop. It was envisaged that the collection and mobilisation of new data was undertaken within the stipulated project time-frame but that is also extended beyond the life of the GBIF project. Data collected as part of the AFRESH.IO workshop are still being identified and analysed by project partner taxonomists. It is hoped this data will be available for publishing as new species occurrences at the end of 2019/Early

2020. The true value of this data set will become apparent with time, as project partners continue to contribute data through long-term monitoring and citizen science efforts. Delegates who attended the AFRESH.IO workshop were trained in the collection of EPT taxa and diatoms and also participated in a co-ordinated voluntary sampling effort to collect new data for the Indian Ocean Region and Madagascar in particular. New miniSASS records have been recorded for the first time in Madagascar as a result of the coordinated voluntary event and ISSEDD as well as the University of Antananarivo have retained the miniSASS samples they collected for future identification and analyses – following which the species occurrences will be added to the new dataset for publishing.

Quality control – The quality control period covered the entire project period and included the revision of all mobilised data collated and published.

Long-term monitoring research proposal - The AFRESH.IO workshop was used to formalise long-term monitoring activities and project partner roles, which were captured in the form of a mind map to be used for future proposals by project partners. Furthermore, following the workshop project partners used the mind map and discussed ideas to formulate a 5 research/monitoring proposal which has been submitted to CEPF and is currently under review. Two additional proposal were submitted to The Darwin Initiative and WIOSAP, resepectively to request funding to implement some of the long-term monitoring ideas for the IOI. These projects if accepted will allow for long term monitoring programs to be formalised and take place in the region – as such they will also be used to generate more species occurrence data.

Upload data to FIP/GBIF – We have uploaded all data, comprising EPT and diatom occurrences from museum records and the scientific literature. Datasets were updated with additional records extracted from various institutions for other taxa, and will be updated for newly captured records (e.g. from the field collection in July 2018), when data are received, collated and verified from ongoing citizen science efforts.

Water quality and aquatic ecosystem health assessment - This component was removed from the Gantt chart and the deliverables table as per our Early Progress report. Instead, this component was incorporated into the development and formalisation of a long-term monitoring research proposal which charts the way forward for a national assessment to be undertaken. It highlights/quantifies gaps and draws on all data that has been mobilized during the GBIF project. A long term research project (5 Years) has been submitted to the CEPF and is currently under review. Several student university projects have been planned between partners in Madagascar and South Africa (ISSEDD/GroundTruth and NWU)

Diatom Tool - This component was removed from the Gantt chart and the deliverables table as per our early Progress Report. Instead, this component of the original project was carefully incorporated into the development and formalisation of a long-term monitoring research proposal. Budget allocations to this activity have also been reallocated accordingly. Data were unavailable to conduct a preliminary analysis towards developing the diatom assessment/biomonitoring tool as a beta version, based on genus level occurrence but this component is planned to coincide with a long term research project (5 Years) that has been submitted to the CEPF and is currently under review. Furthermore, data required to develop this tool will be collected through several student university projects that have been planned between partners in Madagascar and South Africa (ISSEDD/GroundTruth and NWU). Hopefully these will be ongoing projects

Open Data - The provision of open-access data has remained a priority throughout the project and it is applied to all published data.

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5. 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)

Students and project partners in Madagascar and elsewhere have, through the course of this BID project, been trained in a) the preparation, collation and publishing of data through GBIF, b) the collection and preservation techniques of aquatic insect and diatom samples as well as c) citizen science tools for freshwater monitoring. Furthermore, they have had opportunities to network with and learn from world renowned taxonomists and researchers whilst being the recipients of new sampling equipment (donated by project partners GroundTruth) and training materials (including identification guides developed by project partners CMZL). As such, partners and students in Madagascar have been empowered to continue to not only collect and generate new freshwater sampling data for the region but also to collate and publish species occurrence data relevant to student and planned long-term research projects through MadBIF and other partner institutions.

