External evaluation of BID programme

Final Report

DISCLAIMER

Csil

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF MAPS

LIST OF BOXES

LIST OF ABBREVIATIONS

ACP	African, Caribbean, and Pacific states
AFD	Agence Française de Développment
B4Life	Biodiversity for Life
BES-Net	Biodiversity and Ecosystem Services Network
BID	Biodiversity Information for Development
BID-C	Biodiversity Information Development research Centre
BIOFUND	Foundation for the Conservation of Biodiversity
BIOPAMA	Biodiversity and Protected Areas Management
CBD	Convention on Biological Diversity
CEPA	Conservation and Environment Protection Authority
CEPF	Critical Ecosystem Partnership Fund
CESP	Capacity Enhancement Support Programme
CMS	Convention of Migratory Species or Bonn Convention
CRC	Central Research Committee
CSIL	Centre for Industrial Studies
DEVCO	(Directorate General for) International Cooperation and Development
DNA	Deoxyribonucleir Acid
DOPA	Digital Observatory for Protected Areas
EC	European Commission
EQ	Evaluation Question
EU	European Union
EUR	Euro
FONDOCYT	National Fund for Innovation and Scientific and Technological Development
GBIF	Global Biodiversity Information Facility
IAS	Invasive and Alien Species
ICCB	International Congress for Conservation Biology
IFIs	International Financial Institutions
IFS	International Foundation for Science
INTPA	(Directorate-General for) International Partnerships

IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPT	Integrated Publishing Toolkit
IT	Information Technology
IUCN	International Union for Conservation of Nature
JRC	Joint Research Centre
KBAs	Key Biodiveristy Areas
LARSIC	Lagos State Science, Research and Innovation Council
LogFrame	Logical Framework
MoU	Memorandum of Understanding
NBSAP	National Biodiversity Strategies and Action Plan
NGO	Non-Governmental Organisation
NHMZ	Natural History Museum of Zimbabwe
NISSAP	National Invasive Species Strategy and Action Plan
NTFPs-EP	Non-Timber Forest Products – Exchange Programme
OBIS	Ocean Biodiversity Information System
PBIF	Pacific Biodiveristy Information Facility
PFP	Predator Free Pacific
PICTs	Pacific Island Countries and Territories
PNG	Papua New Guinea
PNGDRF	Sustainable Management of Forest Resources National Program
PRISMSS	Pacific Regional Invasive Species Management Support Service
PRSGF	Pastor Rice Small Grants Fund
Q&A	Question & Answer
RERC	Resilient Ecosystem Resilient Communities
SDGs	Sustainable Development Goals
SEP2D	Sud Expert Plantes Développement Durable Programme
SiB	Colombian GBIF node
SPREP	Secretariat of the Pacific Regional Environment Programme
TETFund	Tertiary Education Trust Fund
ToR	Terms of References

UN	United Nations
UNPD	United Nations Procurement Division
USA	United States of America
USAID	United States Agency for International Development
WolrdVeg	World Vegetable Center or Asian Vegetable Research and Development Center

EXECUTIVE SUMMARY

BACKGROUND

The **Biodiversity Information for Development Programme** (hereafter BID Programme) was launched in 2015 by the Global Biodiversity Information Facility (GBIF) to increase accessibility to biodiversity data and information in the sub-Saharan African, Caribbean and Pacific (ACP) regions. Overall, 107 projects - with an amount of € 4.2 million - were supported by this programme through two phases of implementation: 2015-2019 and 2020-2023. Through these projects, resources were used to finance a combination of the following type of activities: (i) digitisation of existing biodiversity data held by institutions located in ACP countries, or data concerning ACP countries but held by institutions located outside ACP countries , (ii) supporting data sharing of biodiversity data (iii) production of new biodiversity data in ACP regions/countries, (iv) enhance capacity of key stakeholders from ACP institutions to use and manage these data.

In April 2022, the GBIF awarded CSIL a contract to carry out the **external evaluation of the BID Programme**. The evaluation specifically focuses on the **BID projects which have been co-financed by the European Union (102)**; **those co-financed by the JRS biodiversity foundation (5) were excluded from the scope of this assessment**. Overall, the objectives of this evaluation are to assess the impacts achieved by the BID projects and draw useful lessons for future phases of the programme. Findings are expected to provide ideas for a 'Future opportunities' document to be prepared by the GBIF as part of the ongoing discussions to secure funding for a second, multi-funder BID programme.

METHODOLOGY

The evaluation was guided by **7 evaluation questions** which were addressed to investigate the following issues: (i) the achievements of BID projects with regard to the objectives planned; (ii) the contribution of the BID Programme to the objectives set in the Strategic Plan 2020-2024[1]; (iii) the contribution of the BID programme to specific objectives (e.g. strengthening international & regional collaboration to mobilise biodiversity data, increasing available biodiversity data and its use to respond societal challenges); (iv) the efficiency of the BID administration process; (v) the mechanisms adopted to ensure the sustainability of results in the long-term; (vi) the impacts of the programme in the achievement of GBIF's broader objectives; (vii) useful lessons to improve future phases of the programme.

A combination of methods was mobilised to answer these evaluation questions, including three scoping interviews (two with GBIF officials and one with a representative from DG INTPA), a portfolio analysis of BID projects combining both quantitative and qualitative information on projects' performance, two surveys gathering information and feedbacks

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[1] Adopted by the European Commission (DG Directorate-General for International Partnerships, INTPA).

from both selected (120 respondents) and unselected (53 respondents) BID applicants, a network and citation analysis complementing and enriching the portfolio analysis, and five in-depth analysis of a sample of BID projects.

FINDINGS

BID projects' achievement

The BID Programme contributed to **increase availability of biodiversity data** in the targeted regions. Overall, BID projects published a total of 703 datasets and made available about 1.3 million occurrence data records (out of which 1.1 million georeferenced). Almost all occurrences were published by 106 distinct organisations located in the ACP region, out of which 93 registered during the projects. Data show that the publication of datasets follows a cyclical pattern, with peaks close to the end of the projects or just after. Thus, it is expected that by the end of 2023, the number of data records published will further increase (especially occurrences) and reach the target of 1.5 million.

The BID Programme **increased the use and recognition of BID projects' outcomes** by international science-policy initiatives and the international community. The number of downloads and citations of BID mobilised data has significantly increased in recent years. For instance, between 2016 and 2022, about 1.8 million downloads from users of GBIF.org were counted containing a total amount of 3,113 million data records published by BID funded projects as compared to 77,349 data records on ACP downloaded before the launch of the BID Programme. Also, the number of publications citing BID mobilised data raised from 4 in 2016 to 306 in 2021. A significant rise in the number of peer-reviewed publication using BID mobilised data occurred from 2018. Nevertheless, there is evidence that BID mobilised data are mostly used in non-ACP countries, suggesting that while there is an increasing use in biodiversity data about ACP regions, data uptake is still lagging behind in the three targeted regions, suggesting a capacity gap. Anecdotal evidence has been also collected about the actual and expected use of BID mobilised biodiversity data into decision-making processes.

The BID Programme **enhanced capacities of key stakeholders to mobilise biodiversity data** through its capacity enhancement workshops. Overall, 11 capacity enhancement workshops were organised. They reached 208 unique trainees representing all 102 BID-funded projects assessed under this evaluation. A total of 103 badges (a certification released to workshop's attendees on the basis of their achievements) have been issued: 90 on data mobilisation and 13 on data use. However, even without the achievement of a certification, participants attending the workshop acquired skills useful not only for the project but also for future biodiversity research activities.

The BID Programme **contributed to the establishment of partnerships** between organisations dealing with biodiversity data at different levels, the strengthening of a community of practice, as well as the enlargement of the GBIF network. Despite the enlargement of the network, project collaborations remain mainly within each targeted region, in accordance with BID calls' requirements. Organisations from Europe and North America are usually involved to facilitate the data publishing activities. Moreover, despite its

significant enlargement during the BID implementation (in some cases, the Programme acted as an entry point to the GBIF membership), the GBIF network still covers only a tiny share of BID-eligible countries (especially in Caribbean and Pacific regions). Moreover, there are some indications that GBIF node are sometimes not very proactive in establishing relationships with key stakeholders in the regions.

The sustainability of BID's results materialised in three different ways: (i) follow-up projects taking over the results achieved with BID projects; (ii) new collaborations (informal or formalised through agreements) arising between participants of different BID projects; (iii) dissemination activities to raise awareness on the importance of biodiversity and data availability. More specific solutions to ensure the long-term impacts of projects were also adopted by BID participants, including for instance ad-hoc committee to follow-up project's activities, establishment of ad-hoc portal for data sharing, the signature of a MoU with GBIF, training and replication workshops, etc. Activities to support the sustainability of BID projects were also implemented by GBIF. Specifically, it provided regional IPT and helpdesk services through the regional support teams. Also, it organised fundraiser and awareness events that give BID participants the necessary exposure to receive funding from various global funding sources and international institutions.

By supporting the increased availability of digitised biodiversity data, the BID Programme widely **contributed to the achievements of objectives stated in the Strategic Plan adopted by DG INTPA for 2020-2024** period, especially in relation to Theme 2 "Climate Change, Environment, Energy" and Theme 3 "Digital and Data Technologies". There is evidence that projects have digitised natural history collections and that the mobilised data are expected to enhance regional capacities to conserve, restore and manage the species. Conversely, BID projects are less likely to contribute to Theme 1 - Partnerships. The type of collaborations enabled by the BID Programme are not aligned to the ones recommended by the INTPA strategic plan. Indeed, there is a limited evidence of projects that have enabled (or is expected to enable) partnership agreements with the countries of the organisation of ACP States, or sustainable partnerships with IFI, the UN and other multilateral partners around EU priorities, or a joint AU-EU partnership agenda and/or joint programming and implementation by EU member states. While contributing to the specific objectives of DG INTPA Strategic Plan, BID projects are specifically contributing to progresses in the achievement of SDG goals, particularly SDG 15 "Life on Land" , SDG 13 "Climate Action" , DG 14 "Life Below Water" and SDG 17 "Partnership for the goals".

The evidence collected points to a **positive contribution of BID Programme to the achievement of GBIF broader objectives**, including (i) empowering GBIF global network by interconnecting data user and data holding institutions in ACP regions but also with institutions located in non-BID eligible countries; (ii) filling data gaps by publishing new datasets in open access, digitising existing information previously only available in catalogues books, and making existing datasets freely accessible online (open access); (iii) Improving data quality.

Efficiency of BID administration

Over the two phases of the BID Programme, the GBIF has **enhanced its capacity to manage** an increasing number of projects as well as to ensure consistency during the selection process. To this end, different actions were implemented, e.g. cross-checking the disparities between different reviewers, developing guidelines and manuals on how to perform the assessment, introducing online platforms for submission, grant management software, manuals, etc.

Amongst the **aspects mostly rewarded by BID participants** in the management of the BID programme, there are (i) the two-step application process (which provides the opportunity to refine some of the project activities and rethink some of their proposed methodologies), (ii) the feedback provided by reviewers on concept notes; (iii) the support provided by mentors; (iv) the capacity enhancement workshops; (v) the regional meetings. On the other side, the **most cumbersome activities** were declared to be coordinating the consortia, preparing the budget, and drafting technical contents (during the selection phase) as well as meeting GBIF standards in publications, preparing financial reports, establishing data sharing agreements and finding data hosting institutions (during the implementation phase).

BID added value

The evidence collected points that the **projects would have not gone ahead without the financing of the BID programme**. Searching for alternative sources of financing as well as reducing the scope of the projects has been considered as an alternative only in few cases by non-selected participants. Thanks to the support provided by the Programme, participants were also able to access to new funding opportunities (funding leverage effect), advance in data mobilisation and better identify data users' needs, enhance collaborations in biodiversity fields, increase credibility and reputation of their institutions (as capable to carry out complex activities relating to biodiversity mobilisation and conservation efforts).

LESSONS LEARNT

On the basis of the findings described above, some useful lessons were identified to the design and implementation of a possible third phase of the BID Programme or a similar programme. In particular:

With a view to **improve data mobilisation and use**:

The *availability of data publishing infrastructures* in ACP countries (especially in led developed countries, including Pacific Island and Caribbean region) is a crucial asset that facilitates BID participants with data mobilisation. In the second phase of the Programme GBIF started distributing regional IPT and helpdesk services through the regional support teams. This type of support addressed to the development of national data publishing capacity within ACP regions or finding data hosting institutions within the ACP target regions could help to fill in this capacity gap and allow to strengthen inter-regional collaborations.

- *The presence of a GBIF node* which actively liaise with BID Participants is beneficial to projects' implementation. This type of engagement between GBIF node and BID

Participants could further improve the project's performance since they can timely provide the needed support, foster collaborations an enable communication with government ministries.

- Some BID participants, especially in countries with low capacity, face challenges in publishing data and achieving greater results within the grant period. *Organising ad-hoc workshops as well as setting internal deadlines* can be helpful in this regard, because BID participants are encouraged to think about this issue since the starting of the projects. Also, promoting the curation of data after publication – as GBIF currently do –contribute to ensure that data publishing activities continue after the end of the project.

With a view to **improve the selection and implementation of projects**, the following lessons could be taken into account:

- Major *challenges* faced by BID participants in the project preparation and implementation include coordinating the consortia, preparing the budget, and drafting technical contents, meeting GBIF standards in publications, preparing financial reports, establishing data sharing agreements and finding data hosting institutions. GBIF can continue to providing support to BID applicants and participants specifically targeting these challenges.

- According to the requirements set out within the calls for proposals, organisations in BID-funded countries have so far applied only to calls launched in their specific regions. This implies that they are directly linked either with organisations located in an eligible country within their region or with organisation located in countries that are never eligible under the BID programme. However, allowing inter-regional collaborations (e.g. through interregional cooperation calls) may be a way to overcome lack of capacities in given countries without the need to necessarily rely on non-ACP countries. Indeed, the choice to team up with organisations located in not BID-funded countries is usually driven by capacity needs and data accessibility.

With a view to **enhance the sustainability of projects**, the following lessons could be taken into account:

- The *support provided by the regional contractors* in the second phase of the Programme (e.g. with data hosting, data publishing, data cleaning, language, etc.) has positively contributed to the project's performance by supporting BID participants in addressing a number of challenges. Building on their expertise and fostering their engagement beyond the BID's life could help ensuring that all needs related to project sustainability are addressed as well as to build a stronger community of practice across the targeted regions.

- The *sustainability of BID's results* can be further enhanced by undertaking ad-hoc actions, including encouraging the update and revision of BID published databases (through MoUs, ad-hoc data offices, projects' follow up), promoting the inclusion of BID data in

university teaching and learning courses as well as collaborations between data hosting and data users within and beyond the project implementation.

- When a country or an organisation join the GBIF network through the signature of a MoU, it becomes responsible of coordinating activities and initiatives related to biodiversity within the country. *Encouraging the establishment of a national node*, especially in the Pacific and Caribbean regions, may contribute to the development of a national network of data publishers and users, increase national capacity, thus ensuring sustainability of the activities initiated under the BID Programme.

With a view to **improve BID contribution on GBIF wider objectives**, the following lessons could be considered:

- Enlarging the list of BID-eligible countries in ACP regions – as occurred in the second phase of the Programme in the Caribbean region – contribute to broad the geographic scope of the programme and thus extend capacity support. To further increase the effect of this enlargement (in terms of capacity building), the *collaborations between countries with high and low capacity levels* (e.g. by introducing requirements in the establishment of consortia) could be encouraged by GBIF.

- BID projects address the UN SDG, particularly environment and climate change adaptation. Their contribution to the achievement of SDG objectives could be further enhanced by facilitating communication and contact between BID participants and multilateral partners in order to build *sustainable partnerships around EU priorities* (e.g. by introducing requirements in the call).

1. INTRODUCTION

The sensible use of natural resources and biodiversity conservation are crucial to avoid continuing climate degradation and environmental catastrophes that threatens the ecosystem and jeopardises human wellbeing. All countries need information to identify possible threats to biodiversity, undertake effective policymaking decisions and determine priorities for conservation and sustainable use. In this regard, the sub-Saharan African, Caribbean and Pacific Group of States (**ACP**) - although being incredibly rich in biodiversity - have been a blackhole in terms of biodiversity data availability and accessibility.

In May 2015, the Global Biodiversity Information Facility (GBIF)[2] launched the **Biodiversity Information for Development Programme** (hereafter **BID Programme**) to address these geographical gaps, and specifically to increase the amount of biodiversity data and information available in the ACP countries. The Programme managed by the GBIF Secretariat is co-funded by the European Union's **International Partnerships Directorate** (hereafter **INTPA**)[3] and GBIF. Funding from the BID Programme have targeted universities, museums, ministries, research centres, and NGOs. The BID Programme has supported capacity enhancement activities and the implementation of projects aiming to mobilize biodiversity data and strengthen national or regional biodiversity information facilities in these regions. It has been implemented through two phases (including seven calls for proposals) and will end in October 2023. Under its first phase, the BID Programme focused on data that supports research and decision making in connection with *invasive alien species*, *protected areas* and *threatened species*, while, in the second phase, it sought to support sustainable development in a broader sense.

In April 2022, GBIF awarded CSIL a contract to carry out the "**External evaluation of the BID Programme**". This evaluation aims to assess the progress achieved by the portfolio of projects funded by the European Union through the BID Programme (in total 102 projects) across the ACP countries. As from the Terms of References (ToR), specific objectives of this evaluation include:

- Looking at the technical, economic, and societal impacts of the projects with respect to the objectives set out by GBIF in the BID Logical Framework[4];

- Evaluating the impact of the overall BID Programme vis-a-vis the achievement of Strategic Plan 2020-2040 adopted by INTPA and GBIF's broader objectives;

- Evaluating progress in reference to the mid-term review[5] completed in April 2017 and the annual reports delivered to the European Commission;

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[2] The GBIF is an inter-governmental initiative with the mission to make biodiversity data freely and openly accessible on the internet for science and society. It was established in 2001 as a global mega-science initiative to address one of the most significant challenges of the 21st century –harnessing the knowledge of the Earth's biological diversity. More details: https://www.gbif.org/

[3] Previously called Directorate for International Cooperation and Development, DG DEVCO.

[4] Biodiversity Information for Development Logical framework - DCI-ENV/2014/ 352-603, Version 7 January 2020. The BID Logical Framework includes all the objectives, results, sub-results, and activities of the BID programme and describes the indicators to track progress, the sources to verify this progress, and the assumptions made to reach the foreseen results.

[5] Mid-Term Review of the 'Biodiversity Information for Development' project (DCI-ENV/2014/352603), April 2017, carried out by AGRECO.

- Collecting evidence on lessons learned from the implementation process and the results achieved to date (Q4 2021) and foreseeable within the project end date (October 2023);

- Feeding into and contributing ideas to a 'Future opportunities' document to be prepared by GBIF as part of ongoing discussions to secure funding for a second, multi-funder BID programme.

The evaluation was guided by an assessment matrix (enclosed in **Annex III**) including 7 evaluation questions (EQs)[6] and defining the manner according to which these questions should have been answered (such as analytical activities and data collection tool). To collect and analyse the relevant evidence needed for this evaluation, a variety of complementary methods were mobilised (see Box 1 for more details). Triangulation of evidence was then performed to consolidate the elements retrieved with each method.

Box 1 Methodology in a nutshell

This evaluation relied on the combination of the following methods:

Scoping interviews: these were used during the inception phase of the evaluation to (i) gather a broad understanding of GBIF and the broader policy context of the BID programme; (ii) understand some specificities about the design and implementation of the BID programme (e.g. rationale behind the design of specific calls, challenges addressed, etc.) and (iii) refine initial understandings and assumptions about the stakeholder's expectations concerning the objectives assigned to the BID programme. In total, three scoping interviews were carried out, two with GBIF officials and one with representative from Directorate-General for International Partnerships (INTPA).

Portfolio Analysis: it was addressed to provide a comprehensive and systematic analysis of EU-funded BID projects, by combining quantitative and qualitative information on projects' performance. Specific objectives included (i) carry out in-depth analysis of the typology/characteristics of the BID projects portfolio; (ii) assess the reported achievements of BID's projects against the targets set out in the LogFrame; (iii) compare and link projects' achievements to their characteristics. More details about the structure of this portfolio are provided in **Annex V**).

Survey: two surveys were launched in the framework of this evaluation: one to selected and the other to unselected BID applicants. The *first survey* (to BID participants) was addressed to complement and enrich the portfolio analysis, by collecting information not available in the project reports. Specifically, it was addressed to gather more qualitative information about participants' perceptions of results and impacts achieved by the project (or expectations in case of ongoing projects) as well as on barriers encountered during the projects' implementation and suggestions for further phases of the BID programme. Overall, 491 beneficiaries (including both project's coordinators and partners) were contacted, out of which 120 contributed to the survey (24%). The *second survey* (to unselected applicants) was addressed to assess the efficiency of the BID Programme and its selection process and collect opinions on its added value as well as suggestions for possible future phases of the programme. Overall, 367 project leaders were contacted, out of which 53 contributed to the survey (14%). Both surveys were administered in English and French through the online platform SurveyMonkey[7]. The surveys were run from June 6th to August 1st with

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[6] The EQs were provided by the GBIF in the Terms of References. They have been fine-tuned and articulated in sub-questions during the inception phase of this study.

[7] At the following link: https://www.surveymonkey.com/r/GBIF_Unselected

reminders sent periodically by email (every two weeks). More details and statistics of both surveys are enclosed in **Annex VI**.

Network Analysis: it was used to complement and enrich the portfolio analysis, by analysing consortia composition. The goal of this analysis was twofold: (i) identifying organisations that play a key role in generating new knowledge; (ii) Identifying possible communities within the network, i.e. types of organisations/countries that typically share knowledge.

Citation analysis: it was used to investigate the typology of publications citing BID data and the fields of research where a higher BID data uptake level occurs. To this end, data collected by GBIF within the Literature Tracking Programme were used.[8]

Case studies: they consisted of an in-depth analysis of selected projects to investigate different issues related to the implementation of the BID Programme and the projects' performance (e.g. the role of GBIF node, project's capacity to boost regional/international collaborations, challenges and advantages associated to the different type of grants). Overall, 5 case studies were analysed according to a common template. For each of them, a case study factsheet reporting the outcomes of this analysis is provided in **Annex VII**.

<div align="right">Source: CSIL elaboration</div>

This document represents the **draft final report** which summarises the findings arising from this evaluation. After this introduction section, it is organised as follows:

- **Section 2** includes a brief presentation of the BID programme, such as its rationale, the activities funded, the countries the programme targets, and an overview of the BID projects portfolio;

- **Section 3** is the core of the assessment. It digs into the results achieved in terms of data mobilisation, data use, capacity enhancement, partnership and community of practice, and sustainability. This section also sheds light on the contribution of BID projects to the achievement of INTPA goals;

- **Section 4** describes the selection process and assess the efficiency of BID Programme;

- **Section 5** assesses the added value of the BID Programme;

- **Section 6** draws conclusions and provides some lessons learnt that might be taken into account for the implementation of a third phase of the BID Programme or a similar Programme.

- A set of **Annexes** are included to complement the evidence discussed in the report. In particular, a Glossary has been enclosed in **Annex I** to facilitate the understanding of this report.

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[8] The Literature Tracking Programme is managed by the GBIF Secretariat and it identifies research uses and citations of biodiversity information accessed through GBIF's global infrastructure. Further information is available at https://www.gbif.org/literature-tracking

2. THE BID PROGRAMME

Biodiversity Information for Development (BID) is a multi-year programme under the umbrella of the EU Biodiversity for Life flagship initiative (B4Life)[9]. It is managed by the GBIF Secretariat[10] and co-funded by INTPA and GBIF. The BID Programme was launched in 2015[11] with the overall objective to increase the amount of biodiversity information available for research and policy making in ACP countries.

2.1 Rationale and objectives

The idea of the BID Programme emerged in 2013 when, in relation to the first phase of the Biodiversity and Protected Areas Management (BIOPAMA) programme[12], the European Commission (EC) and GBIF concluded that **data availability was heavily biased towards areas of greater capacity and longer history of scientific collecting rather than areas of actual biodiversity significance**. Indeed, a huge amount of information on biodiversity were hold by institutions located in North America, West Europe and Australia while they were almost missing in areas rich in biodiversity, such as the ACP regions. The EC and GBIF agreed that programmes such as BIOPAMA and the Digital Observatory for Protected Areas (DOPA)[13] could not effectively improve the management of protected areas in the ACP region without the availability of adequate data. Hence, the need for funding the BID Programme with the aim to increase the amount of biodiversity information available to support research and decision-making in ACP countries.

As an institution determined to address and tackle inequalities in data availability, GBIF - through the BID Programme - wanted to exploit already existing infrastructure and biodiversity information in the ACP region, unlocking its potential through **adequate data mobilisation** and **capacity enhancement**. As spelled out in the LogFrame (see Box 2), the core of the BID Programme is to allocate resources to support capacity enhancement activities and projects that mobilize biodiversity data, and strengthen national and regional biodiversity information facilities relevant with a view to ensuring the sustainable development and integration of biodiversity information into research and decision-making processes.

Thus, resources – under each project – are allocated to finance a combination of the following type of activities: (i) digitisation of existing biodiversity data held by institutions located in ACP countries, or data concerning ACP countries but held by institutions located outside ACP countries, (ii) supporting data sharing of biodiversity data (iii) production of new biodiversity

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[9] https://europa.eu/capacity4dev/b4life/wiki/biodiversity-life-b4life

[10] GBIF was chosen as the managing institution because of its specialized knowledge, experience, and implementation capacity needed for the specific activities developed under the proposed programme. At that time, GBIF could rely on a network of participants (countries, economies, and international organizations collaborating to advance free and open access to biodiversity data; https://www.gbif.org/the-gbif-network) as well as an online platform through which datasets gathered by partners and funded projects could have been made freely available to the public. Source: BID mid-term review.

[11] The BID programme was officially launched in May 2015 at the Africa Rising: Mobilising Biodiversity Data for Sustainable Development conference in Cape Town (South Africa) while the grant contract between the EC and GBIF was signed in 2014.

[12] BIOPAMA is a six-year programme addressed to reinforce the management and governance of protected and conserved areas in the ACP regions through better use and monitoring of information and capacity development on management and governance.

[13] https://dopa.jrc.ec.europa.eu/dopa/

data in ACP regions/countries, (iv) enhance capacity of key stakeholders from ACP institutions to use and manage these data.

Box 2 The BID Logical Framework

The BID Logical Framework (hereafter **LogFrame**) includes all the objectives, results, sub-results, and activities of the BID programme and describes the indicators to track progress, the sources to verify this progress, and the assumptions made to reach the foreseen results. It was adopted in 2015 when the first phase of the BID Programme was launched. In 2020, the EC and GBIF amended the original LogFrame and extended it for three more years (2020-2023), thus covering the second phase of the BID Programme. Following a request from the EC, GBIF quantified the targets to be reached by the end of the second phase based on the results achieved in the first phase. Since its first version, the LogFrame includes two expected results for the BID Programme, namely: RESULT 1. Enhanced capacity for effective mobilization and use of biodiversity information; RESULT 2. Enhanced availability of information resources and best practice guidance for mobilization and application of biodiversity information for key policy needs. More details on the BID LogFrame are provided in **Annex IV**.