The focus on citizen science tools and the hosting of the coordinated voluntary sampling event in the region (as part of the BID project) has had the result of introducing the concept of citizen science to the broader community and also encouraging regular, and long-term monitoring by community members, university students, school learners and researchers. It is hoped that with time such monitoring will create a stewardship ethos within Madagascan river systems, which can increase the sustainability of this project and its outcomes whilst contributing to the conservation of these important ecosystems in the region. Planned student and research project proposal (Appendix 2) will help to keep momentum going in this area.

The collection of new independent miniSASS samples by students, project partners and researchers through voluntary sampling efforts and current/future projects (see Appendix 3) is testament to this stewardship process already occurring. The miniSASS samples have been retained and preserved so that identification can take place in the future and eventually additional species occurrence data generated for the region. Students trained during the current BID project will hopefully be mentored through ongoing communication (with project partners) and future opportunities for networking such that they can be made the champions of future long-term monitoring programmes in the region and planned research projects. This BID project has been used to seek additional funding and support from multiple external sources (Appendix 2), some of which have already been successfully awarded. Opportunities thus exist for students at ISSEDD (project lead institute) and the University of Antananarivo (project partner institute) to be a part of the proposed projects but also to develop new projects in the region based on the outcomes/experiences and training offered by the current BID project. These students will also be afforded the opportunity to have joint supervision from South African, Austrian, Madagascan, Swiss and British experts who have been involved in the current BID project.

New partnerships have also been developed with Owen Griffiths, Steve Goodman and several leading taxonomists which will support future planned projects in the region, while existing partnerships have been strengthened for long-term networking. Data published during this project is being maintained at the highest level by BOKU and GBIF Suisse, thus ensuring sustainability of published data.

6. Beneficiaries/affiliated entities and other cooperation

6.1. 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.

Our relationships with partners and collaborators remain excellent – there has been no change since earlier progress report and mid-term report. We had increased communication (via e-mail and Skype) with our GBIF Mentor during the middle of the project (especially the workshop) when his assistance was required. Since then there has been limited communication with the mentor as his assistance has not been required as much.

During the life of the project strong links were formed between project partners and external experts which will form the basis for new working relationships going forward. Through the project partnerships formed in this project a research proposal was submitted focusing on river restoration in Mauritius – this 3 to 4 year project has been accepted and will allow for these working partnerships to be strengthened further and also for species occurrence data to be generated for Mauritius and the region.

6.2. 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 We have established significant links with the African Insect Atlas (as mentioned in the early progress report). Since then, some further developments have taken place:

We have been in close communication with Owen Griffiths, who is the Joint Managing Director of Bioculture: Caring for life, based in Mauritius, and is also very involved with non-marine mollusc research in Madagascar and also actively engaged in conservation and collection projects on the Madagascar island. Owen Griffiths is also connected with staff of the Tsimbazaza Museum in Tana, Madagascar. Owen Griffiths is very keen to be involved in and will provide a very useful link for future research and student projects in the region

We have also been in communication with Steve Goodman, who is a renowned ecologist working with international conservation groups and local biologists in Madagascar that record and preserve ecosystems increasingly threatened by rapid deforestation and population growth. He is very involved with conducting biological surveys and creating inventories to improve the scientific knowledge and research in Madagascar and had also founded the Ecological Training Program (ETP) that mentors, trains, and prepares local Malagasy biologists in vital conservation issues.

Our intention is to involve Owen Griffiths and Steve Goodman as external exoerts in future student and research projects as as well as in the planned establishment of a long-term monitoring programme (see Appendix 2).

We have also initiated contact with Nancy Job, a freshwater ecologist at SANBI, in order to kickstart the registration of GroundTruth with SANBI as a data publishing institution and for future collaborations including the Freshwater Invertbreate priorities for red listing assessment of the next 5 years.

Proposals written collbaoratvely by members of this BID project have been submitted funding oirganisations to obtain additional funding to extend/build on the GBIF project . These include proposals to CEPF, The Darwin Initiative and WIOSAP, to request funding to implement some of the long-term monitoring ideas for the IOI which we have already conceived, but also to strengthen some of the partnerships already formed through this project. An additional collaborative proposal developed by project members of the BID project (REEF and GroundTruth) has been submitted to the Indian Ocean

Commission and has been accepted. This project will focus on the resotoration of the Jacotet River in Mauritius and will allow for more occurrence data to be generated for the region (data will be added to the datasets formed in this BID project.

One of our objectives has been to foster collaboration with a wide range of stakeholders and partners, engage with catchment stakeholders using established citizen science tools, multi-stakeholder catchment wide meetings and workshops. To this end, our project lead in Madagascar, Dr Miasa Eustache, has met with several leading taxonomists, Brian Fisher (BID project leader for the African Insect Atlas Project), Dr Helen Barber-James (Albany Museum, Grahamstown), KD Dijkstra (Naturalis Centre, Netherlands) to establish future networking possibilities, to strengthen the AFRESH network and AFRESH involvement of the Indian Ocean Islands region. Dr Eustache has negotiated other meetings with entomological teams from Ankatso University (Antananarivo, Madagascar), Mahajanga University (West of Madagascar) and from Toliara IHSM University (South of Madagascar), to expand our future long-term field activities.

As a project team we were hoping GBIF would consider funding a second phase of the work we have started in the Indian Ocean Islands. This is because we are continuing to gain momentum with future work possibilities and are only scratching the surface of mobilising freshwater species occurrence data for the region. Furthermore, funding for a second phase could provide the catalyst to work more closely with the African Insect Atlas Project and the Madagascar Biodiversity Centre to ensure coordinated efforts towards ensuring freshwater insects are properly represented in the region. While links were formed with the African insect Atlas project during the life of the BID project – we would like to be able to work and plan activities with them from the outset of a project to optimise contributions, skills and outputs.

7. Visibility

Please refer to the BID guidelines.

7.1. Visibility of the BID project

How is the visibility of your BID project being ensured?

Short summary

The GroundTruth website has been updated to host a separate linked page to the GBIF project and a brief blurb of the project and details of the AFRESH workshop and knowledge dissemination activities. We have also uploaded the link to our published dataset which has been submitted to GBIF. Additionally, the project is already a part of the Freshwater Information Platform. It is linked to the “Freshwater Projects & Networks” section. The pages have been updated during the life of project and will be updated again following the closure of the project.

The BID project has been the foundation for several research project funding applications which have been submitted (See Appendix 2). The citizen science work /events conducted in Madagascar as part of the BID project have been shared via the October 2018 miniSASS newsletter and in other national workshops/events (e.g. the recent Citizen Science Toolbox Launch in South Africa- http://www.wrc.org.za/event/a-dialogue-launch-of-the-citizens-science-water-quality-monitoring-tool-box-for-sa-sadc/)

ISSEDD had produced a similar page on the ISSEDD institution website. Several researches and PhD students will visit these sites.

Sources of verification

Link to GroundTruth Website with updated progress on the project and links to the published data http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands

Update to GBIF Website (regarding project information & events) will be provided shortly with new article regarding GBIF Project

Link to FIP website from where it is linked to the project:

http://www.freshwaterplatform.eu/index.php/networks-projects.html

7.2. Visibility of the EU contribution

How is the visibility of the EU contribution being ensured within your project implementation?

Short summary

All activities within the project, especially knowledge dissemination sessions and workshops/conferences (e.g. AFRESH.IO), have specified that the project has received European Union funding. Additionally, any publication or document (including training materials, workshop notes/agendas) compiled by the project team in whatever form and by whatever medium, including the internet had included the following statement: "This project is funded by the European Union". The words "European Union" had been hyperlinked to http://europa.eu. That attribution had been also accompanied by the EU flag. Both GBIF and the BID programme had been acknowledged.

A website page and link to the GBIF project – indicating all project partners and funding sources has been added on the GroundTruth company website and has been be added to the Freshwater Information Platform website.