Source: CSIL elaboration

By increasing the availability of biodiversity data for policymakers, the BID Programmes also aims to enable ACP countries meeting key policy needs and commitments under intergovernmental processes like the Convention on Biological Diversity (CBD) and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Specifically, with respect to the CBD, the Programme aims to support progress towards the CBD's Aichi Biodiversity Targets, especially Aichi Target 9 (Invasive alien species prevented and controlled), Aichi Target 11 (Protected areas increased and improved), and Aichi Target 12 (Extinction prevention).

2.2 Funded activities

The BID Programme has been implemented in two phases: 2015-2019 (first phase) and 2020-2023 (second phase). Overall, the total funding allocated to the programme was €6.91 million, out of which €5.5 million from INTPA and €1.41 million from GBIF as in-kind contribution. Specifically, a total amount of €4.9 million was allocated to the first phase of the programme - €3.9 million by INTPA under the B4Life and €1.0 million by GBIF. During the second phase, additional €1.6 million were provided by INTPA and €410,000 by GBIF.

BID resources – overall € 4.2 million – have been allocated to 107 projects selected through seven calls for proposals (see Section 3.1 for more details). Out of 107, five projects were co-funded by the JRS for a total amount of € 411 thousand.[14] Funded projects were expected to (i) mobilise biodiversity data relevant to sustainable development, (ii) enhance capacities on data mobilisation and management, and (iii) integrate biodiversity information into policy and decision-making processes. Evidence collected through the survey (see **Annex VI** for details[15]) shows that the activities carried out to achieve these goals are various. As stated by survey

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[14] As clarified in Section 2.4 below, the five projects co-funded by the JRS are not in the scope of the current study.

[15] Specifically Survey to BID participants, questions C2-C7.

respondents - with a view to **mobilise biodiversity data relevant to sustainable development** - BID projects have mostly implemented (i) training on data mobilization and management, (ii) digitalisation and publication of data from several sources (e.g. from natural history collections, monitoring and sampling activities, DNA barcoding, literature, etc.), (iii) improvement of existing datasets, (iv) validation and publication of checklists, (v) compiling inventories of biodiversity data holdings, etc.

To **integrate biodiversity information into policy and decision-making processes**, BID projects have mostly (i) organised workshops and advocacy actions that promote the use of openly accessible data, (ii) launched surveys or workshops to understand biodiversity data requirements for specific use cases, (iii) hosted workshops on data analysis techniques. To ensure **integration of data solutions into the policy-making process**, BID projects have mostly financed (i) the production of communication materials (e.g. policy briefs, news articles, etc.) (ii) the integration of data/information products within existing national or international biodiversity reporting platforms and systems, (iii) organised workshops and advocacy actions that promote the use of data solution to users, (iv) fostered workflows and institutional agreements to update information resources developed in the project. To provide **user-ready analyses of GBIF-mediated data**, BID projects have financed the development of maps of species distributions or geographical data gap analyses as well as more complex products (such as ecological niche models, area protected networks), data summary tables indicating population trends, species richness and community composition, biodiversity assessments (e.g., Red Lists, KBAs etc.), indicators informing Sustainable Development Goals or CBD targets.

In addition to funded projects, the GBIF Secretariat coordinates various activities to support projects' participants. Training activities on data mobilization and management as well as national/regional workshops have also been organised by the Secretariat to **enhance capacities on data mobilisation and management** as well as to engage the community of biodiversity data holders and users. Finally, **to overcome the issues caused by the measures undertaken at national level in response to the Covid-19** (e.g., participants could not travel and exchange face to face with GBIF staff), the GBIF has provided support thorough in-region contractors – or regional support teams. In-region contractors attended BID regional support meetings as well as BID coordinating meetings to support BID participants achieving their objectives according to the best practices. In-region contractors have supported projects in their implementation, for instance by supporting projects' teams in their data mobilisation and publication activities, or by providing additional review of their midterm reports before submission. They have also provided helpdesk services as regards to regional IPT development and management, and language support. Besides selected projects, resources have also been used by GBIF to implement a range of additional activities, described in the LogFrame, to raise awareness towards the projects and identify needs and constraints in the three targeted regions. At the beginning of the first phase, the GBIF Secretariat launched various activities to identify and assess the needs and priorities in the target regions, such as a baseline study, surveys to data holders, capacity self-assessments, and regional meetings with key stakeholders. Among the others, these activities have allowed the GBIF understanding the

financial and technical challenges faced by ACP countries , and so designing the calls from proposals.

2.3 Eligible countries

BID calls are region specific, i.e. applicants must be legal entities located in an eligible country within the region where the call is launched. Under each call, the GBIF specifies which countries are eligible. In the first phase of the Programme, the GBIF defined BID eligible countries according to the definition of ACP countries as included in the Cotonou Convention[16]. As a result, 79 countries were selected as eligible for BID funding across the ACP region. 48 of them were in sub-Saharan Africa, 16 in the Caribbean and 15 in the Pacific (see Map 1). During phase two of the programme, GBIF had more flexibility regarding the definition of BID eligible countries, resulting in a broaden geographic scope of the programme. Nine more countries were added to the list of BID eligible countries, extending capacity support in the Caribbean[17] and bringing the total number of eligible countries to 88.[18]

Map 1 Countries eligible under the BID Programme
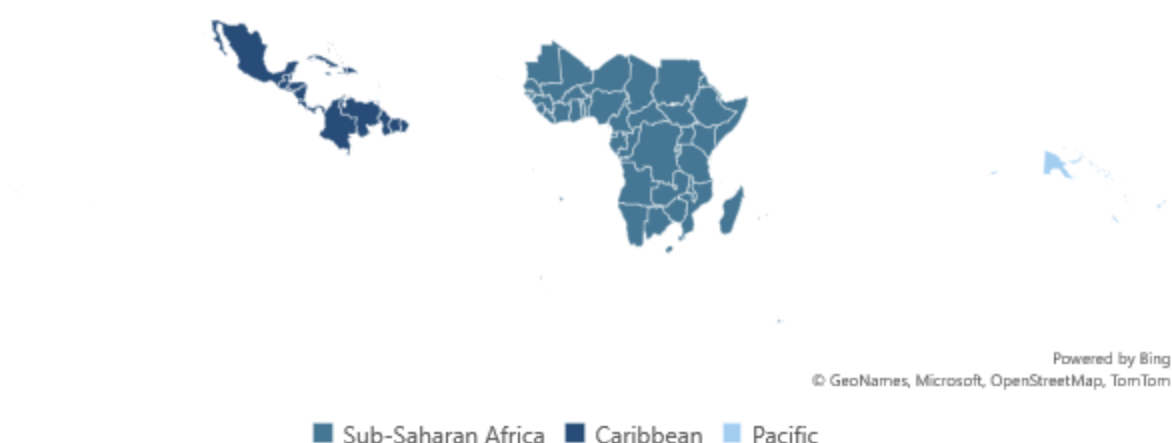
Source: CSIL elaboration on portfolio database

As shown in Map 2, the total number of Caribbean countries eligible for BID Programme funding increased from 16 to 25. The nine countries added during phase two of the programme

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[16] https://home-affairs.ec.europa.eu/pages/glossary/cotonou-agreement_en

[17] In agreement with the BID Steering Committee, the regional scope of the Caribbean call launched in 2020 was extended to include all South American countries with a Caribbean coastline, all Central American countries and Mexico in addition to the ACP countries already included as eligible in the 2016 BID Caribbean call for proposals.

[18] In addition to the eligible countries, Institutions from 24 overseas territories across the ACP region are eligible to be partners in regional grants, provided that they meet all other eligibility requirements. These countries include: British Indian Ocean Territory, French Southern Territories, Mayotte, Réunion, Saint Helena, Ascension and Tristan da Cunha, Anguilla, Aruba, Bermuda, Bonaire, Sint Eustatius and Saba, Cayman Islands, Curaçao, French Guiana, Guadeloupe, Martinique, Montserrat, Saint Barthélemy, Saint Martin (French part), Sint Maarten (Dutch part), Turks and Caicos Islands, Virgin Islands (British), French Polynesia, New Caledonia, Pitcairn, Wallis and Futuna.

include: Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and Venezuela.

Map 2 Eligibility expansion in the Caribbean

<div align="right">Source: CSIL elaboration on portfolio database</div>

2.4 Projects portfolio

Since the launch of the BID Programme in 2015, GBIF has issued **seven calls for proposals**: three in Africa (2015, 2017, 2020), two in the Caribbean (2016, 2020) and two in the Pacific (2016, 2020), all differing in terms of scope, project goals and stakeholders involved. In all, **107 projects** were selected out of **833 concept notes** that were submitted through these calls. A higher number of concept notes[19] and so of selected projects are from sub-Saharan calls. As shown in Figure 1, 69 projects (65%) were selected in sub-Saharan Africa, 26 (24%) in the Caribbean, and the remaining 12 (11%) in the Pacific region. All projects belonging to the first phase are closed, except for two which have been discontinued[20]. All projects financed during the second phase are still in progress and are scheduled to end in 2023. However, as mentioned in the introduction section, **this evaluation focuses only on BID projects which were financed by the European Commission – in total 102** - while the 5 projects funded by the JRS biodiversity foundation (all supported under the 3rd call for proposals in Africa)[21] are excluded.

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[19]Sub-Saharan Africa calls received 143 concept notes in 2015, 384 in 2017, and 215 in 2020. Caribbean calls received 15 concept notes in 2016 and 54 in 2020. Pacific calls received 12 concept notes in 2016 and 9 in 2020. The sharp increase in the number of Caribbean proposals submitted is partly due to the enlargement of eligible countries in the region.

[20] BID-AF2015-0116-NAC and BID-CA2016-0005-SMA are the two projects that were discontinued. The projects, which were hosted in the DRC and Haiti respectively, were discontinued due to negligence (BID-AF2015-0116-NAC) or natural disaster (BID-CA2016-0005-SMA). After talks with the GBIF team, it was decided that no insight could be gained by focusing on either project, as they were both considered outliers.

[21] They are: BID-AF2020-194-USE, BID-AF2020-029-USE, BID-AF2020-140-REG, BID-AF2020-039-REG and BID-AF2020-169-USE

Figure 1 Overview of BID projects selected through seven calls
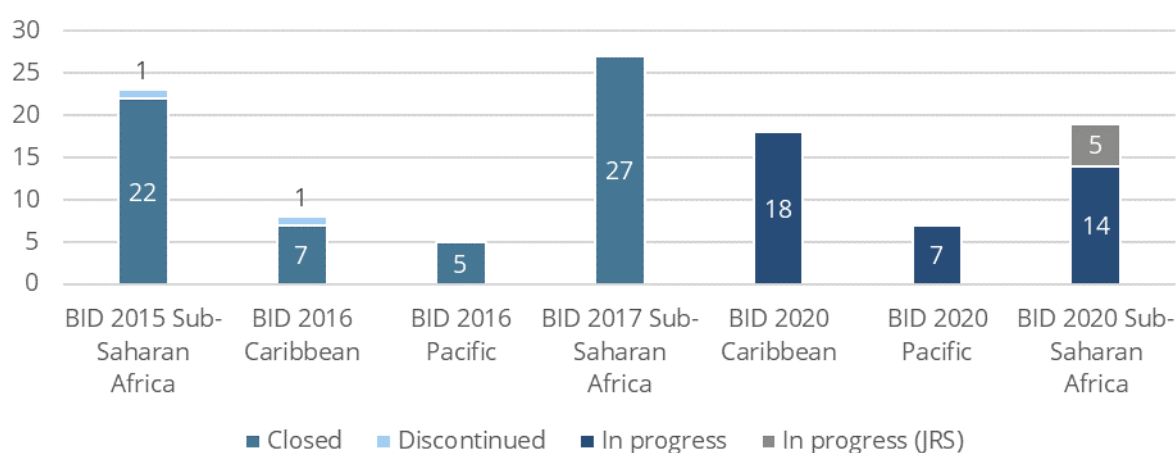
Source: CSIL elaboration on portfolio database

Different types of grants were available under each call, namely (i) Regional biodiversity data mobilization grants, (ii) National biodiversity data mobilization grants, (iii) Small (called Institutional during the second phase) biodiversity data mobilization grants. Based on analysis of findings and recommendation of midterm independent review, the GBIF Secretariat introduced a fourth category of grant during the second phase, namely the data-use grants, ensuring better use (by decision-makers and policy bodies) of the data mobilized. On the total number of projects assessed, the majority have applied for an institutional or national grants (44 and 42, respectively), while regional (10) and data-use (6) grants represent a minority. This partly follows the structure of the calls and, for example, the GBIF decision to exclude regional grants from the second African call and to introduce data-use projects only in the second phase.[22]

Figure 2 Number of projects by call and type of grant
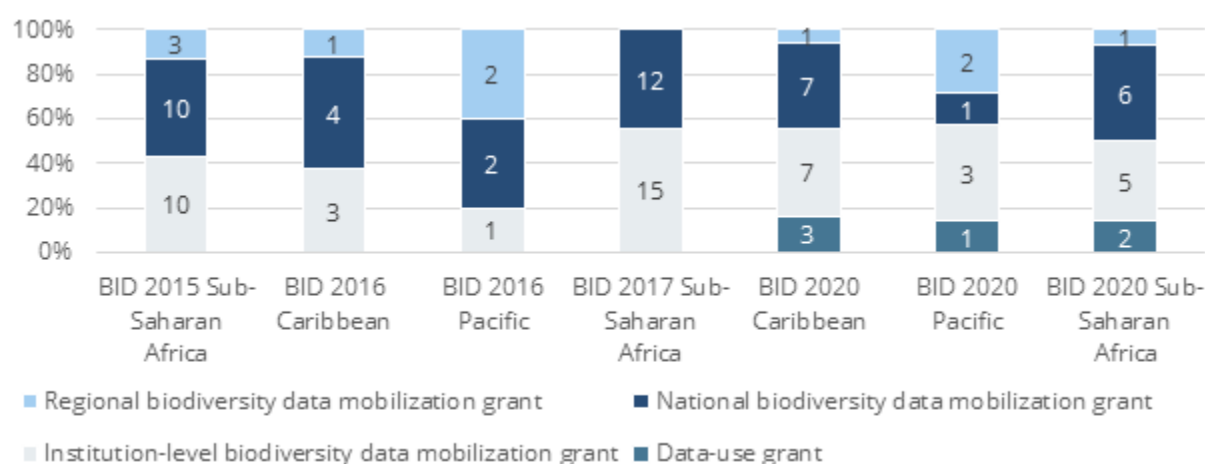
Source: CSIL elaboration on portfolio database

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[22] The exclusion of regional grants in the second call for proposal in Africa was driven by timing constraints. Indeed, building on the experience of the first call, it was noticed that regional granted projects were more complex and so were used to require more time to deliver their outputs and to be closed. Since at the time, the BID Programme was expected to end in 2019, the GBIF Secretariat believed that, if selected, regional projects couldn't be successfully closed by the end of the Programme.

From a geographical perspective, BID projects have been **implemented in 43 ACP countries** (i.e. 49% of the 88 eligible countries). Most projects were funded either in GBIF Associate Countries (41, 40.2%) or in not yet GBIF members (41, 40.2%). Only a minor share of projects has been carried out in Voting Country Participants (20, 19.6%). However, out of the 43 ACP countries where projects have been implemented, the majority (24, 56%) are not member of the GBIF, 13 (30%) are associate countries, and the remaining 6 are voting countries.[23] Being the region with the highest number of country members, **sub-Saharan Africa is the region with the lowest number of projects implemented in a non-member country**.

Figure 3 Number of BID projects by call and country type
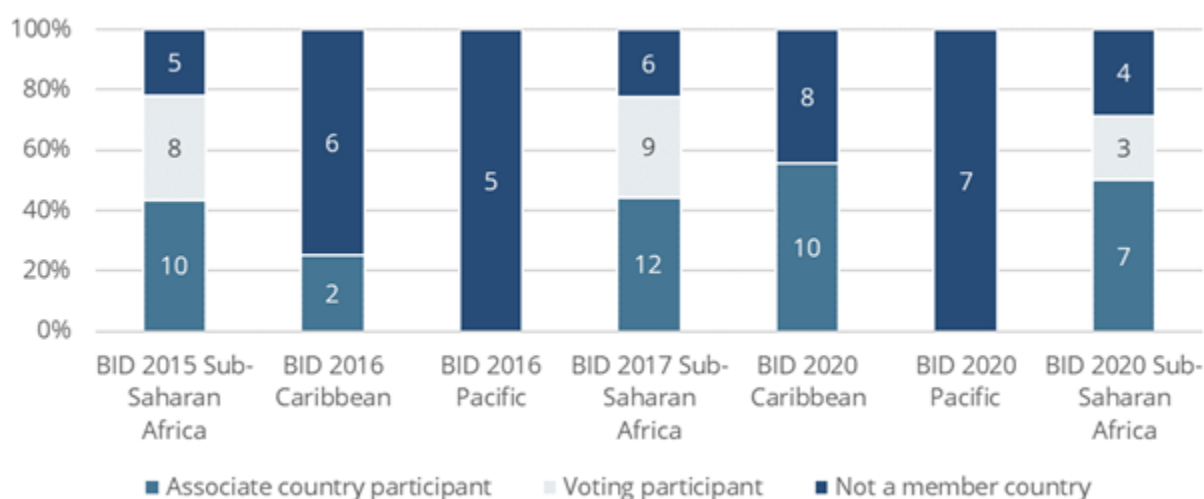
Source: CSIL elaboration on portfolio database

As far as the distribution of the number of projects by country is concerned, a high concentration of projects is observed in Colombia (8), Benin (6), and Zimbabwe (5) (see Map 3 below). All Colombian projects were funded under the second phase of the BID Programme because in the first phase Colombia was not an eligible country, which may suggest a high relevance of biodiversity data in the country, and/or higher capacity in project writing, and a better understanding of GBIF and data sharing. Conversely, other countries such as Angola, Ethiopia, Botswana, Mexico, Cuba, Haiti, and others, have hosted only one project.

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[23] See the Glossary in Annex for further information on the definition of Voting Country and Associate Country.

Map 3 Number of BID projects by country of the lead beneficiary

Number of BID projects

1   8
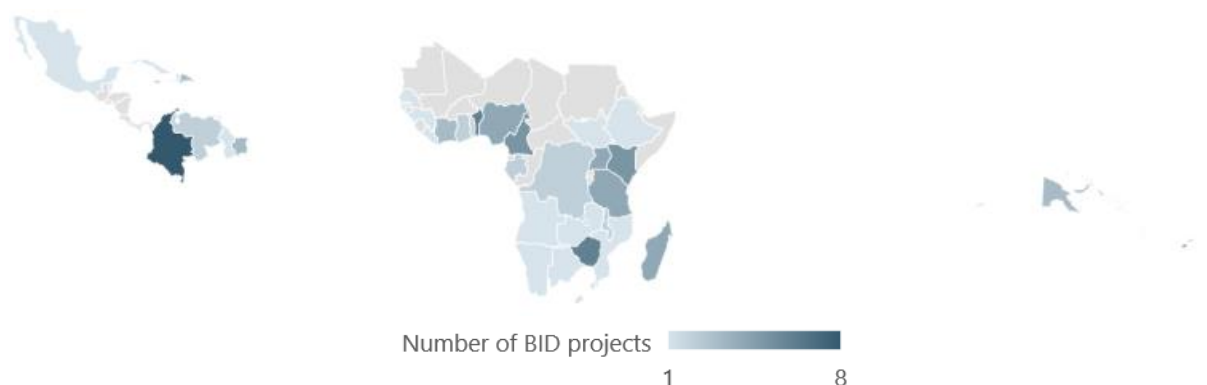
Source: CSIL elaboration on portfolio database

As BID projects usually involve organisations located in different countries, the actual number of countries that have benefitted from the BID Programme is higher. Overall, BID beneficiaries were in 77 countries (see Map4). As far as the distribution of the number of beneficiaries by country is concerned, a high concentration of beneficiaries is noted in Colombia (31), Benin (18), and Venezuela (16), and Cameron (15).

Map 4 Number of BID beneficiaries by country

Number of BID beneficiaries

1   31
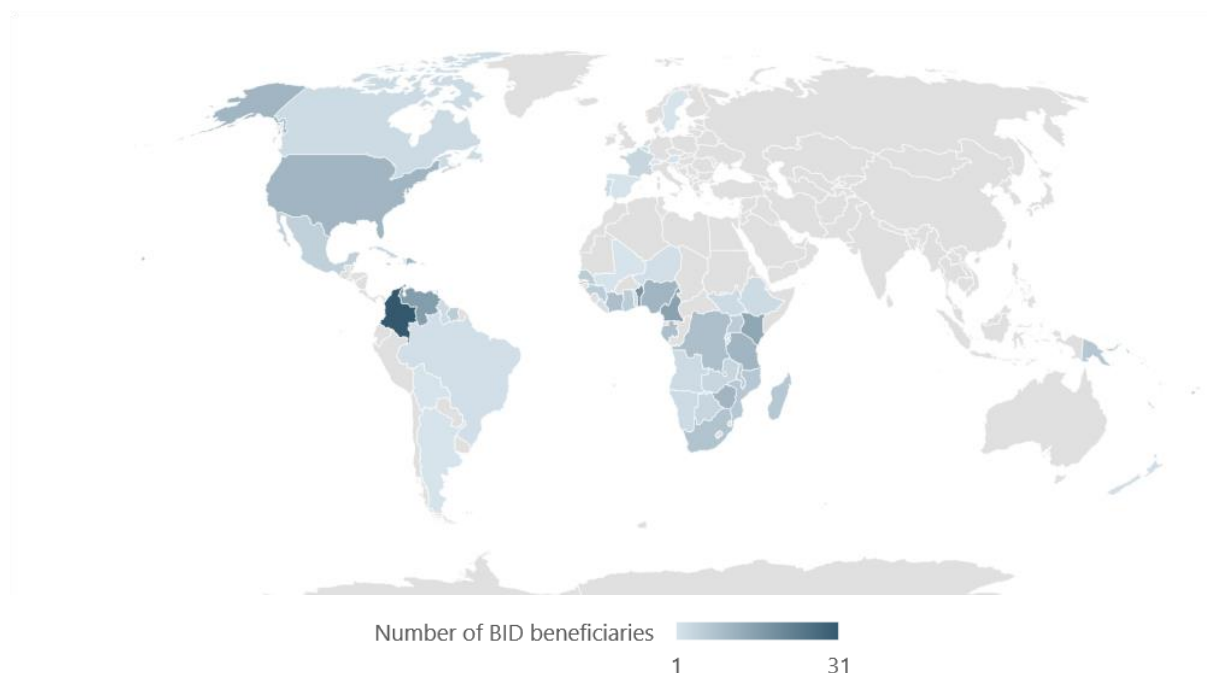
Source: CSIL elaboration on portfolio database

As mentioned in Section 2.2, overall € 4.2 million has been allocated to finance the portfolio of BID projects, in total 107. Out of this amount, **€ 3.789 million has been allocated to 102 projects assessed under this evaluation,** specifically € 2.2 million during the first phase (to 63 projects) and €1.6 million during the second phase (to 39 projects). In line with the distribution of projects across the regions, funding was mostly allocated in sub-Saharan Africa for a total amount of € 2,163,818, and to a lesser extent in the Caribbean (€ 909,992) and the Pacific region (€ 729,209). Heterogenous funding distributions are also observed across the grants. Overall, a total amount of € 602,285 has been allocated through institutional grants, €

1,788,020 through national grants, € 1,082,621 through regional grant and € 330,093 through data-use grants. However, as shown in Figure 4, while projects funded with national grants have captured a lion share of the funding (47%), projects funded with regional grants have received larger amount of funding per project. Moreover, data show that usually projects request and obtain the maximum funding available.

Figure 4 Total funding and average funding per project by call and type of grant
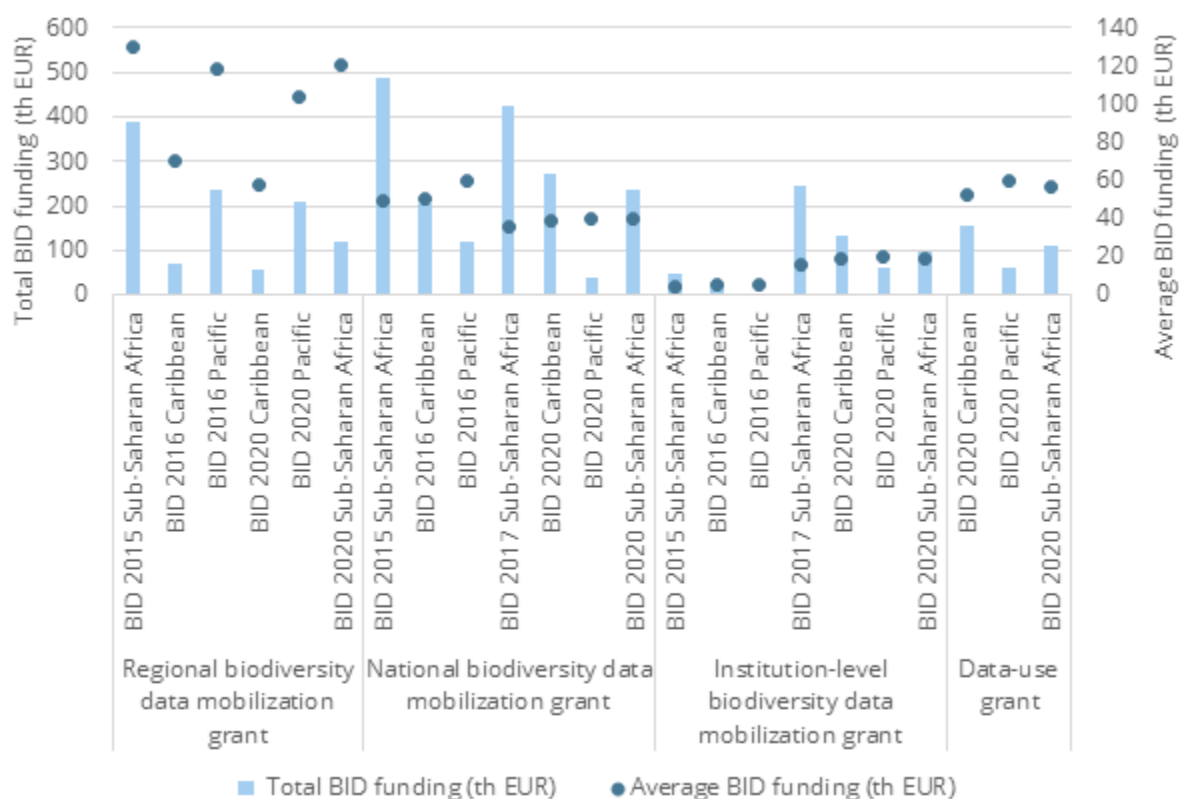
Following the distribution of projects by country of lead beneficiary (Map 5), the distribution of funding is almost homogeneous across the 43 ACP countries reached out by the Programme, with most countries receiving on average € 88,442. Few exceptions are constituted by Samoa where the lead beneficiary received a total funding amount of € 375,000, Colombia € 276,795, as well as by Benin and Madagascar, that received respectively € 276,316 EUR and € 206,159. Conversely, Barbados, Botswana, and Haiti, where only a single institutional project was carried out, received only € 5,000 each.

Map 5 Distribution of total funding by country of lead beneficiary

Total funding requested (EUR)

0   375000
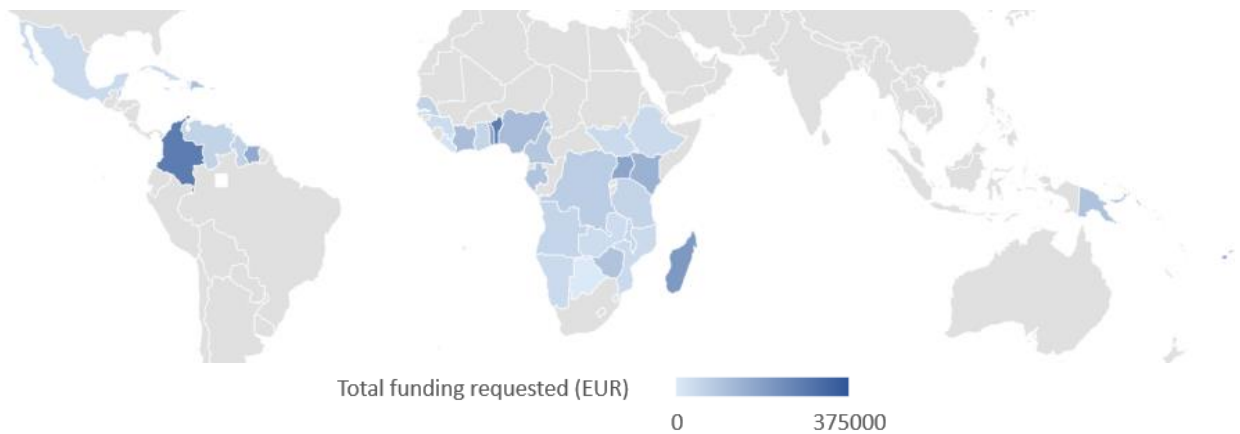
Moreover, at the regional and country level, different patterns are observed in terms of grants distribution. While institutional and national grants are widespread across the targeted countries, regional grants are concentrated in the few countries (see Figure 5).

Figure 5 Distribution of projects by country of beneficiaries and grant type
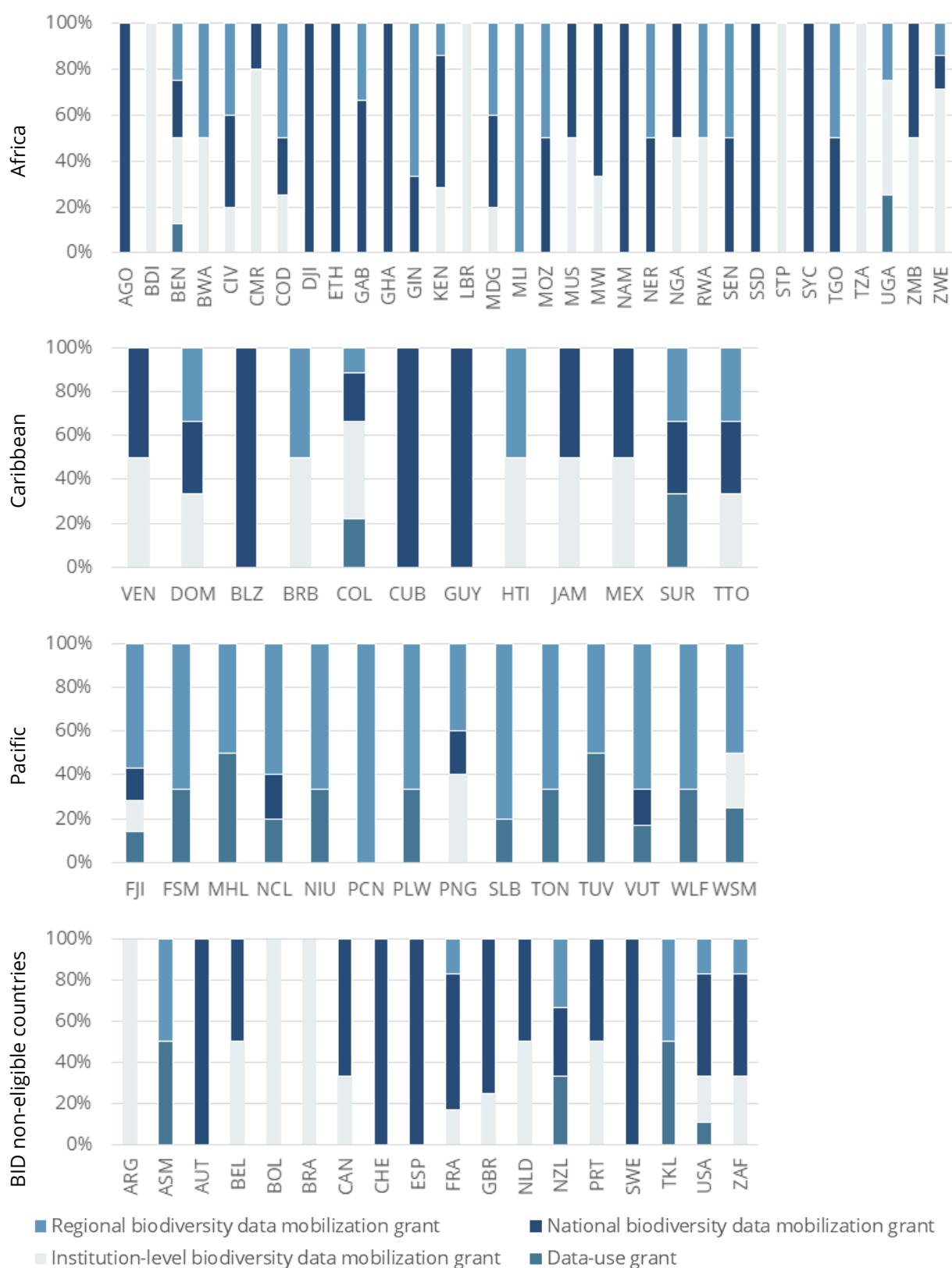
Note: To avoid double-counting, if a project involves more beneficiaries in the same country, only one is considered

Source: CSIL elaboration on portfolio database

3. BID PROJECTS' ACHIEVEMENTS

This section provides an assessment of the results achieved by the project based on the evidence collected from the different pieces of analysis (described in the introduction section, Box 1).

3.1 Results in terms of data mobilisation

Data mobilisation, which entails capturing, digitising, improving, and sharing standardized data, is one of the major goals of the BID Programme. Indeed, through funded projects, the BID Programme aims to increase the availability of biodiversity related data in the three target regions, and so to reduce the biodiversity information gap.

Since its launch, the BID Programme has effectively contributed to increased availability of biodiversity related information. Overall, **BID projects published a total of 703 datasets** and made available about **1.3 million occurrence data records[24]** (out of which 1.1 million georeferenced). Almost all occurrences were published by 106 distinct organisations located in the ACP region, out of which 93 registered during the projects.[25]

As shown in Figure 6, publishing activities follow a cyclical pattern rather that a linear one. Indeed, in 2018 there was a peak in the number of datasets published and after a steady decrease, the number of datasets published has started increasing again

Figure 6 Number of BID datasets published by type of dataset
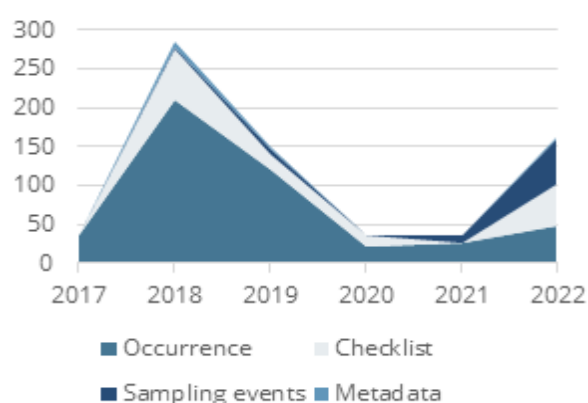
Note: the cut-off date is May 27th 2022
Source: CSIL elaboration on portfolio database

since 2021. The observed cyclicality mostly follows the launch of the calls and the implementation of the funded projects, i.e. in 2018, projects funded under the first phase were either closed or approaching their end date. Thus, it is expected that by the end of 2023, the number of datasets published will further increase, especially occurrence datasets.

Up to date, occurrence datasets (462, 65.7%) represent in fact the most predominant type of dataset, followed by checklists (153, 21.7%), sampling events (80, 11.4%), and metadata (8, 1.1%). Although sampling event datasets represent a minority, their share over the total number of published datasets has increased from 1.4% in 2018 to 35.4% in 2022. They have mostly been published as output of national projects funded in the Caribbean and sub-Saharan Africa in the second phase. The increased availability of this type of dataset is particularly important because - as compared to occurrences datasets - they provide more detailed information on species, e.g. abundance recorded in a sample, that can support researchers assessing the absence of given species from given sites.

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[24] The cut-off date is May 27th 2022.
[25] Only 0.6% of BID mobilised data were published by organisations located in a non-eligible country.

Most occurrence data records have been published though the African calls: about 1 million data records[26] (80% of all BID mobilised data) were mobilised by projects funded in sub-Saharan Africa, out of which roughly 86% (897,298) were georeferenced data. Data were mainly mobilised either throughout human observation (56%) or based on preserved specimen (34%). **The vast majority of records published are of plants** (545,072; 52%) **and animals** (493,242; 47%). From a geographical point of view, these occurrences cover species that are within the sub-Saharan region (99%).[27] This shows the relevance and the richness of biodiversity data in the sub-Saharan region. Despite their key role in the decision-making project for the entire region, BID mobilised data about the sub-Saharan region are very heterogenous in terms of distribution: **nearly 43% is concentrated in only three countries,** namely Mozambique (180,968; 18%), Kenya (136,198; 13%), and Benin (122,269; 12%). When comparing the geographical coverage of BID mobilised data with the one available in 2016, evidence shows that very few data were available about Mozambique and Benin, highlighting the positive impact that the BID Programme had in terms of increased data availability. In this respect, more striking evidence is in Liberia where biodiversity data were available for the first time thanks to a BID project that was funded in the country. Overall, the most active institutions in terms of data publishing are the National Institute of Fisheries Research (IIP) (Mozambique), the Kenya Wildlife Service, and the Laboratory of Forest Sciences (University of Abomey-Calavi).

In the Pacific and the Caribbean, the volume of data records published has been much smaller as compared to the sub-Saharan region: 183,282 data records were published under the Pacific calls and only 79,668 under the Caribbean calls. However, this still represents a great improvement against the situation before the launch of the BID Programme in terms of number of data published within the region. In 2016, data about Pacific and Caribbean countries had been mainly published by organisations in North America and Europe and there were no data registered on GBIF.org and published by organisations located within the regions. Conversely, almost all BID mobilised data about Caribbean and Pacific were published within the region, especially by the University of the West Indies Zoology Museum (UWIZM) and the Caribbean OBIS Node in the Caribbean and by The Pacific Community (SPC) in the Pacific. Despite both regions have both started publishing data within the region with the BID Programme, their publishing activities are somehow different.

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[26] The cut-off date is May 27th 2022.

[27] The remaining 1% of occurrences published by projects funded in sub-Saharan Africa cover species in eligible countries in the Pacific (3 occurrences), in the Caribbean (314 occurrences) and in non-eligible countries (5,677). Out of the 5,677 data occurrences published under BID sub-Saharan calls, nearly 50% cover species in South Africa and the USA.

On the one hand, **BID projects funded in the Pacific regions mobilised by and large georeferenced data on animals in the region building on human observation**. Data mobilised cover 17 distinct eligible pacific countries with 27% of data covering species in Vanuatu (15%) and New Caledonia (12%). Overall, due to the limited technical capacity of the region, mobilised data have been hosted mostly by the Secretariat of the Pacific Region Environment Programme (SPREP) and to a smaller extent by the GBIF France. On the other hand, projects funded in the Caribbean mobilised data on animals (60%) and on plants (32%) mostly based on preserved specimen, and out of all data mobilised, only 69% were georeferenced. From a geographical point of view, **data about the Caribbean region are the most geographically concentrated**. Overall, data cover 29 distinct Caribbean countries but 92% is only about 5 countries, namely Trinidad and Tobago (26%), Venezuela (20%), Suriname (19%), Jamaica (15%), and Guyana (11%). Finally, it is also the region where the lowest share of data is hosted locally. As a matter of fact, **nearly 63% of data are hosted by the GBIF Secretariat**.

Despite the increased availability of data records registered on GBIF.org, evidence from the case studies and the survey suggests that **still many opportunities to publish data are missed** and so that **more data not yet shared is available**. Indeed, BID projects participants feel that time constraints and data publishing capacities hinder them to effectively publish data. Overall, beneficiaries need some time

"Publishing all datasets by or before the end of the project period is among the most challenging aspects faced during the project implementation" (survey)

before being ready to publish data. Consequently, many projects publish data only beyond the grant period. Data publishing institutions sometimes also publish the same dataset multiple times (datasets that are republished, complemented, and enriched), with some additional entries in every new version published. Others keep publishing data either as a follow up or because they keep collaborating with the same partners on the topics covered by the project.

Data published after the completion of the project prove the effort made by GBIF to promote curation of data after publication and institutionalization of data mobilisation/publishing activities with the aim of seeing data publishing activities continue after projects' completion. Although data published beyond the grant period is a signal of the commitment of project participants and their willingness to make data available even if their project is over, providing them with all needed tools and capacities to deliver data on time is of utmost importance since it can contribute to improving their uptake. In the first phase, only 35 have published at least one dataset on the GBIF.org platform and out of them 20 did not publish any dataset throughout their implementation but managed to do so only at a later stage. As shown in Figure 7, timing constraints were an issue particularly relevant for projects funded in sub-Saharan Africa and in the Caribbean under the first phase, that on average published 70% of data records beyond the grant period[28]. In the first call of the Pacific, projects managed to publish almost all data within the grant period probably thanks to the support of the Secretariat of the

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[28] As mentioned above, publishing data after the grant period is not necessarily bad. However, this also points out that more data could be published during (and beyond) the grant period with further support funded data publication Also, during the full proposal drafting phase and especially for regional grants, GBIF now asks to selected institutions/consortia to be more realistic as regards to their expectations with data publication.

Pacific Region Environment Programme that, as mentioned above, has been involved as hosting institutions in multiple cases.

Figure 7 Share of data records published within or beyond the grant period by call
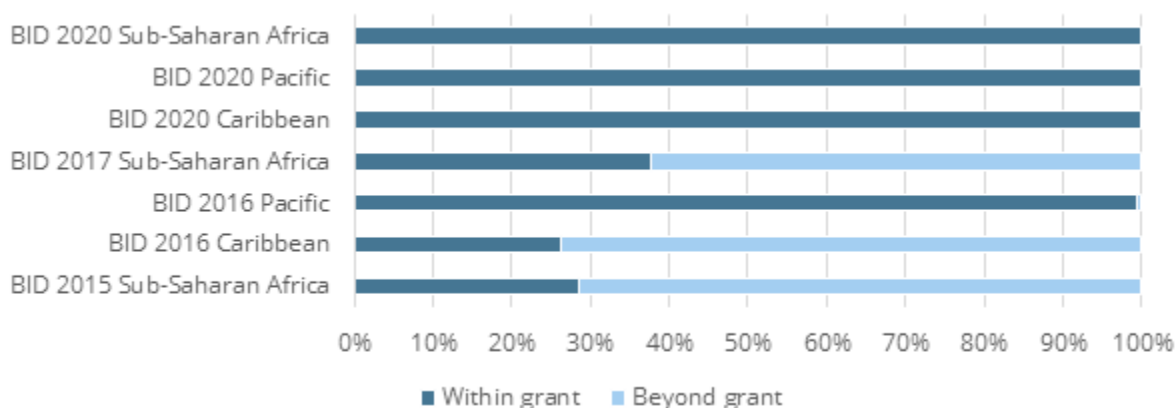
On top of the activities that are needed to digitise and mobilise the data, participants need to familiarise with the process to make the data available on the GBIF.org platform. Finally, they need to find data hosting, which is not always straightforward because sometime host countries either do not have the resources to host their data or, even if they have the capacity, they do not wish do to so for political reasons. Evidence collected confirms that, as participants go through the selection process, they do not fully consider the amount of intensive technical work that is required to manage, format and publish data. They have been often required to adjust budgets and timetables during implementation (for example following the initial GBIF training workshops). There is a tendency (especially amongst research organisations) to assume that sharing of data is something to be scheduled at a later stage, once data collection and research activities are complete while as indicated by GBIF the scope and time of this activity needs to be properly planned in advance.

At the beginning of the BID Programme, these difficulties have caused delays in data publication. It took time to project participants to understand how to standardise the data, clean it, place it in the correct taxonomic level and correct data entries. As an illustrative example, many projects under the first sub-Saharan Africa call got a significant project extension that allowed them to reach their dataset production objectives in a later stage. However, being aware of these difficulties, the GBIF has developed over time guidelines and has provided project participants with support through mentors and trainers. This, together with the requirement to publish at least one dataset before the midterm submission, has resulted into a reduction in the time lag between the start of the project and the publication of the first dataset.

3.2 Results in terms of data use

The rationale behind data mobilisation activities is to increase the availability of biodiversity data **for use in scientific research and policy making**. Evidence from the portfolio analysis,

the case studies, and the survey suggest that BID mobilised data have been increasingly used either as follow up of the projects or by third bodies.

The data made available by BID funded projects has been generating positive knowledge externalities in science, far beyond the expectations. Since 2017, the number of downloads of BID datasets together with the total number of records downloaded has steadily increased (see Figure 8). Overall, users of GBIF.org requested about 1.8 million downloads containing a total amount of 3,113 million data records published by BID funded projects. This provides evidence of the value that BID mobilised data have in the targeted community, and that the increased availability of data has increased the demand for it.

Figure 8 Number of records downloaded and number of downloads over time
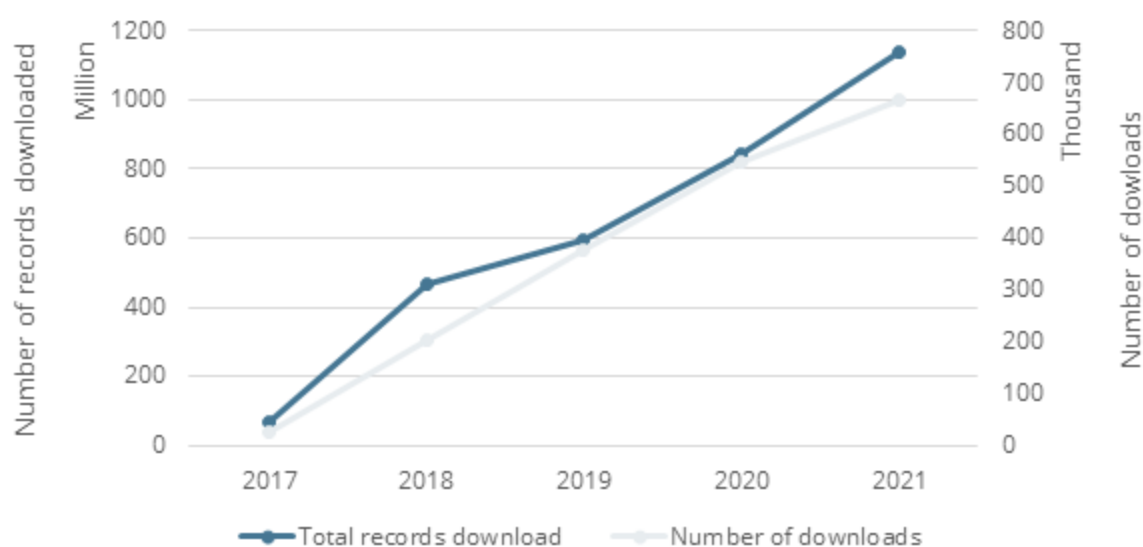
Source: CSIL elaboration on portfolio database

Additional evidence of the importance that BID mobilised data have in the scientific community is given by the large number of publications that have used at least one BID data record. **A total of 715 publications were recorded in the GBIF literature programme that cited BID mobilised data**[29]. Following the focus of BID mobilised data, most of the publications citing the BID mobilised data are in the field of ecology, conservation, and climate change. These are however cross-cutting fields of research and in fact publications recorded in these fields are usually related also to other fields such as agriculture, invasives, and evolution. Although the importance of marine related aspects in the Pacific and the Caribbean regions (as stated in the baseline report), only six publications were related to the topic and none of them was published by an author in an ACP country.

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[29] The cut-off date is May 31st 2022.

Figure 9 Representation of the field of research citing BID mobilised data
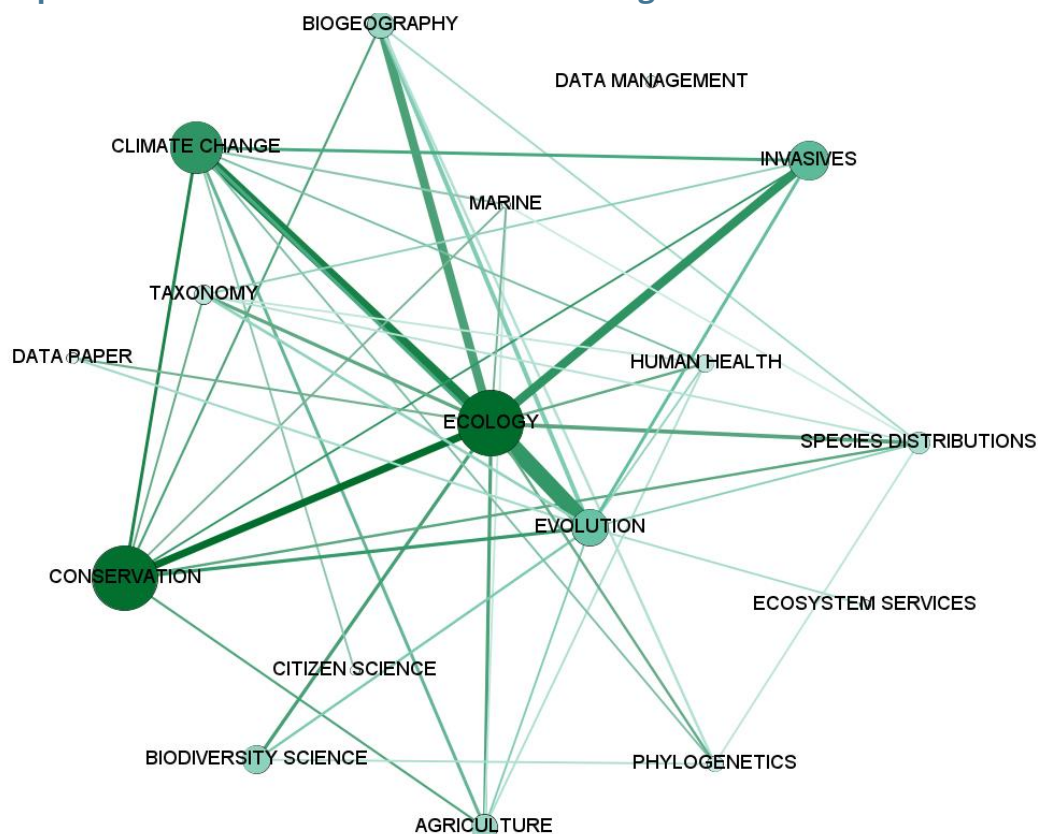
Overall, the **number of publications citing BID mobilised data has tremendously increased** in recent years, raising from 4 in 2016 to 306 in 2021. A lion share of the recorded publications were issued in journals (see Figure 10) and published by authors located in the USA. Also, BID mobilised data has been used in 34 IUCN Red List of Threatened Species reports[30]. Evidence from the case studies suggests that BID participants produced and/or updated Red Lists evaluations based on the data mobilised within their projects.

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[30] The cut-off date is May 31st 2022.

Figure 10 Number of publications citing BID mobilised data by year and type[31]

Legend:
- WORKING_PAPER
- REPORT
- JOURNAL
- OTHER (BOOK, BOOK SECTION, CONFERENCE PROCEEDINGS, GENERIC, THESIS, WEB PAGE)
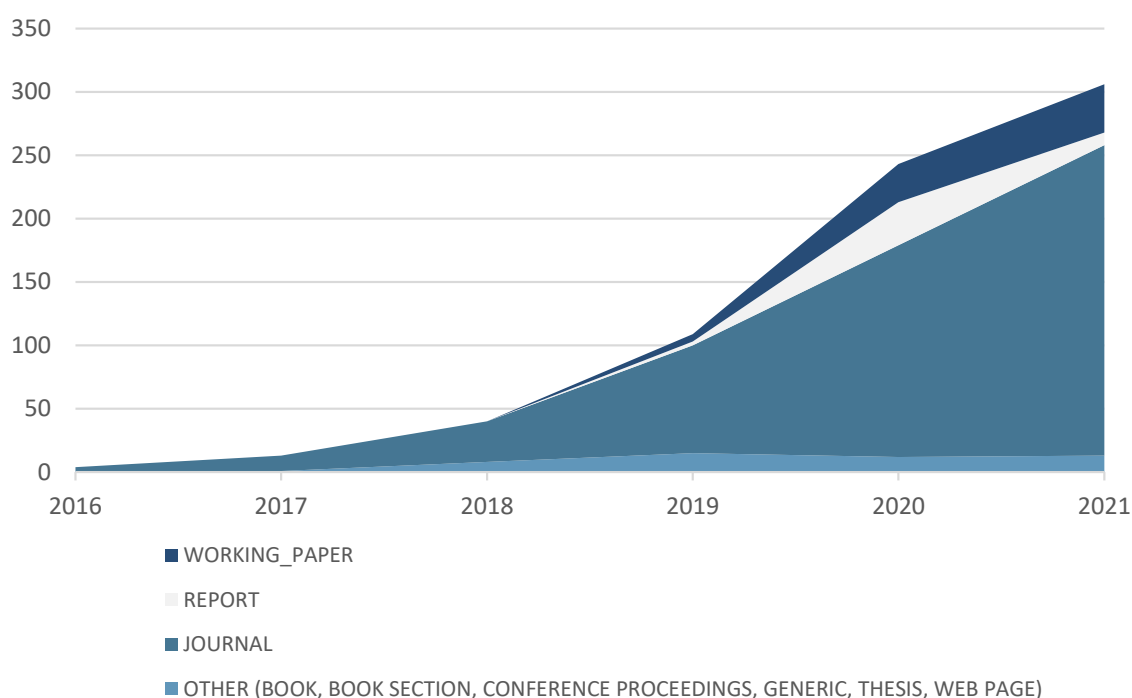
Source: CSIL elaboration on portfolio database

Out of the 715 publications citing BID mobilised data, **479** were **peer-reviewed publications**. As shown in Figure 11, the number of peer-reviewed publications has increased always more as compared to non-peer-reviewed publications. However, BID mobilised data are mostly used in non-ACP countries (see Figure 12), suggesting that while there is an increasing use in biodiversity data about ACP regions, it is still lagging behind in the three targeted regions. Indeed, **about one fifth (95) of all peer-reviewed publications has been authored by researchers in -ACP countries**, mainly in Mexico, Colombia, Nigeria, Benin, Zimbabwe, and Kenya.