Sources of verification

Link to GroundTruth Website with new article blurb regarding GBIF Project - http://www.groundtruth.co.za/research-projects/2018/1/29/the-forgotten-african-islands

Link to FIP website showing EU contribution in relation to the GBIF project Insert link to FIP here

Signature _____

Name of the contact person for the BID Project: Dr Miasa Eustache and Dr Vere Ross-Gillespie

Date report sent by email in Word format to bid@gbif.org for pre-approval: 30 March 2019

Date report sent by post to GBIF Secretariat: _____

Appendix 1 AFRESH IO Attendance register and Programme

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BID GBIF

GBIF WORKSHOP – MADAGASCAR BIODIVERSITY CENTRE – 16-20TH JULY 2018

July 15th	Most Delegates Arrive	Miasa Balsama and Vere setup venue	Rough time indication
July 16th	Last arrivals		
	Registration	Gary/Vere	08:00-09:00
	Welcome	Vere	09:30
	Introduction of partners	All (5 mins each)	09:40
	Introduction to Madagascar	Miasa/Ony	10:40
	Biodiversity Centre & House Rules	Miasa/Balsama	
	Outline of workshop	Vere/Miasa	10:50
	Tea		**11:00**
	Introduction to AFRESH network	Ben/Lyndall	11:40
	GBIF project context	Vere	12:00
	Aims and Objectives of GBIF project	Vere	12:30
	Lunch		**13:00**
	GBIF Project Feedback to date	Vere	14:00
	Future role of partners / Time frames	Vere/Miasa	15:00
	Tea		**15:30**
	Discussion & questions	All	16:00 - 17:00
	Dinner		18:30

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July 17th	Intro to Freshwaters of IO – Indices used Mauritius, Madagascar	Kathy/ Ranalison/ Herizo	09:00
	Introduction to mayflies and stoneflies of Madagascar	Michel	10:00
	Intro to EPT taxa and their use/importance For ecosystem health and WQ monitoring with a focus on Trichoptera	Wolfram	11:00
	Tea		**12:00**
	Intro to diatoms and their use/importance For ecosystem health and WQ monitoring	Jonathan	12:40
	Lunch		**13:00**
	Data publishing/data requirements - covering aspects of GBIF Capacity Enhancement Workshop Dissemination session 1	Astrid - with inputs from Andry and Vere	14:00
	Intro to FIP, use of FIP integration to Project	Astrid	14:30
	FIP practical web session	Astrid	15:00
	Tea		**15:30**
	Visit to Tsimbazaza Zoo	All	16:00
	General Discussion	All	17:30
	Dinner		**18:30**

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July 18th	**Depart for Mid -Workshop field trip Maintsoanala**	All	**08:00/09:00**
	In-field: -Collection of miniSASS + Sampling techniques	All with supervision from: Vere Gary	11:00
	Demonstration/training in use of citizen science tools (Plank, Clarity Tube, Riparian Health Audit)	Vere/Gary	
	-Collection of diatoms / preservation	All with supervision from Jonathan	
	-In-field identification of EPT families	Michel/Ben/Lyndall/ Wolfram/Vere Vere/Gary	
	Packed Lunch		**13:30**
	Depart for Centre		**14:30/15:00**
	Tea		**17:00**
	Lab based ID's – practical session with identification (dissecting microscopes) perhaps a compound microscope for diatoms	Michel/Ben/Lyndall/ Wolfram/Vere /Jonathan	17:30
	Dinner		**18:30**

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July 19th	IOI mind map data gaps and possibilities/research priorities	All (Mind Map session)	09:00
	Planning long-term monitoring research proposal	Vere/Miasa and All	10:00
	Logistics planning – Coordinated Sampling, sample collection preservation, courier, ID	All (Mind Map Session)	10:30
	Tea		**11:00**
	miniSASS video demonstrating use (River walk)	Gary	11:30
	miniSASS practical web session and upload of results	Vere/Gary	11:50
	Lunch		**13:00**
	GBIF Data end use Workshop - Dissemination session 2	Dodo/ISSEDD	13:40
	Student/partner project feedback 1	Nadiee/ISSEDD	14:15
	Student/partner project feedback 2	Fideline/ISSEDD	14:25
	Student/partner project feedback 3	Tendry	14:35
	Student/partner project feedback 4	Sarobidy	14:45
	Student/partner project feedback 5	Dodo	14:55
	Tea		**15:05**
	Way forward	Open Session to all - ISSEDD and other	15:45
	Lab ID's/FIP/MiniSASS	All	16:00
	Dinner together at Le Toque		**19:00**