Figure 11 Number of peer-reviewed and non peer-reviewed publication over time[32]
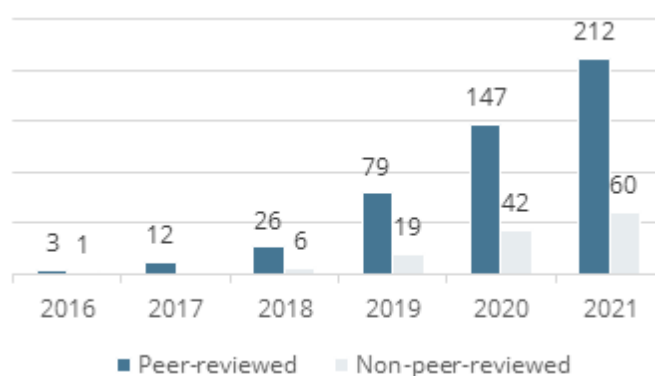
Source: CSIL elaboration on portfolio database

Figure 12 Number of peer-reviewed publication by country of researchers over time[33]
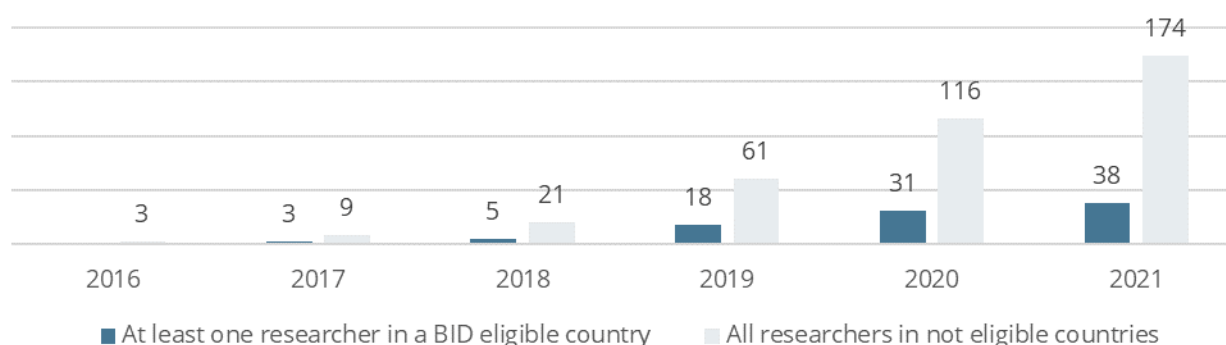
Source: CSIL elaboration on portfolio database

Moreover, as show in Figure 10, BID mobilised data were also used in four conference proceedings. Citing papers and posters were presented in four distinct conferences, namely at a workshop on Visualisation in Environmental Sciences (EnvirVis)" held in 2021, the 9th Biennial Conference of the International Biogeography Society, the INFORMATIK 2021, and the 2018 IEEE 14th International Conference on e-Science (e-Science). In addition, the BID Programme has also been referenced at relevant IPBES (Inter-Governmental Platform for Biodiversity and Ecosystem Services) and CBD (Convention on Biological Diversity) meetings, on the BES-Net platform operated by UNPD on behalf of IPBES, the UN Food and Agriculture Organization platforms, and so on. It was also referenced in an annex to the IPBES Capacity Building Rolling Plan as well as in several documents connected with the post-2020 Global Biodiversity Framework.

Data mobilised by BID projects has fed not only in publication and high level meetings but also in some cases in the policy decision process of targeted countries. Contributing to policy/decision making processes is indeed a shared objective of BID projects. According to the evidence collected though the survey (see Figure 13), this objective has been pursued by BID participants through a wide range of activities but mostly by (i) enabling open access to data which were not publicly available before,[34] (ii) enhancing capacities to use published biodiversity data,[35] (iii) raising awareness about the relevance of biodiversity data,[36] (iv) establishing collaboration with relevant institutions. Other activities, that BID surveyed participants believe may contribute to some extent to regional policy need, concern the production of user-ready analyses that respond to policy questions. These analyses include indicators, biodiversity assessments (such as Red Lists, KBAs, etc.), data summary tables[37], map products (such as species distributions maps or geographical data gap analyses), and more

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[33] The cut-off date is May 31st 2022.

[34] This activity entails digitalising existing information (previously only available in physical catalogues books, herbarium, collections…), creating new datasets and publishing them through GBIF or other national biodiversity information systems, and/or making existing datasets freely accessible online (open access).

[35] This activity entails organising training workshops on biodiversity data use and publication capacities, e.g. with training sessions on how to search and mobilise published data through OBIS or GBIF.

[36] This activity entails inviting policy makers at specific workshops organised by the project.

[37] A data summary table, also called pivot table, uses groups and statistics to transform raw data into a more accessible format. Data summary tables can be used to calculate counts and statistics for unique categories in data using the number fields in a dataset.

complex map products (such as ecological niche models or protected area network). Building consensus between different decision-making bodies was instead perceived by surveyed respondents as a less relevant channel BID project may have contributed to policy/decision making processes.

Figure 13 BID project activities contributing to policy needs
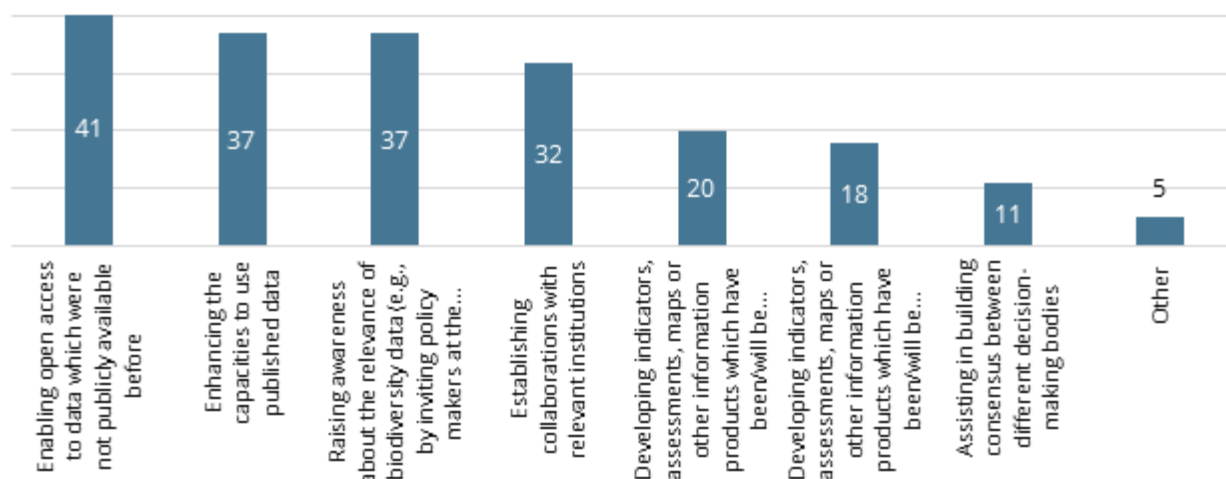
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

Anecdotal evidence is available about the actual and expected **use of BID mobilised biodiversity data** into decision-making processes. A list of examples of how BID projects have contributed to policy decision making is provided in Box 3.

"As more countries use data to develop national prioritisation strategies regarding fight against IAS, the actions will align with national, regional and global biodiversity objectives such as those identified by the CBD." (case study)

Box 3 Examples of BID contribution to policy/decision-making processes or other conservationists and community-based initiatives

The project "*Capacity development for mobilisation and use of biodiversity data on endangered bird species in Kenya*" (BID-AF2020-014-NAC) set up a Biodiversity Information Development research Center (BIC-C) to continue with capacity enhancement activities related to long-term mobilisation of data after the term of the project. This same project also worked with International Foundation for Science and local universities in Kenya to enhance capacities of graduates, PhD and masters' students in using of open access biodiversity data to achieve research needs while enhancing BID data use.

The project "*Expanding the visibility of the Lagos Herbarium through Digitisation and Mobilisation of Plant Specimen Data*" (BID-AF2020-009-INS) organised a two-days workshop dedicated to officials from the Ministry of Environment and Water Resources to enhancing their capacities to publish biodiversity data and to apply such data in conservation assessments (25 policy makers were in attendance). As a result, attendees were able to take better decisions based on the relevant data as regards to conservation strategies to implement for wetlands in the country.

The project "*African Insect Atlas: unleashing the potential of insects in conservation and sustainability research in Africa*" (BID-AF2015-0134-REG, see **Annex VII**) developed checklists, distribution maps and species red lists to assess the status of insects species in Madagascar that are currently used by an ongoing project funded by

the LIFEPLAN Programme from the University of Helsinky[38]. This project's outcomes should be incorporated in land-use planning guidelines in the next few years as it seeks to identifying Madagascar's regions where the greatest efforts in terms of insects conservation actions should be implemented.

The project "*Increasing capacity for conservation of threatened fish species through data mobilization and training*" (BID-AF2017-0206-SMA) mobilised data that were used to support decision-makers in several ways. First, they were used to develop a freshwater biodiversity portal in Uganda that is exploited by decision-making bodies to investigate how sustainable use and conservation of aquatic biodiversity can be supported. Second, the data fed into a range of national reports such as Uganda National State of the Environment Report. Third, the data were used to develop national red list assessments on freshwater biodiversity, to create index for conservation prioritization and to inform indicators for mainstreaming biodiversity in the agricultural sector.

The project "*Strengthening the biodiversity stakeholders' network in Togo*" (BID-AF2015-0004-NAC) (see **Annex VII**) published data that are used by officials from the Ministry of Environment to carry out research and publications. For instance, they were used to design and implement a national moratory of 10 years to ban trees cutting in Togo for a particular species (Pterocarpus). This moratory is part of a national strategy for forest conservation actions called Sustainable Management of Forest Resources National Program (PNGDRF) and, more widely, allowed the update of Togo's National Strategy for Conservation of Biological Diversity (CBD) which complies with the country's commitments under the CBD (National Biodiversity Strategies and Action Plans (NBSAPs) 2011-2020).

The project "*Regional and national alien and invasive species data mobilisation and capacity building in the Pacific*" (BID-PA2016-0005-REG) published data that are expected to be used in the next years to review and adapt critical policy strategies in the Pacific region, especially related to the National Invasive Species Strategy and Action Plan (NISSAP) and the National Biodiversity Strategy and Action Plan (NBSAP) of the Pacific Island Countries and Territories (PICTs). These action plans will serve to fight alien and invasive species and restore natural ecosystems across the region.

The project "*Using Invasive Species and Biodiversity Data for Decision-making in the Pacific region*" (BID-PA2020-003-USE) published data that are now incorporated into the Resilient Ecosystem Resilient Communities (RERC) and Predator Free Pacific (PFP) strategies and that have been used in targeted actions for pest eradication in the Kingdom of Tonga.

Source: CSIL elaboration on projects' documentation

3.3 Results in terms of capacity enhancement

Enhancing capacities and developing human capital has been essential to achieve the data mobilisation and data use objectives described above. To this end, the GBIF Secretariat has organised **capacity enhancement workshops** following each call for proposals to support BID participants developing or improving the skills needed to properly implement their projects. To maximise their effectiveness, the workshops were designed on the capacity needs of key stakeholders as acknowledged through the ad-hoc surveys launched by GBIF to biodiversity data holders and decision makers, the capacity self-assessment submitted by BID projects[39], and evidence collected during the regional meetings.

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[38] LIFEPLAN project : A planetary inventory for Life (Lifeplan | University of Helsinki).

[39] Projects selected under the first phase of BID (2015 – 2020) were required to complete capacity self-assessment tools produced by GBIFS, within the first two months of implementation and at the end of their project. Capacity self-assessment templates were differentiated according to the grant type. While national grant holders completed the national capacity self-assessment tool, regional and small grant holders completed the capacity self-assessment for data-holding institutions. These assessments not only helped the GBIF in tailoring the capacity enhancement workshop at the beginning, but also helped participants to understand better the capacity needs they should address during the implementation of their projects and provide a baseline against which

Since 2015, **11 capacity enhancement workshops have been organised**, out of which seven on data mobilisation and publishing and the remaining four on data use for decision-making that addressed support mechanisms for data users. On the one hand, workshops on data mobilisation provided BID-funded project participants with skills around mobilisation of open-access biodiversity data that could be useful in the implementation of their projects. On the other hand, workshops on data use for decision-making provided them with examples on how mobilised biodiversity data could be used in the development of information products that feed into national policy-making processes.

Overall, **the eleven workshops reached out to 208 unique trainees** representing all 102 BID-funded projects. In most cases, only one representative from each project team attended the capacity enhancement workshops, and only in a few cases, especially in 2020 calls, there were more people from the same project team attending the same workshop. While 66 projects (65%) participated in both workshops, 31 projects attended only the workshop on data mobilisation and 5 only the workshop on data use.

Following data mobilisation workshops, BID funded projects had to earn a **certification** (i.e. badge) for at least one project representative attesting the mastering of the acquired skills.[40] **A total of 103 badges have been issued**: 90 on data mobilisation and 13 on data use. To obtain the certification following Data mobilisation workshops, participants were asked to submit two use cases in English to demonstrate their knowledge concerning planning, data capture, and data publishing. Depending on the overall score obtained, participants could earn a Basic Biodiversity Data Mobilization badge (score 2.5-2.9) or an Advanced Biodiversity Data Mobilization badge (3.0-4.0).

Figure 14 Number of participants to capacity enhancement workshops and badges
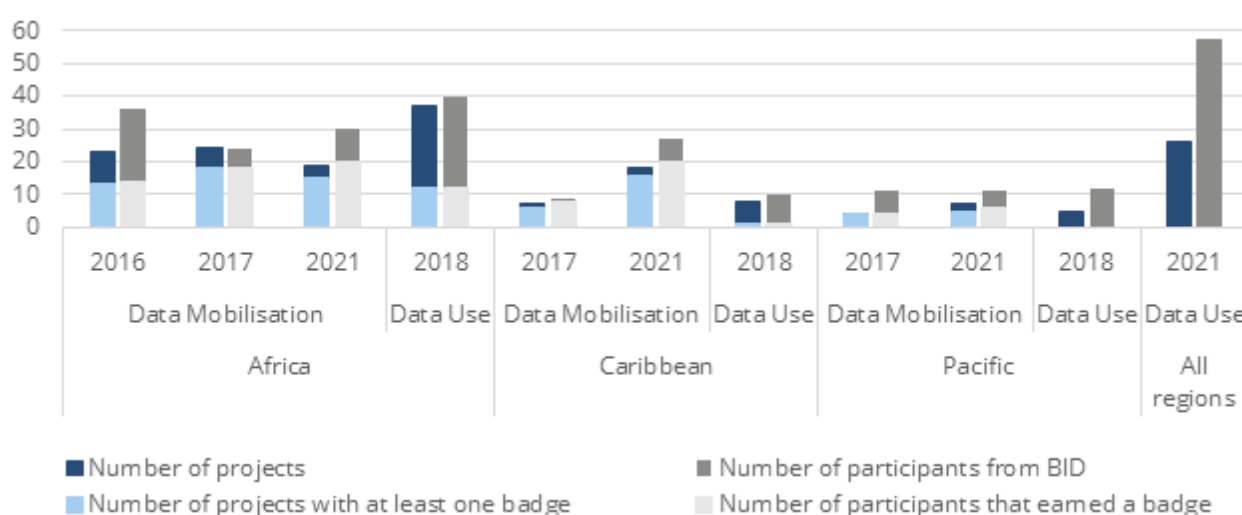
the impact of the funded activities can be evaluated at the end of the project period. Project participants were then asked to complete the capacity self-assessment questionnaire again at the end of the project to measure progress achieved and document the remaining capacity needs.

[40] Only projects funded under the first Sub-Saharan call with small grants were not obliged to gain the certification due to the timing. At the time the workshop was delivered, all small projects were reaching their end and so certifying their competences was deemed less relevant.

Overall, 74% of BID-funded projects managed to earn at least one certification on data mobilisation. As shown in Figure 15, projects funded with institutional level biodiversity data mobilisation grants were the least successful ones in passing the learning evaluation, probably due to the limited project duration as compared to the other grants. Evidence from the survey and the case studies suggests that

> "The badges were earned only after the closure of the projects. We were struggling because the material was only in English and we were not familiar with it." (case study)

among the reasons why project participants either fail the certification or decide not to submit their use cases there are time constraints, conflicting priorities, and linguistic issues.

Figure 15 Share of projects that successfully obtained a badge by call and type of grant

	Institution-level grant	National grant	Regional grant	Data-use grant
BID 2015 Sub-Saharan Africa	30%	70%	100%	
BID 2016 Caribbean	33%	100%	100%	
BID 2016 Pacific	100%	50%	100%	
BID 2017 Sub-Saharan Africa	67%	67%		
BID 2020 Caribbean	86%	100%	100%	67%
BID 2020 Pacific	67%	100%	50%	100%
BID 2020 Sub-Saharan Africa	80%	100%	100%	100%

Although not all participants managed to earn a badge, participants perceive the attendance to the GBIF workshop as highly valuable. For example, one case study mentioned that, even without the certification, attending the workshop allowed acquiring skills useful not only for the project but also for future biodiversity research activities. Moreover, bringing together at least one representative from each project funded under the

> *"Attending GBIF workshops, and so acquiring new knowledge, goes beyond what is certified by a badge" (case study)*

correspondent call for proposals, the workshops provided an opportunity for projects' participants to interact and so to exchange knowledge and establish connections for the future.

Furthermore, GBIF workshops generated additional spillover effects in terms of capacity enhancement. In fact, both types of workshops were conceived as a training that shall "train the trainers": workshops' participants were expected to lead knowledge dissemination efforts within their teams or even to a wider public. Evidence from the survey shows that most surveyed projects have organised **at least one replication workshop**, mainly on data mobilisation and data quality and only to lesser extent on data publication or data use. The vast

majority of surveyed participants stated that they had organised between one and three replication workshops targeting usually up to 30 participants.

3.4 Results in terms of partnerships and community of practice

BID Programme has effectively contributed to the establishment of partnerships between organisations dealing with biodiversity data at different levels, the strengthening of a community of practice, as well as to enlargement of the GBIF network.

3.4.1 Collaborations within and across BID projects

Overall, **503 BID participants belonging to 398 institutions** have been involved in the 102 BID projects assessed. Most institutions involved – 183 (46%) - are based in a non-member country, 93 (23%) in a voting country while 121 (30%) in an associated country. While 81 institutions have been involved in more than one project, only 9 institutions have been leading more than one project. The Natural History Museum of Zimbabwe is the institution which has led the higher number of projects.

Out of 503 BID participants, 91 have been involved as project's leaders while the remaining 412 contributed as partners. On average, projects included five participants, but this number varies significantly across calls and type of grants.[41] Among the regions, projects funded under the Pacific calls usually involve a higher number of participants, probably because of limited capacities and resources within the same organisations, and because of regional specificities[42]. While, as far as grants type is concerned, projects funded with institutional grants, on average, include the lowest number of participants. Regardless of the call and the grant, partners may be involved with different roles, such as data holder, data user, researchers, data publishers, etc, or a combination of them.

Focusing on the lead organisations, five different categories were identified: NGOs, universities, governmental organisations, research centres and museums. Throughout the BID Programme's two phases and seven calls, **40 lead beneficiaries were universities** (or vocational schools), 18 were museums (or aquariums/botanic gardens), 16 were NGOs (or charities and foundations), 11 were governments (or governmental organisations) and 17 were research (training) centres.

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[41] Only one project titled "Data mobilization of the Cartagena Botanical Garden collections" and funded under the second call in the Caribbean was implemented by a single organisation in Colombia that was the data holder of the data mobilised. Otherwise, most projects (49%) were carried out by consortia including up to four different institutions.

[42] As Pacific countries are very tiny compared to countries located in Africa and the Caribbean, implementing biodiversity data projects in these countries implies the involvement of several institutions located in different countries of the region, justifying the higher number of participants by project. Also, due to regional specificities, regional projects are more relevant in the Pacific than in the other eligible regions.

Figure 16 Number of lead beneficiaries by type and calls
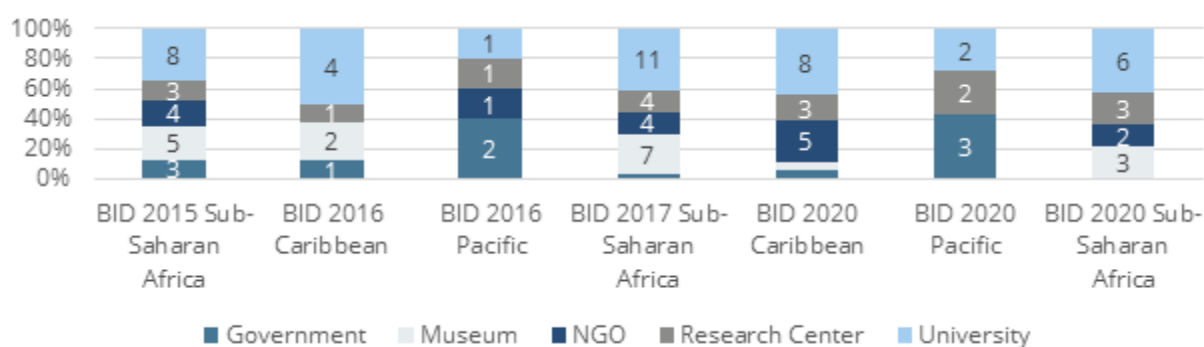
Thus, being implemented by multi-institutional consortia, BID-funded projects have allowed the creation of a network of organisations dealing with biodiversity data. Over time, the network of organisations has enlarged and reinforced. Indeed, about 21% (81 out of 398) of BID-funded organisations have been involved in more projects that could either include the same institutions (network reinforcement) or new partners (network enlargement). As an illustrative example, the Natural History Museum of Zimbabwe (NHMZ) has been involved in six different projects that linked it to 13 different institutions with different "intensities". For example, while the NHMZ collaborated with the National University of Science and Technology in four of the six projects, it collaborated with the National Museum of Kenya only within one project.

Figure 17 provides a graphical representation of the collaboration network that arise following BID projects' implementation. Specifically, each bubble represents a BID participant, and the size is proportional to the number of projects it has been involved in. The lines that link the bubbles highlights whether two organisations have ever collaborated on the same project, and the thickness is proportional to the number projects they have been involved in together. As shown in Figure 17, having organisations involved in more projects has enabled the establishment of a network less and less sparse where an increasing number of organisations are interconnected both directly and indirectly. Among the others, the catalytic role of SPREP in the Pacific region is evident. **SPREP represents indeed a key organisation in the Pacific** because having been involved in many projects in the region, it constitutes a potential bridge between its partners.

Organisations in BID-funded countries have so far applied only to calls launched in their specific regions. This implies, as evident from the graph, that they are directly linked either with organisations located in an eligible country within their region or with organisation located in countries that are never eligible under the BID programme. Hence, **across targeted regions, institutions are only indirectly linked via common partners located in not BID-funded countries.** In other words, it is never the case that an organisation located in a sub-Saharan eligible country collaborates with an organisation in a Caribbean eligible country within a BID project. This is due to the requirements set out within the calls for proposals. However, allowing inter-regional collaborations may be a way to overcome lack of capacities in given countries without the need to necessarily rely on non-ACP countries.

Figure 17 Collaboration network
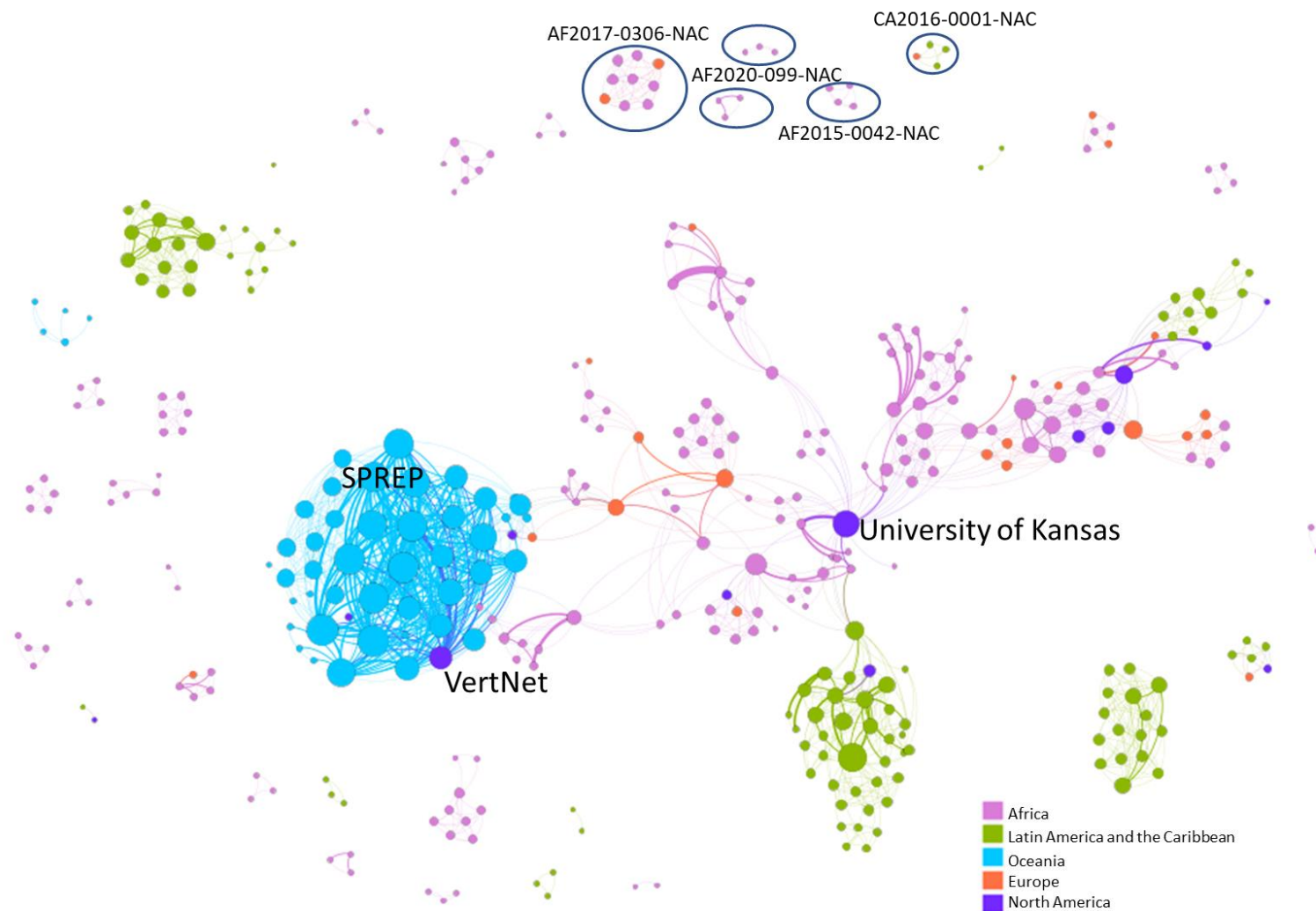
Note: each bubble represents an organisation and the size is proportional to the number of projects it has been involved in. The colour of the bubble corresponds to the geographical region the organisation is located in. The lines shows whether two organisations have collaborated on the same project, and the thickness is proportional to the number projects they have been involved in together.

Indeed, the choice to team up with organisations located in not BID-funded countries is usually driven by capacity needs and data accessibility. As mentioned in Section 2.1, a large amount of biodiversity data related to ACP countries is stored outside the ACP regions, especially in the USA, and needs to be digitised and made accessible under open sharing facilities to policymakers in the targeted ACP regions. Indeed, the main challenge is the accessibility and usability of biodiversity data by local policymakers. In this regard, for at least nine projects, organisations located in not BID-funded countries were involved as data holders. Moreover, sometimes organisations strategically decide who to partner with to ensure data publication. As evidence of this, 24 of the 54 BID-funded organisations located in not BID-funded countries are registered on GBIF.org as data publishers. Similar reasonings apply at regional level when deciding who to partner with within the region and so when opting for a regional rather than an international consortium.

Nevertheless, BID-funded projects do not show specific patterns in terms of preference towards international rather than regional collaborations. Half projects in the BID portfolio were implemented by international consortia and half by regional consortia (see Figure 18). Regional projects are all international because it is required by the terms of reference of the call for proposals that they must be implemented by organisations located in at least two different eligible countries. As far as the other grants are concerned, it seems that institutional and data use projects are more likely to be managed locally while national projects are more likely to involve more countries.

Figure 18 Share of project by type of consortium (regional vs international)
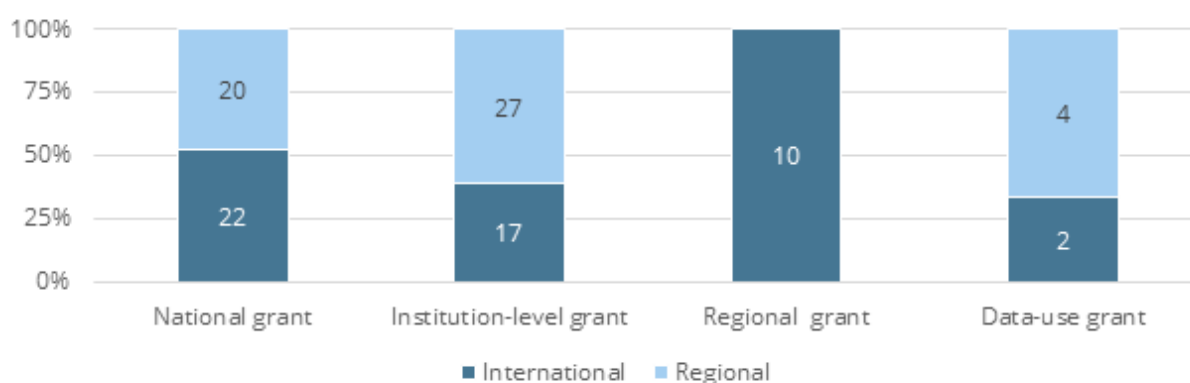
Source: CSIL elaboration on portfolio database

Although the likelihood to observe an international rather than a regional consortium does not depend on the grant type nor on the region where the call is launched, it seems to partly depend on the country of the beneficiaries. Indeed, as illustrated in Figure 19, whenever beneficiaries were located in Angola, Belize, Ethiopia, Guyane, Liberia, Namibia, Seychelles, and Venezuela, projects were managed locally within regional consortia. Conversely, beneficiaries in the Pacific region are almost always in international partnership within the region. As mentioned above, the tendency in the Pacific region to liaise with a higher number of organisations located in different eligible countries within the regions is partly due to the limited capacities each organisation has in-house.

Figure 19 Geographical network of collaborations
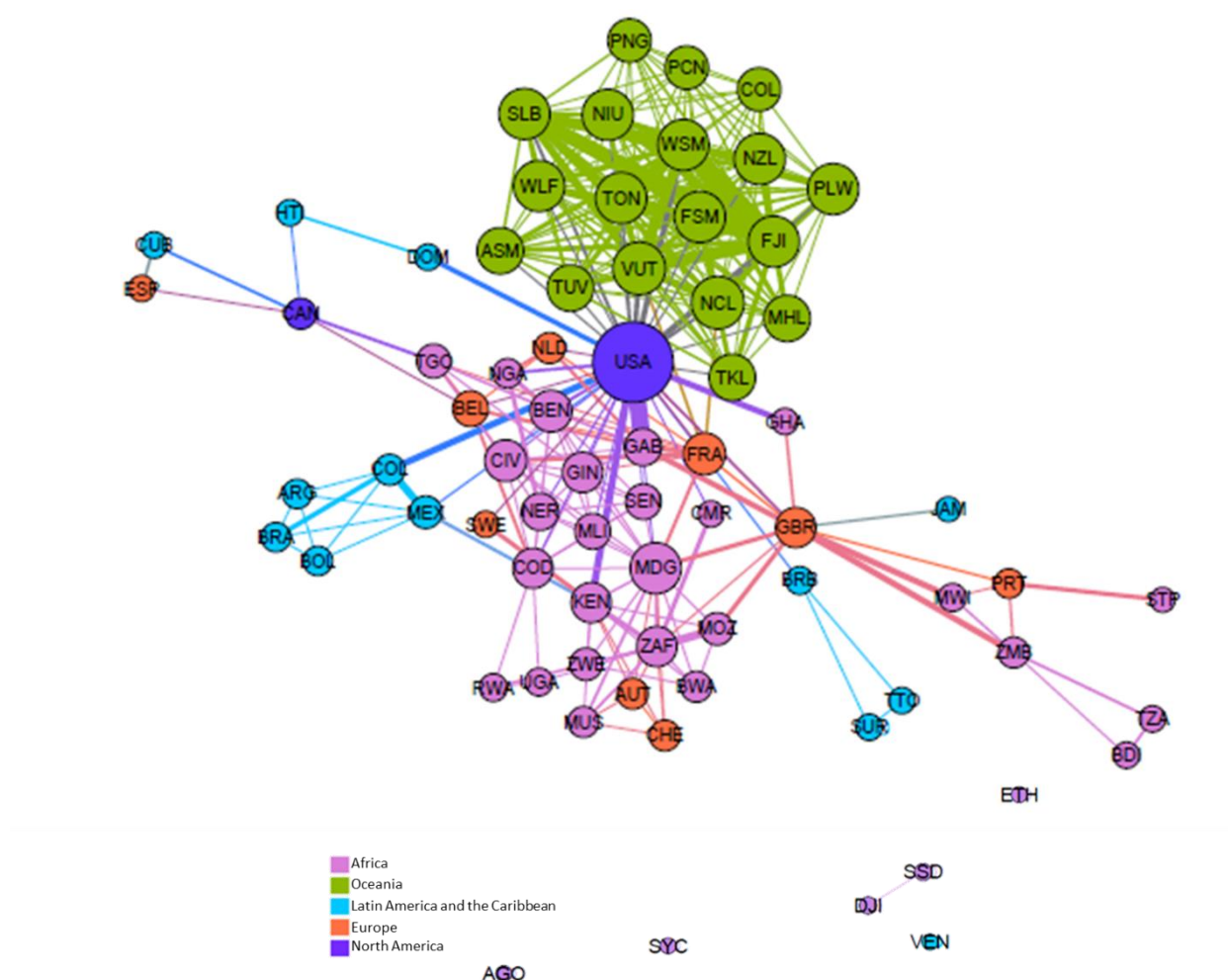
Note: each bubble represents the country where BID-funded organisation are located and the size is proportional to the unique number of projects organisations located in that country have been involved in. The colour of the bubble corresponds to the geographical region of the country. The lines shows whether two countries are connected being the location of two organisations that have collaborated on the same project, and the thickness is proportional to the number of projects organisations in those two countries have been involved in together.

Source: CSIL elaboration on portfolio database

3.4.2 Enlargement of the community of practice

The BID programme increased interest on biodiversity data among participants from more and more countries and led to an **enlargement of the community of practice**. Since 2015, an **increasing number of individual experts has offered to become trainers and mentors**. Currently, the GBIF community counts 123 Volunteer Mentors (43 from targeted countries) and there are approximately 25 new mentors whose application still need to be reviewed. Out of the 123 Volunteer Members, 36 hold the Project Mentor badge[43] and 9

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[43] The Project Mentor badge is awarded to those who have been assigned to mentor one or more funded projects and have provided substantial remote or on-site support to their implementation.

hold the Certified Trainer badge[44]. They are mainly located in Europe (52, 42%) and in Africa (34, 28%). The number of mentors from BID targeted regions has increased over time also as a direct consequence of the BID Programme. Indeed, some of the mentors joined the community upon completion of their BID funded project or after having obtained the Data Mobilization badge. As an illustrative example, one of the mentors for the Pacific Data Use 1 workshop came from a project funded under the BID 2017 Sub-Saharan call and was a participant of the first workshop on data use organized in Africa.

Figure 20 Number of volunteer mentors by region
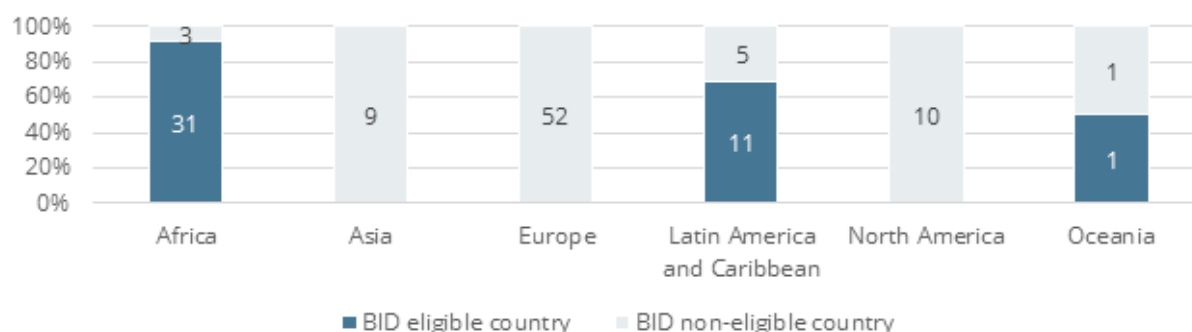
The involvement of BID-funded project team as volunteer mentors is expected to bring value added to the overall community of practice as they can share their experiences through the BID programme with others in the GBIF community and to support future capacity development projects and programmes. Thus, building on this idea, BID project participants that earn advanced badges in the capacity enhancement workshops are specifically invited by the GBIF Secretariat to become mentors to further allow the multiplication effect of capacity enhancement.

Over time, the community of practice has not only enlarged in terms of the number of mentors but also in **terms of the number of data publishing institutions registered on the GBIF platform**. To distribute BID datasets through GBIF.org, institutions needed to be registered on the platform as data publishers, thus either a registered data publisher was already included in consortia or at least one institution had to become so. Overall, since the beginning of the BID Programme in 2015, 1,560 additional institutions have registered as GBIF data publishers, out of which 367 (24%) from BID eligible countries. This increase may however not only be due to the BID Programme as other GBIF programmes have supported biodiversity data publication from all over the world during the same period of BID implementation. It still represents a big achievement for ACP countries given that before the launch of the BID Programme only 56 institutions from ACP countries were registered as data publishers on GBIF.org. Nonetheless, out of the 367 newly registered data publishing institutions from BID eligible countries, 113 published at least one dataset as part of the BID

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[44] The Certified Trainer is awarded to those who have contributed to the development and delivery of capacity enhancement workshops.

Programme, i.e. under open data sharing access. **Therefore, out of all newly registered data publishers in BID eligible countries, nearly 30% published at least one dataset as part of a BID project**. Overall, newly registered institutions that made available data were in Sub-Saharan Africa (77, 68%), especially in Nigeria, Benin, and Ghana.

Figure 21 Number of newly registered data publishers (absolute and those who published at least one BID dataset)
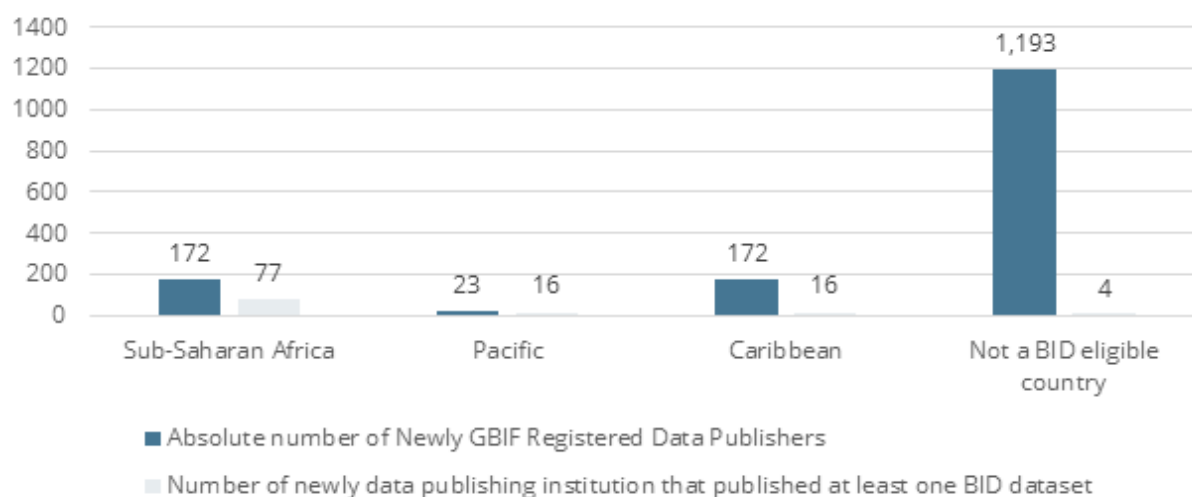
Source: CSIL elaboration on portfolio database

3.4.3 Enlargement of the GBIF network

Being involved in a BID project does not require to become part of the GBIF network. Nevertheless, the BID Programme has – to some extent - contributed to the enlargement of such a network by making countries and organisations joining the GBIF as members. Countries and organisation join the GBIF network though the signature of a Memorandum of Understanding (MoU). When a country or an organisation becomes a GBIF Participant, it also becomes responsible of coordinating activities and initiatives related to biodiversity within the country (e.g. implementing a national biodiversity data mobilisation strategy, meeting biodiversity information needs at the national level, supporting improved management of biodiversity data nationally). The rationale behind the establishment of the GBIF network is that national nodes may help the development of a national network of data publishers and users and support actions to increase national capacity and so ensure sustainability of the activities initiated under the BID Programme.

> *"Signing a MoU with the GBIF is a signal that the organisation/country is willing to commit to progress biodiversity data in the region which provides a lot of visibility and helps with data publishing and Integrated Publishing Toolkit (IPT)"* (case study)

Since 2015, 16 GBIF MoUs were signed in BID-eligible countries. Most of them (14 out of 16; 87.5%) were signed by countries (nine joined the GBIF as Associate Country Participants and five as Voting Country Participants) while only two (12.5%) were signed by organisations. As

shown in Figure 22, sub-Saharan countries were the ones the most active in joining the network. Out of 37 sub-Saharan countries that were not member yet in 2015, i.e. before BID launch, 12 (32%) joined the GBIF network during BID implementation. In the Caribbean and the Pacific, the share of countries that signed a MoU over the total number of countries that were not yet a member is respectively 10% (2 out of 21) and 13% (2 out of 15). Moreover, while in Africa and in the Caribbean, there were some GBIF nodes even before the launch of the BID Programme, in the Pacific, there were no nodes before 2015, signalling the visible contribution of the Programme in raising awareness and interest among Pacific countries.

Figure 22 Geographical coverage of GBIF network in BID eligible countries

Con tecnologia Bing
© GeoNames, Microsoft, OpenStreetMap, TomTom

■ GBIF Participant before the BID launch   ■ GBIF Participant after the BID launch   ■ Not yet a GBIF Participant
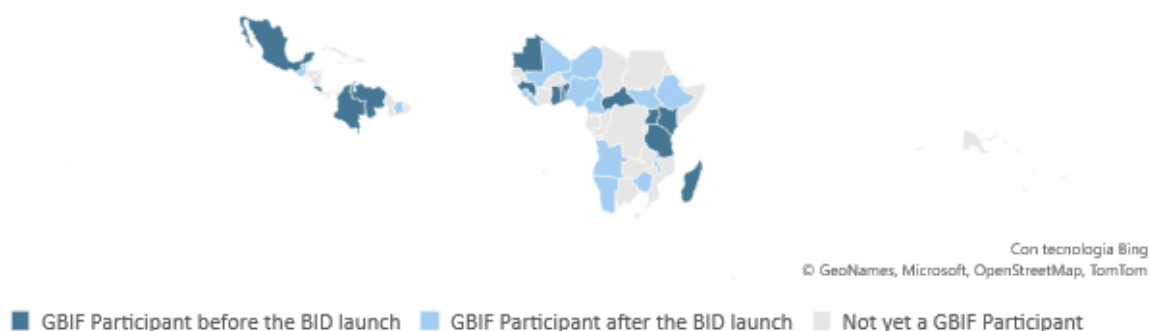
Source: CSIL elaboration on portfolio database

Generally, countries expressed their intention to become a **GBIF Participant as a direct outcome of a BID project** (EC annual reports). Indeed, in some cases, discussions over formal national participation in GBIF were initiated by BID project partners during the project implementations. As an illustrative example, South Sudan joined the GBIF network as GBIF Associate Country Participant in April 2018 and the appointed Head of Delegation of the node was the lead coordinator of a national project funded under the BID 2017 Sub-Saharan call. Likewise, Liberia joined the GBIF network as a GBIF Voting Country Participant in September 2018 and the appointed Node Manager was the lead coordinator of a small project funded under the BID 2017 Sub-Saharan call. An even more striking example is Malawi. There, two projects focusing on strengthening Malawi's Biodiversity Information Facility were funded under the 2017 Sub-Saharan call that led Malawi to move from Associate to Voting Participant. Moreover, as mentioned above, also two organisations joined the GBIF as Associate Participant, namely the Secretariat of the Pacific Regional Environment Programme - SPREP (Samoa, Pacific) and the Horn of Africa Regional Environment Centre and Network (Ethiopia, Sub-Saharan Africa). However, while the latter has never been involved in any project even though it joined the GBIF in 2015, the former organisation, SPREP, not only has been involved in several BID-funded projects and acts as a regional node but is also in charge of coordinating many of the activities of the small countries in the Pacific.

Overall, the BID Programme has partly acted as an entry point to the GBIF membership. The enlargement of the GBIF network in the ACP region has been certainly

supported by the regional meetings[45] and the one-day training on node management organised by the GBIF (EC annual reports). On the one hand, regional meetings that were originally meant to investigate regional and stakeholders' capacity needs around mobilisation and use of biodiversity data, served as an occasion to discuss the results of the BID programme together with its global and regional impacts. On the other hand, the node management training aimed to provide BID participants with key tools to strengthen existing GBIF nodes or to develop potential new nodes. Hence, these events attracted countries and organisations that eventually joined the GBIF. For instance, after the Africa Rising conference in 2015, countries that showed interest in participating in GBIF such as Angola, Democratic Republic of Congo, Niger, and Senegal, were invited as observers to the 22nd meeting of the GBIF Governing Board in Madagascar. Democratic Republic of Congo became a GBIF Participant shortly after the Governing Board in Madagascar.

However, it is worth pointing out that despite its significant enlargement during the BID implementation, the **GBIF network still covers only a tiny share of BID-eligible countries**. In the Caribbean region, 34 BID-eligible countries (85%) are still not represented in the GBIF network despite their involvement in BID-funded projects. While the BID programme funded projects implemented by organisations located in Barbados (2), Belize (1), Cuba (1), Dominican Republic (3), Guyana (1), Haiti (2), Jamaica (2), and Trinidad and Tobago (3), these countries are not yet participating in the GBIF network. Likewise, 17 BID-eligible countries (89%) in the Pacific and 31 (58%) in Sub-Saharan Africa have not decided to become GBIF members yet.

Moreover, there are some indications that GBIF node are sometimes not very proactive in establishing relationships with key stakeholders in the region. Evidence from case studies indicates that communication between the node and the project beneficiary has been minimal at best. For this reason, some case studies show that beneficiaries have not seen any clear benefits of having an established GBIF node in their respective countries. Even though the nodes have accessed to decision making bodies and often hold talks with government ministries about expanding biodiversity data mobilization, project leaders were not at all able to benefit from this relationship since information and resources were not being passed down from the node to the primary stakeholder. When asked about ways to improve the GBIF node, project leaders indicated that they would wish representatives from their institution to take part in the country's node to improve communication.

3.5 Results in terms of sustainability of biodiversity data mobilisation and use

Ensuring the **sustainability** of BID projects' impacts is an issue which both GBIF and BID participants pay attention to. The evidence collected showed that this has been occurring along three main dimensions, namely by means of (i) follow-up projects taking over the results achieved with BID projects; (ii) new collaborations (informal or formalised through

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[45] A total of nine regional meetings were organised between 2015 and 2021.

agreements) arising between participants of different BID projects; (iii) dissemination activities to raise awareness on the importance of biodiversity and data availability.

Nearly 56% of surveyed participants indicated that they had created **synergies and linkages between the BID projects and other projects**. Overall, evidence from the survey suggests that spillover effects take place because project participants capitalise both on the experience and the knowledge acquired and, on the deliverables, (especially data) of BID projects. On the one hand, synergies can occur between projects funded by the BID Programme and take various forms. For example, in few cases, project participants have used the results of projects implemented in the first phase to launch follow-up study in the second phase. On the other hand, synergies can occur also between BID projects and projects funded by other programmes and institutions. For example, one surveyed respondent has indicated that, building on the data mobilised within the BID project, an online data platform has been developed in the context of another project.

"The BID project has enabled multiple new collaborations both at local and international level" (survey)

Moreover, surveyed participants also indicated that often **new collaborations and partnership** have been set up to ensure long-lasting impacts of BID projects. Also in this case, collaborations may be established both between BID participants, or with institutions that are not funded by the BID Programme. Among the collaborations, there is evidence of institutional, national and regional networks/consortia established to support biodiversity data sharing and address key policy needs. In particular, BID projects mostly established informal networks at national level between data holders and users to explore potential future collaborations on data sharing. Some projects also established this kind of informal networks to create groups of taxonomic experts in order to generate data-based evidence documents for decision makers. Some surveyed participants also indicated that they have started collaborating with ministries and other institution (not being part of the BID programme) building on the data mobilised within the project. In some cases BID project partners signed **data sharing agreement** to keep producing data together or more generally to keep collaborating even after the project completion. Likewise, to ensure that data keep being updated and published, many surveyed participants noted that they had adopted data publishing processes.

Additionally, sustainability of projects' impacts is also ensured through **dissemination activities**. In some cases, project participants keep disseminating the results of their projects also beyond the grant period by presenting their activities in academia while accessing biodiversity data held by universities. For instance, one project presented its activities to a Masters class doing Conservation Biology at the University of the Witwatersrand. Other examples of dissemination activities include workshops to national biodiversity data stakeholders to lay the foundations for a national approach of biodiversity data-sharing and promote evidence-based decision making. Evidence collected also highlights that BID participants support themselves one with the other to ensure wider project impacts, especially by assisting in workshops organisation and communication of

projects' results through webinars and social media. Specifically, participants that have already carried out these activities assist those have not yet done so. Other types of support among BID participants include providing experienced staff on biodiversity data training to projects' workshops attendees.

Figure 23 Type of activities implemented to ensure long-lasting impacts
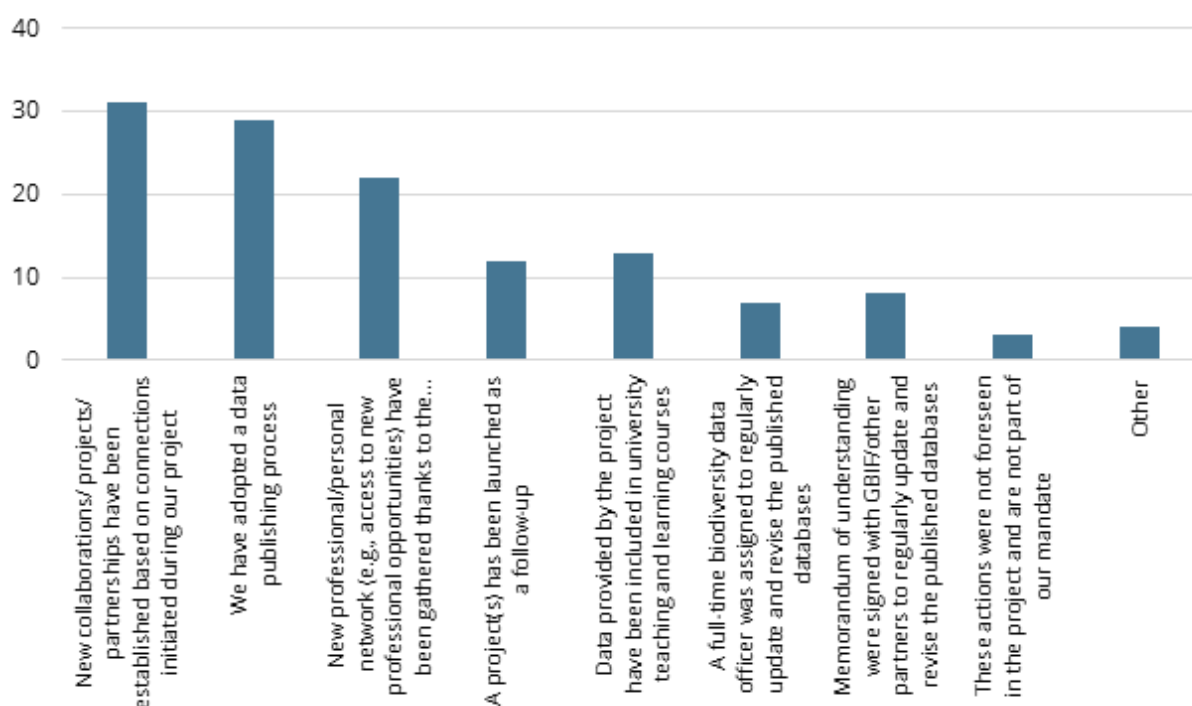
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item. Multiple answers were allowed.

Additionally, evidence from the case studies has shown that some projects have foreseen also **more specific solutions** to ensure the long-term impacts of their projects. These include, for instance, the creation of an **ad-hoc committee** to follow-up project's activities, application for **additional grants** to continue financing activities launched by the BID project, the establishment of **ad-hoc portal** for data sharing, the **signature of a MoU** (ensuring continuous update of data), **training and replication workshops**.