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July 20th	Visit to CNRE facilities	Herizo/Naina	09:00
	Workshop wrap up, hand-over of donated equipment	Vere/Miasa	11:00
	Close and Goodbyes	All	
	Tea		**11:30**
	Depart		**12:30**

Potential sessions which can be included if time permits:

- Ecoregions, river classification, PES EI ES and prioritization of ecological infrastructure
- Development of indices for water quality /ecosystem health in the Indian Ocean Islands

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Appendix 2 – Submitted CEPF proposal under review "Project Rationale Section"and Accepted Jacotet River Rehabilitation project Concept Note

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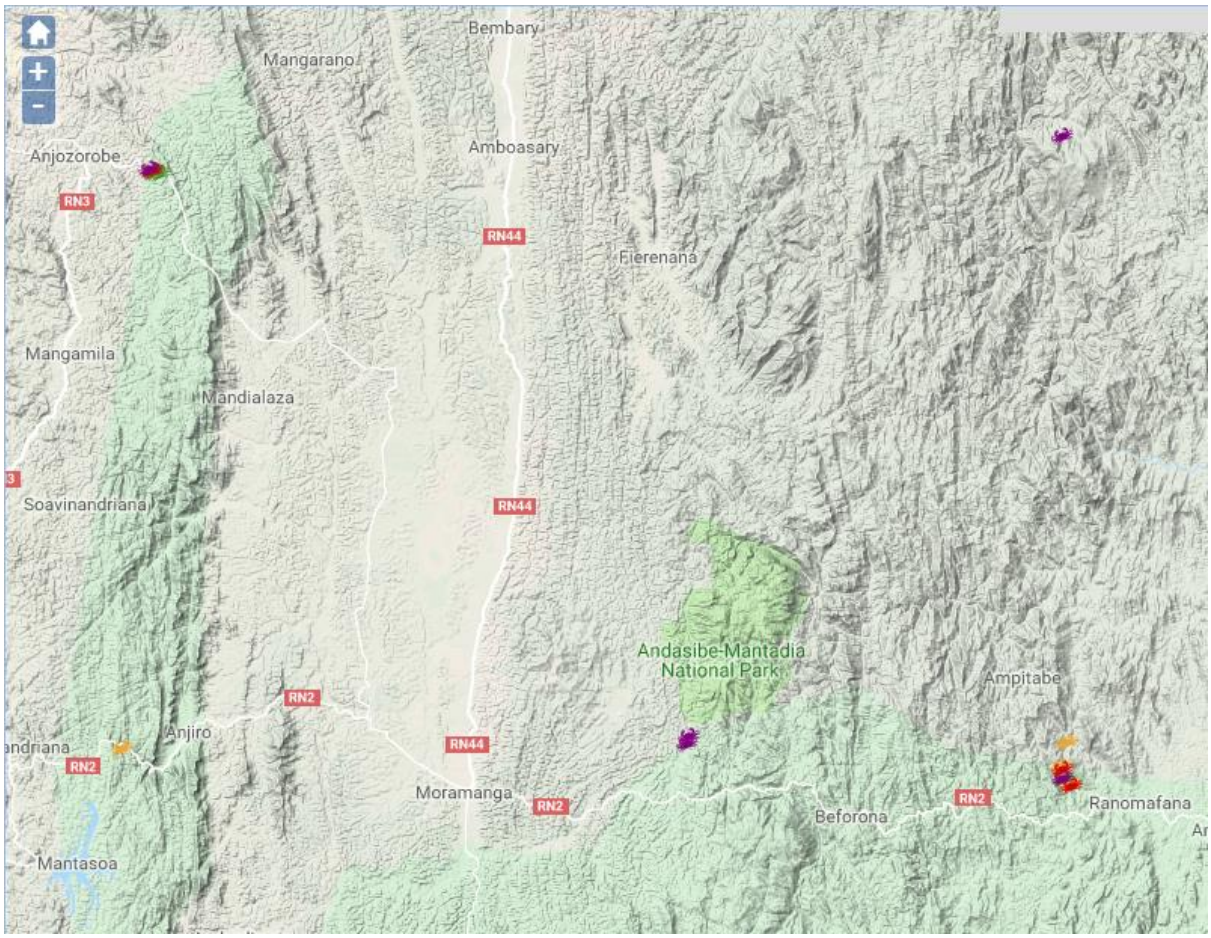
Appendix 3 – New miniSASS records for Madagascar