On top of the effort put by project participant, also the GBIF is involved in activities to support the sustainability of BID projects. For example, GBIF provided regional IPT for data sharing and helpdesk services through the regional support teams. Also, it has been organizing or participating to **fundraiser and awareness events**, that give BID participants the necessary exposure to receive funding from various global funding sources and international institutions. For instance, at the IUCN Congress, an event that was organized in 2021 in Marseilles (France), the GBIF was represented, and a large number of donors and high-stake individuals were present and contributed to GBIF's cause.

Finally, the sustainability of BID projects' impacts is further boosted by in-region contractors.

As mentioned in section 2.2, regional contractors are expected to i) build up in countries expertise, ii) provide support to BID participants also beyond the grant period, iii) strengthen the local engagement towards GBIF, and iv) build a stronger community of practice across the targeted regions.

> *"As first participant in a GBIF project, we want to highlight the importance of the technical assistance and follow-up as part of the BID regional project support team"* (desk research)

3.6 The contribution to INTPA and other wider objectives

Tackling climate change, biodiversity loss, land degradation and drought, coastal erosion, overexploitation of natural resources (including water and forests), and unplanned urbanisation are high on DG INTPA agenda in its effort to contributing to the achievement of sustainable development goals (SDGs). Specifically, the strategic plan adopted by DG INTPA for the 2016-2020 period focused on three main areas: (i) conservation, (ii) green economy and (iii) better governance. By supporting the increased availability of digitised biodiversity data, the BID Programme has widely contributed to the objectives of DG INTPA[46] in terms of "Climate Change, Environment, Energy" (Theme 2) and "Digital and Data Technologies" (Theme 3).

> *"This Red List evaluation will allow the Ministry of Environment to design and adapt the political agenda related to epiphytes conservation actions in the country"* (case study)

Indeed, evidence from the case studies shows that almost all sampled projects have digitised natural history collections and that the mobilised data are expected to enhance regional capacities to conserve, restore and sustainability manage the species. This is further confirmed by the evidence collected through the survey. The majority of respondents to the survey (83%) states that the project they have been leading is directly or to some extent related to promote the conservation, restoration and sustainable management of natural resources and ecosystems (e.g. protection of migratory species in accordance with CMS convention). 60% declares that their project contributes to developing strategies to adapt to climate change and reduce greenhouse gas emissions while 57% state that they are contributing to developing capacities in the transition toward green and circular economies. Also, 89% of respondents declare that their projects are contributing to improve digitalisation of natural history collections.

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[46] The primary objective of DG INTPA - as defined in Articles 208 to 210 of the Treaty on the Functioning of the European Union (TFEU) - is to reduce and, in the long term, eradicate poverty in developing countries. However, in line with the objectives set out in Article 21(2) of the Treaty on EU (TEU), it also pursues the objective of fostering sustainable development of developing countries. It contributes, inter alia, to face global environmental challenges, including biodiversity loss.

Figure 24 BID projects' alignment with Themes 2 and 3 of INTPA strategic plan, by goal
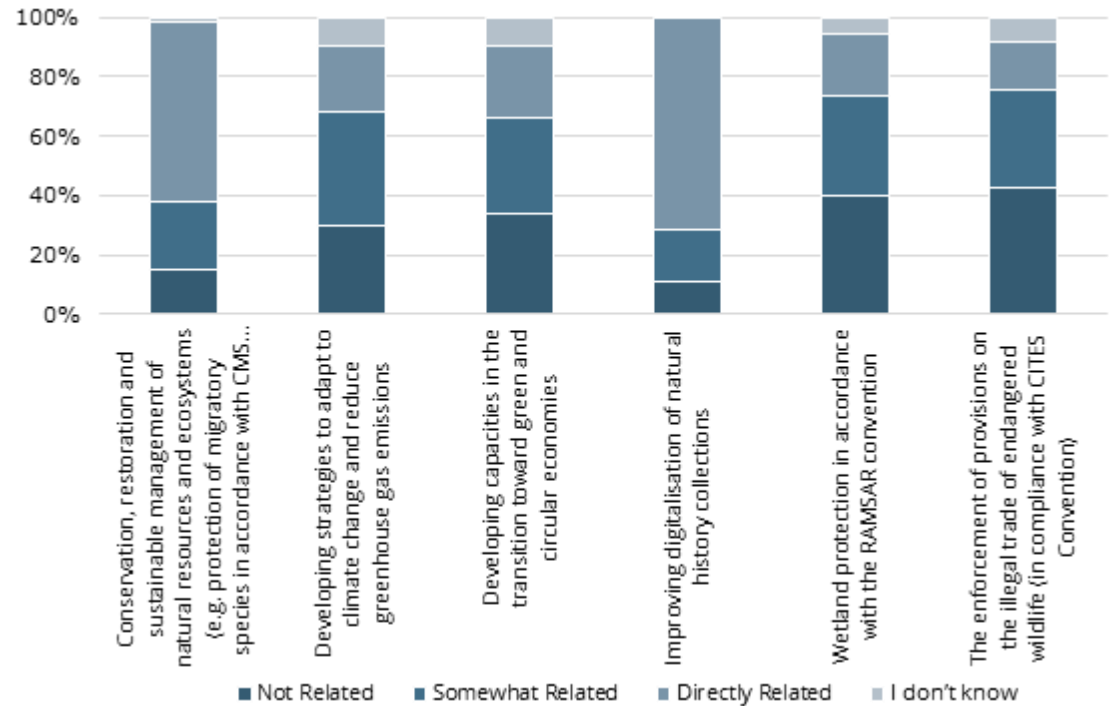
Source: CSIL elaboration on survey data. Note: the bars indicate the share of respondents.

Conversely, BID projects are less likely to contribute to the objectives of DG INTPA as long as pursuing partnership (Theme 1) is concerned. While BID projects have favoured the establishment of various collaborations (see section 3.5.1), the resulting collaborations are usually not as meant by the INTPA strategic plan.

Figure 25 BID surveyed projects (expected to) contribute to Theme 1 of INTPA Strategic Plan
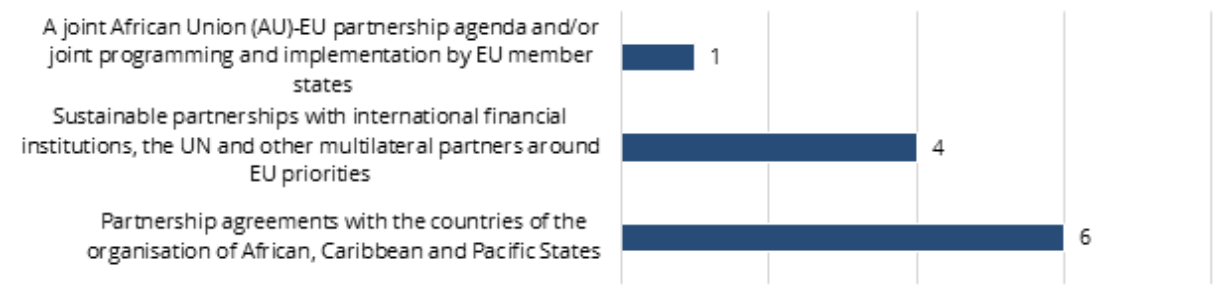
Source: CSIL elaborations on survey data. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

According to DG INTPA strategic visions, **pursuing partnerships** (Theme 1) would entail EU to (i) concluding and operationalising association agreements with ACP countries, (ii) concluding and operationalising new joint African Union - European Union Partnership agenda reflecting mutual and global interests and values, (iii) building sustainable partnerships with International Financial Institutions (IFIs), the UN and other multilateral partners around EU Priorities and in achieving collectively the SDGs. Overall, only 21 projects

have involved institutions from the European Union. Moreover, as shown in Figure 25, a limited number of surveyed participants indicated that their project has enabled (or is expected to enable) partnership agreements with the countries of the organisation of ACP States, or sustainable partnerships with IFI, the UN and other multilateral partners around EU priorities, or a joint AU-EU partnership agenda and/or joint programming and implementation by EU member states.

Finally, according to survey respondents, while contributing to the specific objectives of DG INTPA Strategic Plan, BID projects are specifically **contributing to progresses in the achievement of the UN Sustainable Development Goals (SDG)**, particularly in terms of environment and climate change adaptation. The SDGs mainly addressed by BID projects, namely SDG 15 "Life on Land"[47], SDG 13 "Climate Action"[48], and SDG 14 "Life Below Water"[49], are very aligned with the focus of BID mobilised data, i.e. plants, animals, marine species, and so on. Furthermore, in line with the results shown above, surveyed participants indicated that their projects were contributing to the SDG 17 "Partnership for the goals"[50] only in a limited number of cases.

Figure 26 BID contribution to the achievement of Sustainable Development Goals
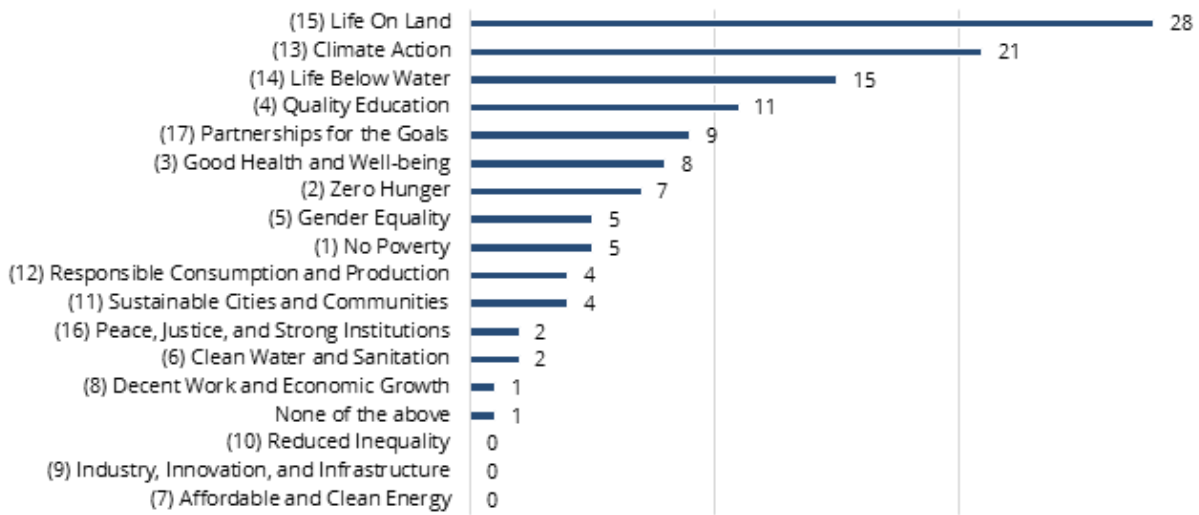
Source: CSIL elaboration on survey results. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

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[47] Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

[48] Take urgent action to combat climate change and its impacts

[49] Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

[50] Strengthen the means of implementation and revitalize the global partnership for sustainable development

4. EFFICIENCY OF BID ADMINISTRATION

This section focuses on the selection and implementation phases of the BID Program with a view to shed light on the efficiency of the process and the main challenges phases by BID participants.

4.1 The selection phase

The selection process of BID projects is carried out by the GBIF Secretariat and is structured in eight steps (see Figure 27) which last around one year. It starts with the launch of **call for proposals** that are designed based on the objectives of the BID Programme and the steering committee's discussions. Each call describes the categories of grants offered, the types of projects eligible for funding, the application procedure, and deadlines. It is often translated into the local language to increase participation and is open to all ACP institutions that meet the eligibility criteria[51]. Calls for proposals are posted on the GBIF website and announced through different channels, including online platforms, mailing lists, newsletters, etc. Overall, based on survey responses, the network of contacts and 'regional meeting/webinar organised by GBIF' are the major channels through which participants learn about the launch of the calls while it is unlikely that this occurs through local NGOs, newsletters as well as educational institutions.

Once the call is launched, interested parties submit a **concept note** indicating the grant type they are applying for, project's objectives, activities, partners, and collaborators. Then concept notes go through an **initial screening** that serves as eligibility check and that is carried out by an impartial committee. The goal of this screening is to assess whether the concept note falls within the scope of the call. Projects that fall within the scope reach an impartial **pool of reviewers** where three independent reviewers (two external and one from GBIF) assess the concept notes independently and assign scores anonymously to each application based on various criteria. For example, the reviewers assess the design of the concept note, the relevance of the concept note's

Figure 27 BID selection process

1. Call for proposals

2. Concept notes

3. Initial screening

4. Pool of reviewers

5. Selection panel

6. Invitation to submit a full proposal

7. Full proposal

8. Secondary screening

9. Pool of reviewers

10. Selection panel

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[51] The lead organization has to be located in an eligible country (https://www.gbif.org/article/y4yos8JwOVccTRuS1kYRD/bid-2020-eligible-countries-and-territories) and all the activities proposed should be not-for-profit.

objectives and priorities, the choice of consortium partners and collaborators, and the amount of co-funding offered. Reviewers also provides feedback on these evaluation criteria. The GBIF Secretariat then compares the scores of the different reviewers and assesses the deviation between the scores given. Afterwards, the concept notes are shared with the selection panel which consists of external experts plus a representative of the GBIF[52]. The selection panel provides feedback on the concept notes received and makes recommendations on the scoring performed by the reviewers and the review carried out by the GBIF Secretariat under the previous phases, e.g. regarding geographical balance between the selection applications. All applications and documents are thus reviewed once more by the selection panel which makes the final decision regarding the selection of applications. Projects invited to submit a **full proposal** receive an invitation including recommendations and conditions which should be implemented to qualify for the second round of the selection process. An online Q&A session is also offered to projects' applicants to ensure that they successfully complete the full proposals. Projects then go through a **second screening** to ensure they still fall within the scope of the BID Programme after implementing the selection panel's suggestions (including also potential mergers amongst projects). This implies that the full proposal submitted by the projects are evaluated and scored again by a pool of **independent reviewers**. As in the first stage, projects are then assessed by the **selection panel.** The selection panel takes into consideration the scores attributed to the full proposals by the independent reviewers as well as additional criteria to ensure balance between new partners and old, type of data mobilized, geographic coverage, etc before recommending projects to be selected for funding and to officially become part of the BID portfolio of projects.

Since the launch of the BID Programme, the GBIF Secretariat had to change and develop its capacity to **manage an increasing number of projects** as well as to ensure **consistency** during the selection process. In particular, the increasing number of concept notes received,

> *"Getting enough internal and external experts to manage this huge number of submissions is a challenge since it is on a voluntary basis"* (interviews)

especially in the last two African calls, has required GBIF to find a high number of internal and external experts available – on voluntary basis – to review the applications. Moreover, during the first phase of the programme, it was found that a high proportion of concept notes were not in line with the scope of the programme. This misalignment has been reduced over time thanks to the increasing understanding within the target regions of what is expected from data mobilization projects as well as thanks to the efforts addressed by the GBIF to fine-tune the overall selection process (e.g., by cross-checking the disparities between different reviewers, developing guidelines and manuals on how to perform the assessment, etc.). The

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[52] It is important to note that the people composing the pool of reviewers and those composing the selection panel are not the same persons. However, the members of the selection panel are the same for the concepts notes and the full proposal review.

application procedure has also been improved and simplified over the two phases by using online platforms for submission, grant management software, manuals, etc.

Overall, the evidence collected show **appreciations for the two-step process** of applying for BID funding as it gave participants the opportunity to refine some of the project activities and rethink some of their proposed methodologies. This holds true among both surveyed BID participants and surveyed unselected participants. As shown in Figure 28, amongst the

> *"The feedback provided by the GBIF selection committee were really useful and helped us to fine-tune the project in view of the full proposal submission"* (case study)

types of support provided by GBIF, the **feedback provided by the reviewers (external and internal) and the selection panel** is found to be particularly useful by all surveyed applicants. Moreover, evidence from case studies shows that in some cases BID participants have also relied on the support of external consultancy services during the proposal designing phase to ensure the submission of a relevant and suitable application fitting with BID thematic priorities.

Figure 28 The usefulness of GBIF support during the selection phase
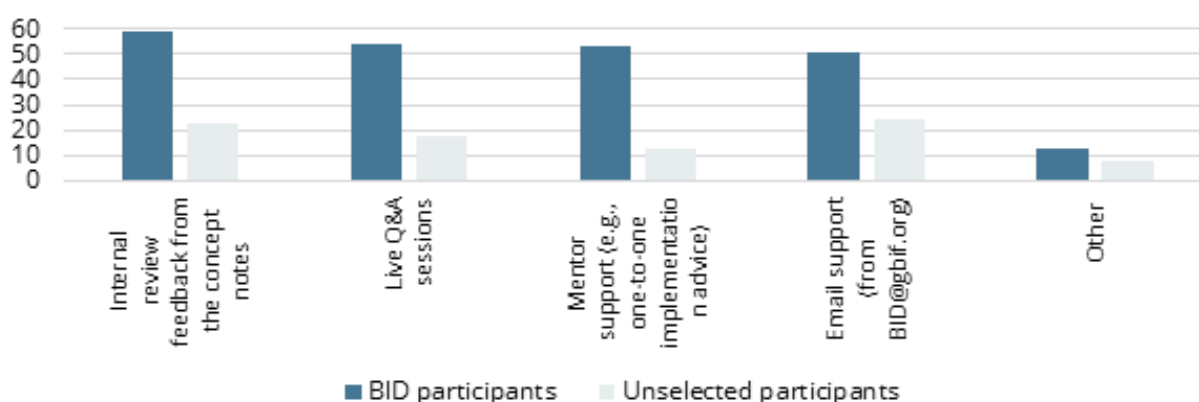
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

Evidence from case studies suggest that the application procedure is found to be easier by those applicants with previous experience of application to BID programme and/or to other GBIF projects. Nevertheless, only one case study that was involved in both phases points out that the changes introduced with the application processes during the second phase of the BID programme made the whole process more complex. Some project managers felt there was a higher demand for BID Programme funding in their region, which made the process more competitive. Interviewees also point out that many of the questions in the full proposal template were unclear, too general, and difficult to answer and that further guidance from GBIF would have eased the process. Furthermore, evidence collected through the surveys confirms that the most challenging aspects perceived by the BID participants during the preparation of the proposal are setting up and **coordinating the partnership**, **preparing the budget,** and **drafting technical contents**. Conversely,

preparing the workplan or addressing comments of reviewers are not perceived as big challenges.

Figure 29 Main perceived challenges faced during the selection phase (concept note and full proposal)
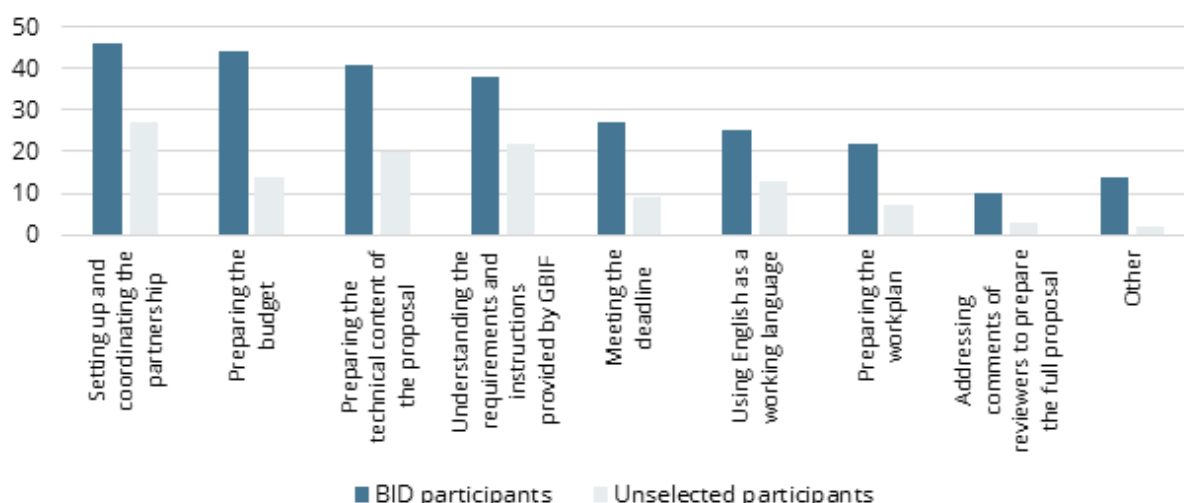
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

4.2 The implementation phase

Throughout the implementation phase, the GBIF Secretariat has been supporting BID participants in various ways, from delivering workshops, to offering mentoring activities, to establishing a new portal and so on. In particular, the BID coordination team - involving GBIF programme officers, Programme coordinator and representatives from Admin and Finance departments – has been responsible for the administration of the portfolio of BID projects and for ensuring that the BID projects were sticking to the rules of the contract and the mandatory data requirements. To support the implementation of their projects, over the two phases of programme's implementation, funds have been used to organise capacity enhancement workshops for project leads on data mobilisation and data use. GBIF has also supported project participants by setting up of a helpdesk assistance, recruiting mentors, delivering webinars and workshops (e.g., to teach project partners how to submit and write financial reports, how to publish data through GBIF, how meeting standard during data mobilization, data use) etc. To monitor the implementation of the projects, GBIF has been asking the project leaders to submit progress reports. During phase one of the programme, all BID grants (small, national, and regional) were required to submit an early progress report, a midterm narrative report, and a final narrative report (in addition to all financial reports)[53].

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[53] When phase two of the BID Programme started, it was decided to remove the early progress report requirement for all small (institutional), national and regional grants due to the lack of significant progress at the early stages of project

Finally, to ensure a smooth running of the BID Programme as a whole and its objectives, GBIF has held biweekly coordination meetings and has used GitHub depositary to track the implementation of the various activities listed in the BID LogFrame. Coordination meetings were meant to figure out the state of implementation of each activity and so to properly dedicate time and resources. Steering committees have also been held once a year, bringing together representatives of funders, regions, of different relevant international projects (e.g., BIOPAMA). The Steering committees served as an occasion to review the progress of the implementation of the overall BID programme and discuss any possible need to revise the LogFrame, budget allocation or forecasted activities.

In 2019, the GBIF grant portal was also introduced with a view to enhance the implementation and monitoring of the projects. The portal allows to store project proposals and documents in one place as well as automatically send reminders for important deadlines (e.g. submission of financial reporting, etc.). Before that, tracking and monitoring occurred through Excel and Words document sent by email to GBIF. With the introduction of the GBIF grant portal, project leaders are now required to submit an official formal request to amend their proposal on the GBIF grants portal if they want to extend the implementation period of their project or if they want to make budget changes that are above 25% variance of the initial agreed budget.

The evidence collected show an overall positive assessment for the support provided by GBIF while drawing the attention towards specific challenges which have been faced despite the support received.

Amongst the support provided by the GBIF during the implementation phase, **regional meeting facilitated by GBIF** and the support provided by the **mentors** have been particularly appreciated by surveyed BID participants. Actually, the increase of regional volunteer mentors enabled GBIF to provide targeted mentoring help that have deep understanding of local context and can overcome language barriers. Looking at the capacity enhancement workshops, the ones focused on **data mobilisation** and **data publishing** were found to be particularly useful.

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implementation. But for the newly introduced data-use grant, added in phase two of BID, the early progress reporting requirement remained, since this grant builds on existing relationships between biodiversity data-holding institutions and decision-makers, instead of establishing new ones like with the three other grants.

Figure 30 The usefulness of GBIF support during the implementation phase
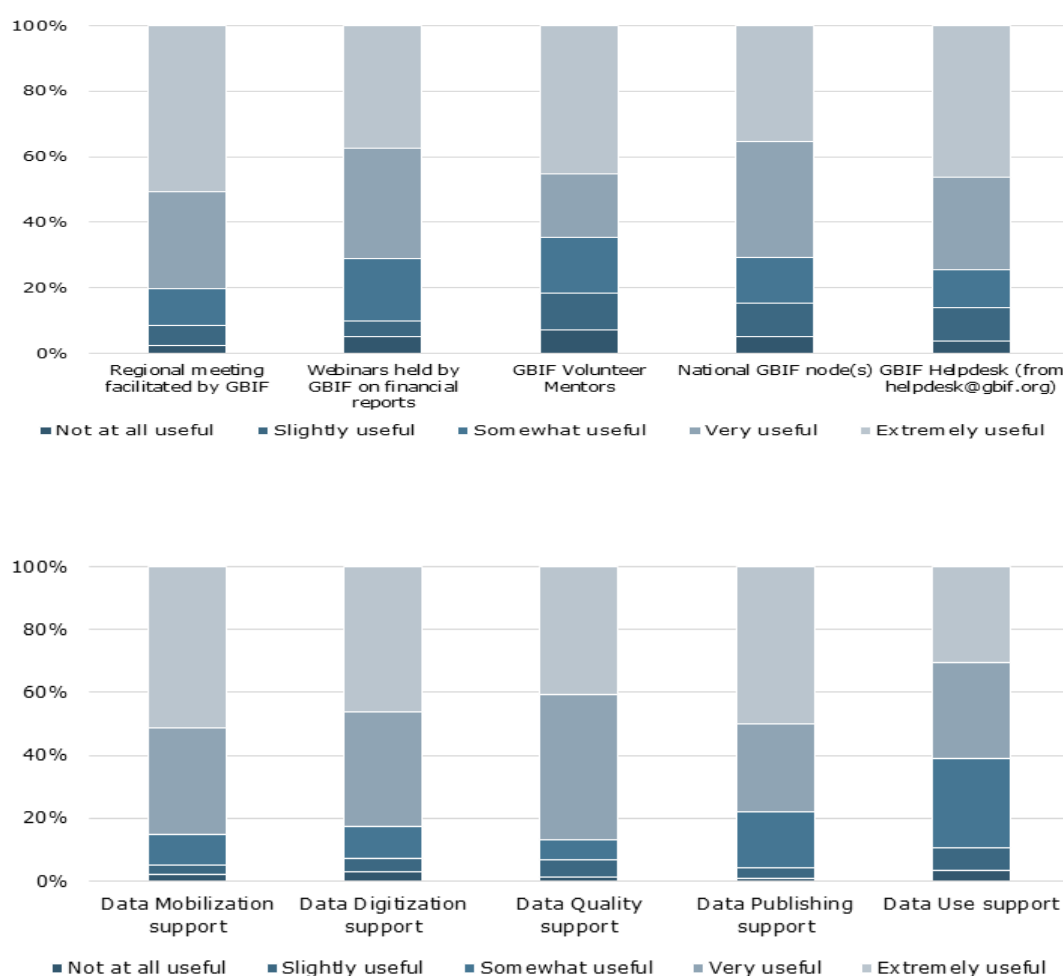
During the implementation phase, major challenges faced by surveyed BID participants deal with **meeting GBIF standards in publications** (open data) and **preparing financial reports**. Evidence collected shows that financial reporting is found particularly challenging when projects are led by scientists and university professors who are not familiar with accounting procedures. In comparison, this activity is found to be easier when the lead organisation is a private entity. Processes for purchasing, hiring personnel or approving external services are longer in public institutions as compared to a private entity. GBIF have addressed efforts in supporting BID participants with this task: webinars and live Q&A sessions have been held by GBIF on project implementation, including a section where GBIF financial controllers taught participants how to write and submit financial reports (e.g. by paying attention to currency exchange, etc.) and makes sure that the budget is aligned with the proposed activities. Reporting procedure have also been improved with the introduction of GBIF grant portal (before all information had to be provided in excel and sent to GBIF by email) which minimises technical issues and mistakes.