11 new miniSASS records for Madagascar obtained from independent student research projects and coordinated citizen science events following the AFRESH.IO workshop. An additional 6 records for Madagascar were collected by GroundTruth and BID project partners following the workshop as part of a collaborative research paper currently in preparation.



Please explore the map and data points for Madagascar further at http://www.minisass.org/en/map/

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Appendix 4 Swiss Canotnal Museum Zoology Lausanne (CMZL) GBIF Occurrence Data Set

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Appendix 5 Best Practice and Lessons Learned from BID-AF2017-0306-NAC

Best Practices and Lessons Learned from GBIF Project BID-AF2017-0306-NAC

- More frequent communication is needed in projects with multiple global partners – Skype meetings every two months is recommended
- Language barriers between project partners make projects more difficult to manage – more frequent skype meetings with the project mentor able to translate is recommended
- Working in 3rd world African countries requires patience and understanding, as processes and systems which we take for granted in 1st world countries are often non-existent (e.g. a stable fast internet connection)
- 3rd world African countries are some of the most biodiverse yet under documented/data depauperate countries in the world and thus GBIF must persevere to continue to have projects active in these countries
- Collaborative projects with Northern-Southern hemisphere links are very good for skills transfer and capacity building
- Involving university students in projects provides an excellent means for skills development & transfer and capacity building. Allowing exposure/networking with international experts and a chance to develop project ideas.
    - This project involved 7 Malagasy students who given the opportunity to present their research at the AFRESH.IO workshop
    - The students were exposed to new sampling methods and GroundTruth donated sampling equipment to the Universities of Antananarivo and Toamasina to strengthen freshwater research capacity
    - The Cantonal Museum Zoology Lausanne also prepared new illustrated guides to Mayfly Nymphs (Ephemeroptera) of the Indian Ocean Islands as part of the project and to assist students with identification. Hard copies of these guides were given to all delegates who attended the workshop.
    - The students had a large amount of one-on-one time with international experts in the field of freshwater Ecological Research.
    - Students were able to apply the new sampling techniques they had learned together with the project team
- Involving university students in projects provides an excellent means for skills development & transfer and capacity building. Allowing exposure/networking with international experts and a chance to develop project ideas.
- While GBIF does not fund new occurrence data to be sampled via expeditions – this remains a major problem in 3rd world developing countries for numerous taxa especially in Madagascar and especially for freshwater invertebrates. Perhaps GBIF could look at innovative ways in which projects can include data generation through sampling. Our project attempted to achieve this through using citizen science tools and volunteer coordinated sampling efforts where no project funds were used.
- We have only scratched the tip of the iceberg in terms of work to be done on freshwater invertebrates in the Indian Ocean Islands. New partnerships forged during the project have led to large research grant proposals having been written and submitted during the life of the project – one of which has been accepted (a collaborative River Restoration project in Mauritius) and will allow the next step to be taken in terms of freshwater ecological work in the region but also species occurrence data to be collected to augment the data sets developed during this project. Another large collaborative research proposal submitted during this project (CEPF) is still under review. If this CEPF project is accepted it will allow for

significant contributions to be made to the species occurrence data sets developed during this project for the region as well as a national monitoring system to be developed.

- We would hope that GBIF would consider extended funding for existing BID projects or consider another separate round of BID funded projects.
- In future an accounts manager will be included as part of the management team to handle all finances and financial reporting. In this project all financial reporting was handled by the project leaders with little help from financial officers.

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