Figure 31 Main challenges faced during the implementation phase
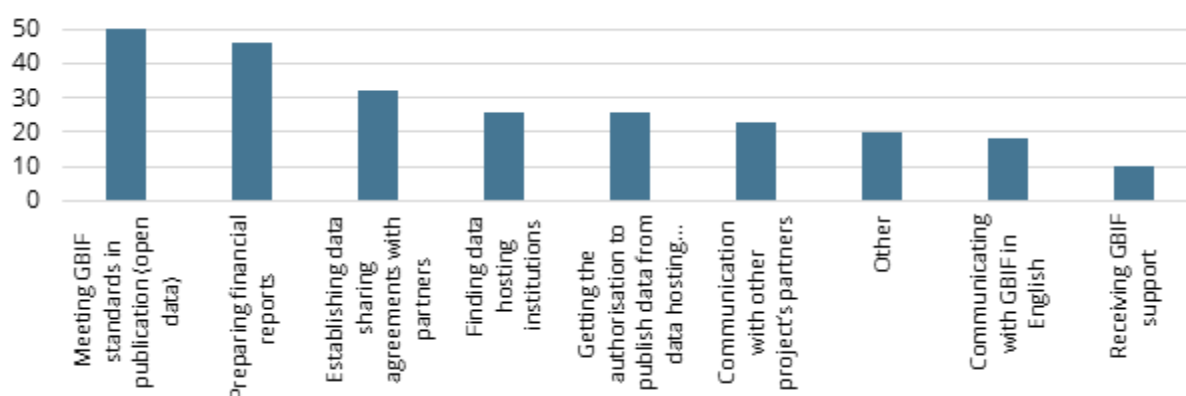
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item. Survey respondents could select up to three answers amongst the suggested list.

As already mentioned in section 3.2, another significant constraint that BID projects face is time. Based on the evidence collected from the survey to BID participants and from case studies, it seems that the length of the projects has been an issue for the majority of participants during projects' implementation. Indeed, the duration of projects was considered to be too short for some participants with negative impacts on their capacities as regards to outcomes achievements. Because of time constraint, some projects did not achieve all the expected outcomes, as planned initially in their full proposals, which would have been reach with a longer project duration. In this regard, interviewees stated that beneficiaries often feel that project's issues stop with its official closure even if objectives are not yet achieved because of lack of time, which can be frustrating. Having longer projects' implementation periods would also allow to further strengthen the relations established during the project period, between partners and/or with external institutions, and then to secure them for future common activities under other BID projects or other projects not funded by BID. Therefore, projects' sustainability could also been reinforced in the long term.

> *"BID projects in general need more time to reach their objectives: our project only mobilised and published 12,000 occurrences on GBIF.org while 120,000 were initially targeted in the full proposal."* (case study)

Additional challenges mentioned by surveyed BID participants include the lack of a **good IT connection** which hampers the communication amongst partners located in different countries and has been slowing the implementation of the activities 'virtually' during the pandemic situation. The **lack of communication** is another issue faced by BID participants. Some partners can be sometimes reluctant to communicate issues and problems with their project leaders. However, meeting face to face helps strengthening the relationship and allows for more transparency in reporting. In-Region contractors - who can communicate with project coordinators informally - also tend to get better and more direct information regarding project implementation. Communication is also sometimes perceived as cumbersome not only with partners but also with local **GBIF node**. Evidence from two case studies shed light on the fact that although regularly meetings were set up, communication

from the node and support with data holding have been unsatisfactory. Issues in dealing with GBIF nodes were also confirmed by few survey respondents.

For some projects carried out in countries where English linguistic skills are not widespread, the use of **English as official language** has also been a barrier to the achievement of result, e.g. this generated issues in earning badges as mentioned in section 3.4. Nevertheless, GBIF has always been providing translation help or even informally communicating in the appropriate language (e.g. French, Portuguese, Spanish) to help identify some blockers and solve key issues.

> *"Even though the GBIF node regularly holds talks with government ministries about establishing biodiversity centres and advancing conservation efforts, the museum was unable to benefit from this relationship due to the lack of communication from the GBIF node.* (case study)

5 BID ADDED VALUE

Projects **would have not gone ahead** without the financing of the BID programme. This is largely confirmed both by BID selected and unselected participants answering to the survey. Searching for alternative sources of financing as well as reducing the scope of the projects has been considered as an alternative only in few cases.

Figure 32 BID added value
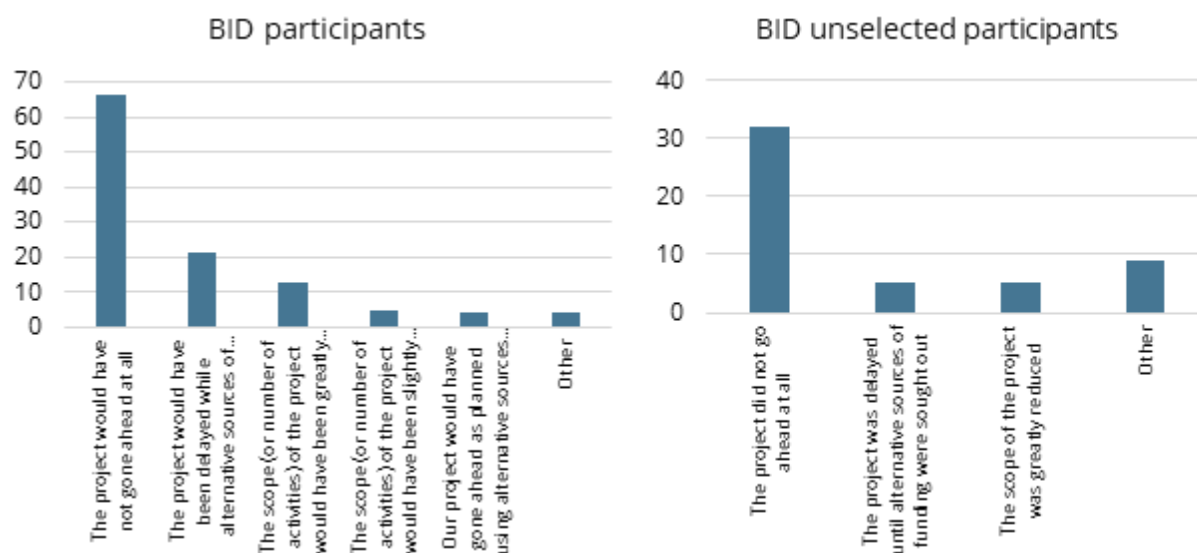
Source: CSIL elaboration on survey data. Note: the bars indicate the number of respondents which selected this item.

Several merits were recognised by surveyed participants to BID programme. Thanks to their participation in these projects, participants were able to advance in data mobilisation and better identify data users' needs, enhance collaborations in biodiversity fields, increase credibility and reputation of their institutions (as capable to carry out complex activities relating to biodiversity mobilisation and conservation efforts) as well as accessing new funding opportunities.

According to the evidence collected, the '**funding leverage effect'** is the main merit of the BID programme. Survey respondents confirmed that participating to the BID Programme permitted them to access other funds from other sources (51% of participants answering the survey, excluding the "I don't know" answers). The table below provides examples of funds made available from other funds to BID participants thanks to their participation to the Programme.

Table 1 Examples of additional source of financing 'leveraged' by BID programme

	PUBLIC FUNDING FACILITIES	PRIVATE FUNDING FACILITIES
National funding facilities	▪ Government grant facilities, e.g. from the Lagos State Science, Research and Innovation Council (LASRIC, Nigeria) ▪ Universities grant facilities, e.g. from the Central Research Committee (CRC) grant scheme of the University of Lagos (Nigeria), or from the Tertiary Education Trust Fund (TETFund) of the Nasarawa State University (Nigeria) ▪ National Fund for Innovation and Scientific and Technological Development (FONDOCYT, Dominican Republic) ▪ University of Magdalena (Colombia) ▪ Lead organisation and/or partner(s) providing additional funding for further project(s)	▪ Lead organisation and/or partner(s) providing additional funding for further project(s) ▪ The Foundation for the Conservation of Biodiversity (BIOFUND, Mozambique)
International funding facilities	▪ Capacity Enhancement Support Programme (CESP) from the Global Biodiversity Information Facility (GBIF, Denmark) ▪ Darwin Initiative (UK) ▪ Agence Française pour le Développement (AFD, France) ▪ Institut Royal des Sciences Naturelles de Belgique (Belgium) ▪ U.S. Agency for International Development (USAID, USA) ▪ Critical Ecosystem Partnership Fund (CEPF, USA) ▪ National Museums Boards ▪ Sud Expert Plantes Développement Durable Programme (SEP2D, France)	▪ JRS Biodiversity Foundation (USA) ▪ The Non-Timber Forest Products – Exchange Programme (NTFPs-EP) from the Pastor Rice Small Grants Fund (PRSGF) (many different locations) ▪ International Foundation for Science (IFS, Sweden) ▪ Oil companies

Source: CSIL elaboration on survey data

6. CONCLUSIONS AND LESSONS LEARNED

The previous sections outlined the achievements of the BID programme as pointed out by the analysis of its portfolio of projects, as well as the insights gathered through the interviews, citation and network analyses, surveys and case studies carried out in the framework of this evaluation. They also shed light on the efficiency of BID administration and the added value of the programme.

This section draws broader conclusions of this evaluation and provides specific answers to the evaluation questions. It also distils some lessons learned meant to support the design and implementation of a possible third phase of the BID Programme or similar programme.

6.1 Conclusions

The availability of biodiversity data and their use is something that have always been promoted in the biodiversity sector. However, this was heavily biased towards areas of greater capacity and longer history of scientific collecting rather than areas of actual biodiversity significance. The BID Programme – alongside other EU programmes (e.g. BIOPAMA; DOPA) and organisation (e.g. JRS Biodiversity Foundation) - has contributed to fill in this gap by targeting the ACP countries. The latter - although being incredibly rich in biodiversity - have been a blackhole in terms of biodiversity data availability and accessibility.

Overall, through its portfolio of projects (102 projects – co-financed by the EU – were assessed through this evaluation), BID Programme has contributed to **unlock existing data and information** on biodiversity in ACP countries (which were available either in physical form or digital but not standardised) by digitising and organising them in structured datasets and sharing **openly**, with a view to increasingly allow their **use in scientific fields and/or decision making processes**. The BID Programme has also contributed to **enhance capacities and develop new skills** which are essential to data mobilisation and use. Finally, it has effectively contributed to the **establishment of partnerships** between organisations dealing with biodiversity data at different levels, the strengthening of a **community of practice**, as well as to **enlargement of the GBIF network**.

In what follows, we further distil the main findings of this evaluation by providing an answer to **specific questions** which have guided the assessment of the BID Programme. **Annex III** indicates, for each question and indicator, the source of evidence, the level of analysis and where the extensive presentation of the evidence is discussed in the report.

> **EQ 1. To what extent has the project delivered on the objectives of the BID logical Framework (Annex 1)?**

The objective of this evaluation question was to investigate the extent to which the BID Programme has achieved the targets set in the BID LogFrame (described in **Annex IV**). The evidence collected (see Sections 3.1-3.5) allows to conclude that all targets were achieved except the one on the number of data records published (see Table below). The latter is

however expected to be achieved upon completion of the ongoing projects. In particular, the following findings can be highlighted:

- The BID Programme has effectively contributed to **increase availability of biodiversity data in targeted regions** (Sub-result 2.2.). Overall, BID projects published a total of 703 datasets and made available about 1.3 million occurrence data records (out of which 1.1 million georeferenced). Almost all occurrences were published by 106 distinct organisations located in the ACP region, out of which 93 registered during the projects. Data show that the publication of datasets follows a cyclical pattern, with peaks close to the end of the projects or just after. Thus, it is expected that by the end of 2023, the number of datasets published will further increase (especially occurrence datasets) and reach the expected target (1.5 million).

- The BID Programme **increased the use and recognition of BID projects' outcomes** by international science-policy initiatives and the international community (Sub-result 2.3. & 2.5.). The number of downloads and citations of BID mobilised data has significantly increased in recent years. For instance, between 2016 and 2022, about 1.8 million downloads from users of GBIF.org were counted containing a total amount of 3,113 million data records published by BID funded projects, as compared to 77,349 data records on ACP downloaded before the launch of the BID Programme. Also, the number of publications citing BID mobilised data raised from 4 in 2016 to 306 in 2021. A significant rise in the number of peer-reviewed publication using BID mobilised data occurred from 2018. Nevertheless, there is evidence that BID mobilised data are mostly used in non-ACP countries, suggesting that while there is an increasing use in biodiversity data about ACP regions, data uptake is still lagging behind in the three targeted regions, suggesting a capacity gap in the regions. Anecdotal evidence has been also collected about the actual and expected use of BID mobilised biodiversity data into decision-making processes (see Section 3.3 for details).

- The BID Programme **enhanced capacities of key stakeholders to mobilise biodiversity data** (Sub-result 1.2.) through its capacity enhancement workshops. Overall, 11 capacity enhancement workshops were organised. They reached 208 unique trainees representing all 102 BID-funded projects assessed under this evaluation. A total of 103 badges (a certification released to workshop's attendees on the basis of their achievements) have been issued: 90 on data mobilisation and 13 on data use. However, even without the achievement of a certification, participants attending the workshop acquired skills useful not only for the project but also for future biodiversity research activities.

- The BID Programme contributed to the **establishment of partnerships** between organisations dealing with biodiversity data at different levels (Sub-result 2.1.), the **strengthening of a community of practice** (Sub-result 1.3.), as well as the **enlargement of the GBIF network** (Sub-result 1.1.).

- o 503 BID participants belonging to 398 institutions have been involved in the 102 BID projects assessed. 21% (81 out of 398) of BID-funded institutions have been involved in more than one project that could either include the same institutions (network reinforcement) or new partners. Having organisations involved in more projects has enabled the establishment of a network less and less sparse where an increasing number of organisations are interconnected both directly and indirectly. Despite the enlargement of the network, project collaborations remain mainly within each targeted region, in accordance with BID calls' requirements. Moreover, organisations from Europe and North America are usually involved to facilitate the data publishing activities (e.g. availability of data hosting institutions).

- o The community of practice has enlarged both in terms of the number of mentors (123 out of which 43 from targeted countries and there are still approximately 25 to be accepted) and of the number of data publishing institutions registered on the GBIF platform (1,560 additional institutions have registered as GBIF data publishers, out of which 113 published at least one BID mobilised dataset).

- o The BID Programme has partly acted as an entry point to the GBIF membership through the organisation of regional meetings and the one-day training on node management (held by the GBIF). These events attracted countries and organisations that eventually joined the GBIF. Despite its significant enlargement during the BID implementation, the GBIF network still covers only a tiny share of BID-eligible countries (especially in Caribbean and Pacific regions). Moreover, there are some indications that GBIF node are sometimes not very proactive in establishing relationships with key stakeholders in the regions.

Table 2 BID achievements as compared to LogFrame

LogFrame Sub-results	Indicator	(A) Target value (set in 2020)	(B) Midterm value (2017)	(C) Achieved value (2022)	(C/A) Assessment
Sub-result 1.1	New countries or organizations establishing formal GBIF nodes in ACP through signature of the GBIF MoU	15	10	16	107%
Sub-result 1.2	Certification of biodiversity data skills	100	19	103	103%
Sub-result 1.3	New institutions from the BID target countries and regions registered as data publishers in the GBIF network	250	206	367	147%

Sub-result 2.1	New thematic, national and regional biodiversity information systems, networks/consortia and informal networks	no quantitative target was established		Having organisations involved in more projects has enabled the establishment of a network less and less sparse where an increasing number of organisations are interconnected both directly and indirectly
Sub-result 2.2	Biodiversity data records pertaining to the BID target countries and regions that are freely and openly available for reuse from GBIF.org	1.500 million	1.183 million	1.333 million	Will likely be reached upon completion of still ongoing projects
Sub-results 2.3, 2.4, 2.5	Contribution to policy-decision making processes/development of strategies or action plans/inclusion in biodiversity related conventions and intergovernmental processes	no quantitative target was established		Anecdotal evidence are available on the use of BID data in the policy decision process of targeted countries.
Specific Objective	Peer-reviewed publications using BID data	100	479	479%

Source: CSIL elaboration

> **EQ 2. To what extent has the portfolio of selected projects met the objectives of the BID programme and thereby contributed to DEVCO (INTPA) overall goals with specific reference to Theme 1 – Partnerships Theme 2 – Climate Change, Environment Energy, Theme 3 – Digital and Data technologies as set out in the INTPA Strategic Plan 2020 – 2024?**

The strategic plan adopted by DG INTPA for the 2016-2020 period focused on three main areas: (i) conservation, (ii) green economy and (iii) better governance. By supporting the increased availability of digitised biodiversity data, the BID Programme has widely contributed to the achievements of objectives stated in this plan, especially in relation to Theme 2 "Climate Change, Environment, Energy" and Theme 3 "Digital and Data Technologies". Amongst the assessed projects (through case studies and survey), there is evidence that projects have digitised natural history collections and that the mobilised data are expected to enhance regional capacities to conserve, restore and sustainability manage the species. Conversely, BID projects are less likely to contribute to Theme 1 – Partnerships. While BID projects have favoured the establishment of various collaborations (see section

3.5.1), the resulting collaborations are usually not as meant by the INTPA strategic plan. Indeed, a limited number of surveyed participants indicated that their project has enabled (or is expected to enable) partnership agreements with the countries of the organisation of ACP States, or sustainable partnerships with IFI, the UN and other multilateral partners around EU priorities, or a joint AU-EU partnership agenda and/or joint programming and implementation by EU member states.

While contributing to the specific objectives of DG INTPA Strategic Plan, BID projects are specifically contributing to progresses in the achievement of SDG goals, particularly SDG 15 "Life on Land" , SDG 13 "Climate Action" , DG 14 "Life Below Water" and SDG 17 "Partnership for the goals".

EQ 3. To what extent are the funded projects, individually or based on a collective contribution to specific topics, likely to lead to an impact in terms of establishing or strengthening international & regional collaboration to mobilise biodiversity data, increasing available biodiversity data, within and beyond the grant period, and applying biodiversity data in response to priorities for addressing conservation and sustainable development?

As reported under EQ 1 above, BID projects have proved able to increase the availability of data, especially in the Caribbean region where no data were available on GBIF.org before the BID Programme (462 datasets have been published as part of 65 BID projects within their grant period). It has been observed that BID participants are more likely to publish new data records beyond the grant period. Indeed, timing and capacity sometimes prevent BID participants from publishing mobilised data before the end of the project. Despite the commitment of project participants to keep publishing data even beyond the grant period, still this may hinder the publication of additional data. From the analysis of peer-reviewed and non-peer-reviewed publications, it arises that BID mobilised data are increasingly used in the field of ecology, conservation and climate change.

BID projects also allowed to strengthen collaborations in data mobilisation. Multi-institutional consortia allowed the creation of a network of organisations dealing with biodiversity data (49% of projects were carried out by consortia including up to four different institutions). In some cases, BID project partners either signed data sharing agreements or set up partnerships to keep collaborating after the project completion. However, as already stressed above, despite the enlargement of network, the tendency is to team up with organisations located in not BID-funded countries (especially USA) because of the capacity needs and data availability in these countries.

EQ 4. How effective has GBIF been in terms of the efficiency of project administration?

Over the two phases of the BID Programme, the GBIF has enhanced its capacity to manage an increasing number of projects as well as to ensure consistency during the selection process. To this end, different actions were implemented, e.g. cross-checking the disparities between different reviewers, developing guidelines and manuals on how to perform the

assessment, introducing online platforms for submission, grant management software, manuals, etc.

Appreciations for the two-step process of applying for BID funding was perceived amongst BID participants (surveyed and interviewed) since it gave participants the opportunity to refine some of the project activities and rethink some of their proposed methodologies. Feedback on concept notes, mentoring as well as capacity enhancement workshops are among the forms of support most appreciated by both selected and unselected organisations. Regional meetings effectively raise awareness of biodiversity data relevance in decision-making processes.

The most cumbersome activities were declared to be coordinating the consortia, preparing the budget, and drafting technical contents (during the selection phase) as well as meeting GBIF standards in publications, preparing financial reports, establishing data sharing agreements and finding data hosting institutions (during the implementation phase).

EQ5 How effective has the programme been in terms of creating sustainability?

The sustainability of BID projects has been an issue which both GBIF and BID participants have been paying attention to. From the evidence collected, the sustainability of BID's results materialised in three different ways, namely (i) follow-up projects taking over the results achieved with BID projects; (ii) new collaborations (informal or formalised through agreements) arising between participants of different BID projects; (iii) dissemination activities to raise awareness on the importance of biodiversity and data availability.

Additionally, some projects have foreseen more specific solutions to ensure the long-term impacts of their projects. These include the creation of an ad-hoc committee to follow-up project's activities, application for additional grants to continue financing activities launched by the BID project, the establishment of ad-hoc portal for data sharing, the signature of a MoU with GBIF (ensuring continuous update of data), training and replication workshops, etc.

Activities to support the sustainability of BID projects were also implemented by GBIF. Specifically, it provided regional IPT and helpdesk services through the regional support teams. Also, it organised fundraiser and awareness events that give BID participants the necessary exposure to receive funding from various global funding sources and international institutions.

EQ 6 What has been the impact of BID on GBIF's broader objectives and progress?

The evidence collected points to a positive contribution of BID Programme to the achievement of GBIF broader objectives. Specifically, the Programme helped to:

- Empowering GBIF global network by interconnecting data user and data holding institutions in ACP regions but also with institutions located in non-BID eligible countries (e.g. USA, France, Belgium);

- Filling data gaps by publishing new datasets in open access, digitising existing information previously only available in catalogues books, and making existing datasets freely accessible online (open access);

- Improving data quality, e.g. with the requirement to publish data following the Darwin Core (DwC) standards ensuring BID datasets consistency;

- Delivering relevant data, e.g. with increasing the uptake of biodiversity data into policy-decision making processes for conservation/sustainable actions and journal publications.

6.2 Lessons learned

On the basis of the findings described above, we identified below some lessons learned which might be considered – in the future – to designing and implementing a third phase of the BID Programme or a similar programme.

With a view to **improve data mobilisation and use**:

- The *availability of data publishing infrastructures* in ACP countries (especially in led developed countries, including Pacific Island and Caribbean region) is a crucial asset that facilitates BID participants with data mobilisation. In the second phase of the Programme GBIF started distributing regional IPT and helpdesk services through the regional support teams. This type of support addressed to the development of national data publishing capacity within ACP regions or finding data hosting institutions within the ACP target regions could help to fill in this capacity gap and allow to strengthen inter-regional collaborations.

- *The presence of a GBIF node* which actively liaise with BID Participants is beneficial to projects' implementation. This type of engagement between GBIF node and BID Participants could further improve the project's performance since they can timely provide the needed support, foster collaborations an enable communication with government ministries.

- Some BID participants, especially in countries with low capacity, face challenges in publishing data and achieving greater results within the grant period. *Organising ad-hoc workshops as well as setting internal deadlines* can be helpful in this regard, because BID participants are encouraged to think about this issue since the starting of the projects. Also, promoting the curation of data after publication – as GBIF currently do –contribute to ensure that data publishing activities continue after the end of the project.

With a view to **improve the selection and implementation of projects**, the following lessons could be taken into account:

- Major *challenges* faced by BID participants in the project preparation and implementation include coordinating the consortia, preparing the budget, and drafting technical contents, meeting GBIF standards in publications, preparing financial reports,

establishing data sharing agreements and finding data hosting institutions. GBIF can continue to providing support to BID applicants and participants specifically targeting these challenges.

- According to the requirements set out within the calls for proposals, organisations in BID-funded countries have so far applied only to calls launched in their specific regions. This implies that they are directly linked either with organisations located in an eligible country within their region or with organisation located in countries that are never eligible under the BID programme. However, allowing inter-regional collaborations (e.g. through interregional cooperation calls) may be a way to overcome lack of capacities in given countries without the need to necessarily rely on non-ACP countries. Indeed, the choice to team up with organisations located in not BID-funded countries is usually driven by capacity needs and data accessibility.

With a view to **enhance the sustainability of projects**, the following lessons could be taken into account:

- The *support provided by the regional contractors* in the second phase of the Programme (e.g. with data hosting, data publishing, data cleaning, language, etc.) has positively contributed to the project's performance by supporting BID participants in addressing a number of challenges. Building on their expertise and fostering their engagement beyond the BID's life could help ensuring that all needs related to project sustainability are addressed as well as to build a stronger community of practice across the targeted regions.

- The *sustainability of BID's results* can be further enhanced by undertaking ad-hoc actions, including encouraging the update and revision of BID published databases (through MoUs, ad-hoc data offices, projects' follow up), promoting the inclusion of BID data in university teaching and learning courses as well as collaborations between data hosting and data users within and beyond the project implementation.

- When a country or an organisation join the GBIF network through the signature of a MoU, it becomes responsible of coordinating activities and initiatives related to biodiversity within the country. *Encouraging the establishment of a national node*, especially in the Pacific and Caribbean regions, may contribute to the development of a national network of data publishers and users, increase national capacity, thus ensuring sustainability of the activities initiated under the BID Programme.

With a view to **improve BID contribution on GBIF wider objectives**, the following lessons could be considered:

- Enlarging the list of BID-eligible countries in ACP regions – as occurred in the second phase of the Programme in the Caribbean region – contribute to broad the geographic scope of the programme and thus extend capacity support. To further increase the effect of this enlargement (in terms of capacity building), the *collaborations between countries*

with high and low capacity levels (e.g. by introducing requirements in the establishment of consortia) could be encouraged by GBIF.

- BID projects address the UN SDG, particularly environment and climate change adaptation. Their contribution to the achievement of SDG objectives could be further enhanced by facilitating communication and contact between BID participants and multilateral partners in order to build *sustainable partnerships around EU priorities* (e.g. by introducing requirements in the call).

7. ANNEXES

ANNEX I – Glossary

	DEFINITION
Associate country participant	Associate countries participant are countries which are not yet making financial contributions to GBIF. Associate countries participant may take part in Governing Board discussions but may not vote. They can maintain Associate country participant status temporarily for up to five years after the MoU signing date. During this period, a country may choose to become a Voting country participant, an Observer, or may withdraw from GBIF.
Badge	A badge is a certification delivered by GBIF to workshops' attendees. Badges are awarded to attendees which successfully completed the final workshops' evaluation process. These certifications are a proof of new skills and knowledges acquired by attendees during the workshops, and are sometimes necessary and allow attendees to replicate GBIF workshops (replication workshops).
BIOPAMA	BIOPAMA is a six-year programme addressed to reinforce the management and governance of protected and conserved areas in the ACP regions through better use and monitoring of information and capacity development on management and governance. It specifically targets 79 countries hosting 9,000 protected areas, encompassing a massive diversity of ecological, social, economic and cultural landscapes. The Regional Observatories are the central pillar of BIOPAMA's work. They support data collection, analysis, monitoring and reporting, develop the capacities of staff and organisations to manage this information and provide policy guidance for better decision making on biodiversity conservation. Two phases of BIOPAMA have been financed by the EU. The first phase (2011-2017) was launched by the Joint Research Centre of the European Commission and the International Union for Conservation of Nature (IUCN) and financed by the 10th European Development Fund. It delivered more than 120 training and workshops on developing capacity for protected area and data management, one ACP wide and five regional and sub-regional Reference Information Systems, four fully functional Regional Observatories for protected areas and biodiversity. Also, it involved more than 2,000 protected area staff, NGOs, governments, technical networks, academia, local communities, and private sector. The second phase is currently ongoing (2017-2023) and is financed (total amount EUR 60 million) by the 11th European Development Fund. The objective of the second phase is to further enhance existing local institutions and networks by building their capacity to strengthen policy and to implement well informed decisions on biodiversity conservation and protected areas management. The contribution of the IUCN is focusing on the capacity building while the JRC provides the technical and scientific assistance to set up regional observatories for the three regions, observatories that are supported by DOPA. The latter consists of a set of web services and applications that can be used primarily to assess, monitor, report and possibly forecast the state of and the pressure on protected areas at multiple scales. The data, indicators, maps and tools provided by the DOPA are relevant to a number of end-users including policymakers, funding agencies, protected area agencies and managers, researchers, and the Convention on Biological Diversity (CBD).
Checklist	Checklist data are resources comprising a list of species belonging to some category (e.g. taxonomic, geographic, trait-based, red list, crop wild relative) and optionally with higher classification and/or additional traits associated with each species. Examples of such datasets include global or regional taxonomic checklists, global or national red lists, catalogues of species included in undigitized collections, park checklists, etc. If sufficient

	information exists in the source dataset (or applies consistently to all species in the checklist), it is recommended that these datasets are presented as Occurrences data.
Cotonou Convention	The Cotonou Convention, or Cotonou Agreement, is the overarching framework for EU relations with African, Caribbean and Pacific countries. It aims to strengthen the capacity of the EU and the ACP countries to address global challenges together. For this reason, it lays down common principles and covers priority areas, such as democracy and human rights, sustainable economic growth and development, climate change, human and social development, peace and security, and migration and mobility.
Darwin Core (DwC) standard	List of fields and their definitions, as they relate to biodiversity data.
Data hosting	Data hosting is the act of storing the data on a stable and accessible web platform. While there is no standard arrangement for providing this services, data hosting does represent a significant commitment that requires dedicated, long-term capacity that maintains a persistent and highly reliable web-connected platform.
Data Mobilisation workshop	This type of workshop enables participants to plan and implement biodiversity data mobilisation efforts effectively using accepted community standards. Its aim is to increase the volume, richness and quality of the data published through the GBIF network. Topics include: Project planning, Data capture, Data management, Data publishing
Data publisher	A data publisher is a custodian of data making it technically available. This may or may not be the data owner. If not they will have declared to GBIF that they have permission to make the data available.
Data use grants	Data-Use for Decision-Making grants are directed at projects in which the mobilization of primary biodiversity data, respond clearly to pre-defined decision or policy needs relating to sustainable development. According to GBIF, funded projects through BID Data-Use grants are required to engage in activities that: (i) Define user needs; (ii) Mobilize and enhance policy-relevant biodiversity data; (iii) Produce user-ready analyses of GBIF-mediated data responding to policy questions; (iv) Integrate data solutions into policy-making processes. Data-Use grants were added as a grant type in phase two of the BID Programme to specifically identify data users and target more experienced institutions. The grant achieves such by requiring applicant institutions to pre-identify policy processes for which primary biodiversity data is required, before applying for the grant. Applicant institutions are also required to have already undertaken data mobilization activities before and have an existing relationship with governing bodies making decisions relevant to sustainable development. The maximum amount of funding allocated by the Data-Use grants is €60,000 per project assuming they meet all the eligibility criteria.
Data Use workshop	This type of workshop aims to teaching participants about the GBIF.org portal, open data principles, data visualisation tools. Participants also increase their skills in open biodiversity data and discover tools for data management and visualisation, as well as how to combine research data with data made freely available by other stakeholders. Training typically focus on: Discovering data on GBIF.org portal, Downloading the data in CSV and Darwin Core format, Understanding data citation, licenses and DOIs, Visualising data with spreadsheet, QGIS and R, Filtering the data, Understanding data fitness-for-use
Data summary table	Also called pivot table, it uses groups and statistics to transform raw data into a more accessible format. Data summary tables can be used to calculate counts and statistics for unique categories in data using the number fields in a dataset.
GBIF literature tracking programme	The GBIF literature tracking programme is an annual survey managed by GBIF that identifies research uses and citations of biodiversity information accessed through GBIF's infrastructure.

Fossil Specimen	A preserved specimen that is a fossil, for example, a body fossil, a coprolite, a gastrolith, an ichnofossil or a piece of petrified tree.
GBIF MoU	The GBIF Memorandum of Understanding (MoU) is a non-binding document forming the basis for the national and other signatories to cooperate in a coordinated international scientific effort to openly share and put to use vast quantities of global biodiversity data, thereby advancing scientific research in many disciplines, promoting technological and sustainable development, facilitating the conservation of biodiversity and the equitable sharing of its benefits, and enhancing the quality of life of members of society.
GBIF node	A GBIF node is a team designated by a GBIF Participant to coordinate a network of people and institutions that produce, manage and use biodiversity data, collectively building an infrastructure for delivering biodiversity information. This network is supported by organisational arrangements and informatics solutions, working to improve the availability and usefulness of biodiversity data for research, policy and decision-making.
GBIF relevance	In the GBIF literature database, relevance refers to how publications relate to GBIF following these definitions: GBIF used: makes substantive use of data in a quantitative analysis (e.g. ecological niche modelling) GBIF cited: cites a qualitative fact derived in data (e.g. a given species is found in a given country) GBIF discussed: discusses GBIF as an infrastructure or the use of data GBIF primary: GBIF is the primary source of data (*no longer applied*) GBIF acknowledged: acknowledges GBIF (but doesn't use or cite data) GBIF published: describes or talks about data published to GBIF GBIF author: authored by GBIF staff GBIF mentioned: unspecifically mentions GBIF or the GBIF portal GBIF funded: funded by GBIF or a GBIF-managed funding programme
Human Observation	An output of human observation process, for example evidence of an occurrence taken from field notes or literature or a records of an occurrence without physical evidence nor evidence captured with a machine.
Institutional Grants (Small Grants)	BID Institutional-level biodiversity data mobilization grants, or small grants as they were called in the initial calls of the BID Programme, seek to mobilize biodiversity data relevant for decisions supporting sustainable development. According to GBIF, the objectives of this grant are to strengthen the capacity of institutions managing and mobilizing biodiversity data, increasing its availability, and supporting its application in response to sustainable development priorities. For a project to receive funding through the institutional grant, it is required to engage in activities that mobilizes biodiversity data and integrates it into policy and decision-making processes. The maximum funding allocated by the institutional grant is €20,000 per project, assuming they meet all the eligibility criteria.
Integrated Publishing Toolkit (IPT)	The Integrated Publishing Toolkit (IPT) is a free open source software tool written in Java that is used to publish and share biodiversity datasets through the GBIF network. The IPT can also be configured with either a DataCite or EZID account in order to assign DOIs to datasets transforming it into a data repository.
International consortia	Consortia involving partners coming from different BID target regions, and/or from countries located outside the BID target regions (non ACP countries).
Living Specimen	A specimen that is alive, for example, a living plant in a botanical garden or a living animal in a zoo.

Machine Observation	An output of a machine observation process for example a photograph, a video, an audio recording, a remote sensing image or an occurrence record based on telemetry.
Material Citation	A reference to, or citation of, one, a part of, or multiple specimens in scholarly publications, for example, a citation of a physical specimen from a scientific collection in taxonomic treatment in a scientific publication or an occurrence mentioned in a filed note book.
Mentors	They are volunteers from different nodes or the wider GBIF community that are willing to help people for free and share their knowledge and help them master the skills needed to mobilize data. Volunteers also include university professors and experts who help with very specific topics such as for example DNA and Fresh Water.
Metadata	The metadata is a type of data describing the attributes and combinations of data.
National grants	The purpose of national grants is to establish or strengthen national biodiversity information facilities and to increase the data availability of the county's biodiversity, responding to national priorities. Similar to Institutional grants, national grant seek to establish or strengthen biodiversity information facilities, increase biodiversity data availability and support its application in response to sustainable development priorities, but on the national level. The maximum funding allocated by the national grant is €40,000 per project, assuming they meet all the eligibility requirements. On top of the data mobilization and integration into policy activities that all BID Programme grants are required to engage in, national grants also need to promote national participation in GBIF and engage with national governments in signing on to the GBIF Memorandum of Understanding (MoU) and becoming a national GBIF part.
Occurrences	Occurrences data are data which present evidence of the presence of a species at a particular place and normally on a specified date. These datasets expand on most checklist data because they contributed to mapping the historical or current distribution of species. At the most basic, such datasets may provide only general locality information (even limited to a country identifier). Ideally they also include coordinates and a coordinate precision to support fine scale mapping. In many cases, these datasets may separately record multiple individuals of the same species. Examples of such datasets include databases of specimens in natural history collections, citizen science observations, data from species atlas projects, etc.
Other associate participant	Other associate participants are international organisations, intergovernmental organisations, other organisations with an international scope, and economies, that are willing to observe the MoU provisions. Their representatives can attend the GBIF Governing Board, endorse data publishers and collaborate in regional meetings, mentoring and training programmes and other activities, but they are not eligible to become Voting country participant, and are not required to make financial contributions.
Preserved Specimen	A specimen that has been preserved, for example, a plant on an herbarium sheet or a catalogued lot of fish in a jar.
Regional consortia	Consortia involving partners coming from only one and the same BID target region.
Regional grants	Regional grants seek to establish or strengthen international collaborations that increase biodiversity data mobilization for research and policy addressing regional sustainable development needs. According to GBIF, funded projects through BID regional grants are required to engage in activities that: (i) Establishes or strengthens networks to support long-term data mobilisation and inter-institutional data sharing; (ii) Mobilizes biodiversity data relevant to sustainable development; (iii) Integrates biodiversity information into policy and decision making. The maximum amount of funding allocated by the regional grants differs

	by the number of involved countries or territories. Consortium involving two countries or territories as beneficiaries are eligible to receive up to €60,000 in funding, while consortium involving three or more countries or territories as beneficiaries are eligible to receive up to €120,000 in funds to support project implementation.
Sample event	Sample event are resources which present evidence not only of the occurrence of a species at a particular place and time, but also sufficient detail to assess community composition for a broader taxonomic group or relative abundance of species at multiple times and places. Such datasets derive from standardized protocols for measuring and observing biodiversity. Examples include vegetation transects, standardized bird census data, eco-genomic samples, etc. These add to Occurrence Data by indicating what protocol was followed, which occurrence records derive from a sampling event following the protocol, and ideally the relative abundance (by a suitable numerical measure) of species recorded in the sample. These additional elements can support better comparison of the data from different times and places (where the same protocol is indicated) and may in some cases enable researchers to infer absence of particular species from particular sites.
Voting country participant	Voting countries participant are countries that observe the provisions of the MoU and make a financial contribution to the annual GBIF budget. These participants have voting rights on the GBIF Governing Board, as well as other benefits.

ANNEX II – References

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- The findings on which this evaluation is based also include evidence from the concept notes, full proposals, midterm and final narrative reports of all the 102 BID projects comprising the evaluation portfolio, as provided by GBIF.

ANNEX III – Evaluation Matrix

Indicator	Scoping interview	Portfolio analysis	Survey	Network analysis	Case Studiess
EQ1	**To what extent has the project delivered on the objectives of the BID logical Framework (Annex 1)? For evidence, see sections 3.1., 3.2., 3.3., 3.4., & 3.5.**				
EQ1.1	***To what extent did the Programme foster collaborative mobilisation of targeted biodiversity data in each of the three target regions? [Sub-result 1.1]***				
	Number of countries or organisations establishing formal GBIF nodes through signature of the GBIF MoU		✓			
EQ1.2	***To what extent did the Programme enhance the capacities of key stakeholders for coordinating the mobilisation, management and use of targeted biodiversity data and establishing biodiversity information systems and networks? [Sub-result 1.2]***				
	Number of biodiversity data skills certifications (total and disaggregated by type of badge, workshop, country, region, year)		✓			
	Rate of certification, defined as the ratio between the number of certifications issued and the number of participants to the workshop (at BID level and disaggregated by type of badge, workshop, country, region, year, and type of grant)		✓			
	Ratio between the number of participants in replication workshops organised by BID funded projects and the data skills certifications (at BID level and disaggregated by type of badge, workshop, country, region, year, type of grant, and project)		✓			
EQ1.3	***To what extent did the Programme allow establishing a community of practice supporting the implementation of funded projects? [Sub-result 1.3]***				
	Number of BID registered data publishers (total and disaggregated by country, region, year)		✓			
	Number of BID registered data publishers that published at least one dataset as part of a BID funded project (total and disaggregated by country, region, year)		✓			
EQ1.4	***To what extent did the Programme develop/strengthen national, regional, or thematic networks/consortia to support biodiversity data sharing and address key policy needs? [Sub-result 2.1]***				
	Number of new thematic, national and regional biodiversity information systems, networks/consortia, and informal networks			✓		✓
EQ1.5	***To what extent did the Programme support the mobilisation of biodiversity data [Sub-result 2.2]***				
	Number of data records produced		✓			
	Number of peer-reviewed scientific publications using BID data		✓			
EQ1.6	***To what extent did the Programme foster the integration of biodiversity data into decision-making and research? [Sub-results 2.3, 2.4, 2.5]***				
	Number of documented examples of policy or decision processes			✓		
	Number of times BID was used to develop indicators in national/regional biodiversity strategies & action plans or other land-use planning guidelines			✓		
	Examples of new projects, programmes and actions in the BID target countries and regions that make use of the approach and best practices identified through the BID programme			✓		✓
	Examples of reference to BID in communications and capacity building documentation from biodiversity-related conventions and intergovernmental processes, the UN Convention on Biological Diversity (CBD) and Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES)	✓	✓			
EQ2	**To what extent has the portfolio of selected projects met the objectives of the BID programme and thereby contributed to DEVCO (INTPA) overall goals with specific reference to Theme 1 – Partnerships Theme 2 – Climate Change, Environment Energy, Theme 3 – Digital and Data technologies as set out in the INTPA Strategic Plan 2020 – 2024? For evidence, see section 3.7**				
EQ2.1	***To what extent has the portfolio of selected projects allowed partnership agreements with the countries of the Organisation of African, Caribbean and Pacific States (Theme 1)***				
	Examples of partnership agreements signed after BID	✓		✓		✓
EQ2.2	***To what extent has the portfolio of selected projects enabled sustainable Partnerships with International Financial Institutions, the UN and other multilateral partners around EU Priorities (Theme 1)***				

	Indicator	Scoping interview	Portfolio analysis	Survey	Network analysis	Case Studiess
	Examples of projects implemented with UN and UN agencies linked with the biodiversity priority	✓		✓		✓
EQ2.3	*To what extent has the portfolio of selected projects paved the way to a joint AU-EU Partnership agenda and/or joint programming and implementation by EU Member States (Theme 1)*					
	Examples of how BID projects contributed to the entry into force of the EU-AU Agreement	✓		✓		✓
EQ2.4	*To what extent has the portfolio of selected projects contributed to the conservation, restoration and sustainable management of natural resources and ecosystems (Theme 2)*					
	Number of projects (and amount allocated) contributing to the conservation, restoration and sustainable management of natural resources and ecosystems		✓	✓		✓
EQ2.5	*To what extent has the portfolio of selected projects supported countries in developing strategies to adapt to climate change and reduce greenhouse gas emissions (Theme 2)*					
	Number of projects (and amount allocated) supporting the development of climate adaptation and mitigation strategies		✓	✓		✓
EQ2.6	*To what extent has the portfolio of selected projects enhanced countries' capacities in the transition toward green and circular economies (Theme 2)*					
	Number of projects (and amount allocated) supporting green transition and circular economies			✓		✓
EQ2.7	*To what extent has the portfolio of selected projects improved digitalisation of natural history collections (Theme 3)*					
	Number of projects (and amount allocated) related to natural history collections		✓	✓		✓
EQ3	**To what extent are the funded projects, individually or based on a collective contribution to specific topics, likely to lead to an impact in terms of establishing or strengthening international & regional collaboration to mobilise biodiversity data, increasing available biodiversity data, within and beyond the grant period, and applying biodiversity data in response to priorities for addressing conservation and sustainable development? For evidence, see sections 3.2., 3.3., & 3.5**					
EQ3.1	*To what extent have the project(s) allowed international collaborations?*					
	Number of projects implemented by international consortia		✓		✓	
	Number of cases where international consortia formed within the BID kept collaborating together			✓		✓
EQ3.2	*To what extent have the project(s) allowed regional collaborations?*					
	Number of projects implemented by regional consortia		✓		✓	
	Number of cases where regional consortia formed within the BID kept collaborating together			✓		✓
EQ3.3	*To what extent have the projects increased available biodiversity data within the grant period?*					
	Number of datasets published by BID funded projects		✓			
	Number of workshops organised by funded project		✓			
	Number of BID data downloads including at least one record from a BID-mobilised dataset (total, disaggregated by year)		✓			
EQ3.4	*To what extent have the projects increased available biodiversity data beyond the grant period?*					
	Number of (peer-reviewed) publications citing BID projects output		✓			
	Number of (non peer-reviewed) publications citing BID projects output		✓			
	Number of citations per BID mobilised dataset (total, fractionalised, disaggregated by type of literature, and country of the author)		✓			
EQ3.5	*To what extent have the project(s) laid the foundation of a global response to conservation and sustainable development?*					
	Number of projects contributing to SDGs and distribution across SDGs			✓		✓
EQ4	**How effective has GBIF been in terms of the efficiency of project administration? For evidence, see sections 4.1. & 4.2**					
EQ4.1	*How were calls for proposals managed?*					
	Description of procedures and changes that occurred over the two phases	✓				
EQ4.2	*Which were the challenges faced throughout the project design and implementation?*					
	Description of challenges and their occurrence by regions, by type of grants	✓		✓		✓

	Indicator	Scoping interview	Portfolio analysis	Survey	Network analysis	Case Studiess
EQ4.3	*Besides the financial support, which type of support is delivered by the GBIF on project design and implementation?*					
	Description of the type of support (not financial) provided during the implementation phase and its usefulness [e.g. help desk, mentors, volunteers, GBIF Integrated Publishing Toolkit, GBIF national node, external reviewers]	✓		✓		✓
EQ4.4	*To what extent would the projects funded not have been carried out without the BID programme?*					
	Share of projects whose project leader believe that he would have not carried it out without the BID Programme	✓		✓		✓
EQ5	**How effective has the programme been in terms of creating sustainability? For evidence, see section 3.6**					
EQ5.1	*To what extent the support provided by the programme allows sustainable long-term impacts? Is there evidence that the projects will have lasting impacts?*					
	Examples of application of data in policy/decision making			✓		✓
	Adopting a data publishing process, possibly including installing data publishing informatics tools (e.g. GBIF Integrated Publishing Toolkit)			✓		✓
	Level of inclusion of open biodiversity data mobilization in university teaching and learning			✓		✓
	Number of new collaborations/ projects/ partnerships established based on connections initiated during a BID project			✓		✓
	Number of survey's respondents perceiving that funded projects allowed them to widen their professional/personal network (e.g., access to new professional opportunities)			✓		✓
	Number of new projects launched as a follow-up			✓		✓
EQ6	**What has been the impact of BID on GBIF's broader objectives and progress? For evidence, see section 3.7**					

EQ6.1	*To what extent the BID project portfolio has contributed to*
	
	    empower the global network?
	    enhance biodiversity information infrastructure?
	    fill data gaps
	    improve the data quality?
	    deliver relevant data?
		Triangulation of evidence				

EQ7	**What lessons can be drawn for future phases of BID's Programme? For evidence, see section 6.2**					
EQ7.1	*What type of actions should be prioritised? What type of support is found to be most useful and to which country? Were successful examples of integration of biodiversity data into decision making documented for future references and potential replication? How well has the open-call model served the needs of this kind of action? How does the BID Programme deal with sections of the target regions which did not respond well to the calls, e.g. small island Caribbean? How can the BID Programme strengthen the regional-level engagement, contrasting e.g. SPREP/USP in Pacific vs Caribbean where it had much less cooperation at regional level? How can the BID Programme improve the targeting of the selection process and project design, e.g. through better engagement prior to the launch of open calls? Does the model of managing many very small projects justify its cost in terms of economies of scale/overhead in administration and financial micro-management?*	Triangulation of evidence				

Source: CSIL elaboration

ANNEX IV – BID Logical Framework

	Description	Indicators	Source of verification	Assumptions
Goal	Improved management of natural capital for human well-being, through increased application of biodiversity information as evidence for decision making	Decision-makers perceptions of the availability of biodiversity information and its value to support their needs for policy and decision-making relating to management of natural capital for human well-being	- Funded project reports - BID Programme – Baseline Report - Best Practices for mobilizing policy-relevant data - Impact study for the BID programme - BID Impact Summary - Regional meetings reports	- More readily available biodiversity information leads to better science and evidence-based decision making - Policy-makers can integrate scientifically sound biodiversity information into existing decision making processes
Specific objective	Availability of the information resources required to address key policy needs around biodiversity	At least 1.5 mln new georeferenced species occurrence records published openly on GBIF by at least 250 institutions in the BID target countries, used in at least 100 peer-reviewed publications and six documented examples of policy or decision processes	- GBIF literature tracking - Funded project reports - GBIF national update reports - Impact study for the Biodiversity Information for Development (BID) programme - BID Impact Summary	- Existing sources of biodiversity information could address key policy needs if mobilized and made easily accessible for their reuse - Key institutions and countries see the benefits of sharing and publishing biodiversity data

	Description	Indicators	Source of verification	Assumptions
Result 1: Enhanced capacity for effective mobilization and use of biodiversity information	Sub-Result 1.1 Improved enabling environment for collaborative mobilisation of targeted biodiversity data in each of the three target regions	At least 15 new countries or organizations establishing formal GBIF nodes through signature of the GBIF Memorandum of Understanding (11 nodes established by 2020)	-Programme evaluation report - Regional meeting reports - BID Programme – Baseline Report - Best Practices for mobilizing policy-relevant data - Impact study for the BID programme - BID Impact Summary	- In each of the regions it is possible to establish overall governance for collaborations between countries - Overall agreement can be reached between countries in the region on the priorities for biodiversity data mobilization
	Sub-Result 1.2 Enhanced capacities of key stakeholders for coordinating the mobilization, management and use of targeted biodiversity data and establishing biodiversity information systems and networks, through the concept of training the trainers	Certification of biodiversity data skills for at least 100 professionals from the BID target regions (75 professionals certified by 2020)	- Capacity enhancement workshops reports - Funded project reports - Best practice report - Training material available on the eLearning platform - Project pages on GBIF.org	The participants in the capacity enhancement workshops have the necessary institutional support to carry out subsequent training activities in the context of the funded projects
	Sub-Result 1.3 A strengthened community of practice supporting the implementation of funded projects	At least 250 new institutions from the BID target countries and regions registered as data publishers in the GBIF network (222 new institutions registered by 2020)	- GBIF.org country pages - Impact study for the Biodiversity Information for Development (BID)programme - BID Impact Summary - Project pages on GBIF.org	There is capacity and institutional support for experts to contribute to mentoring and helpdesk activities

85

Description	Indicators	Source of verification	Assumptions
Result 2: Enhanced availability of information resources and best practice guidance for mobilisation and application of biodiversity information for key policy needs			
Sub-Result 2.1 Partnerships between key holders and users of biodiversity data are established or strengthened through consortia or biodiversity information systems and networks	Improvements in capacity of biodiversity information facilities in the BID target regions measured through self-assessments at the start and end of funded projects	- Funded project proposals and reports - GBIF.org country pages - Capacity self-assessments by funded project leads at the start and end of their projects	Policy and decision makers become sufficiently engaged to support the establishment of national and regional biodiversity information facilities
Sub-result 2.2 Targeted biodiversity data mobilized in each of the regions	At least 1.5 mln biodiversity data records pertaining to the BID target regions, freely and openly available on GBIF.org, incl. datasets relevant to priority such as threatened species, invasive species and protected areas (1 mln records openly available by 2020)	- GBIF.org analytics - Funded project reports - GBIF national update reports - Impact study for the BID programme - BID Impact Summary - Project pages on GBIF.org	Collaborators agree to share data and use interoperable data standards
Sub-Result 2.3 The use of the mobilized biodiversity data is promoted through engagement with the scientific and policy communities	At least six documented examples of policy or decision processes directly supported by data mobilized through the BID programme (three documented examples by 2020)	- Google analytics - Funded project reports - GBIF national update reports - GBIF literature tracking - Best Practices for mobilizing policy data - BID Impact Summary - Training materials online	- Projects are able to translate the mobilized data into formats suitable for reuse - Policymakers are involved in the projects and see the benefit of using the mobilized biodiversity data in decision-making processes
Sub-Result 2.4 Identification and analysis of examples of the use of targeted biodiversity information in decision-making	Examples of new projects, programmes and actions in the BID target actions and regions that make use of the approach and best practices identified through the BID programme	- Evaluation report - Best Practices for mobilizing policy-relevant data - Impact study for the BID programme - BID Impact Summary	There will be sufficient implementation time within the programme for projects to generate guiding examples and best practice on the integration of biodiversity information into policy and decision making
Sub-Result 2.5 Achievements of project interventions are recognized by international science-policy initiatives	References to BID in communications and capacity building documentation from the UN Convention on Biological Diversity (CBD) and Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES)	- Regional meeting reports - Capacity enhancement workshop reports - Best Practices for mobilizing policy-relevant data: Examples from sub-Saharan Africa, the Caribbean and the Pacific - Closing event report	Timely opportunities can be found to align the programme's activities with those of international science-policy initiatives

Source: CSIL elaboration on the BID Logical Framework

ANNEX V - Portfolio database

For the purpose of the Portfolio Analysis, the team has collected a structured set of data related to *the BID programme as a whole*, *the individual BID funded projects, the BID funded beneficiaries, and BID funded projects' outputs*. Specifically, relevant data and information was extracted from multiple sources, such as project documentation (provided by GBIF), project website, GBIF internal data, GBIF website, GBIF survey data, previous BID evaluation studies, GBIF API portal, etc.

The core of the Portfolio Databases is the **dataset at the project level**, which describes the key features of each project, expected outcomes, deliverables and milestones achieved by each project financed by BID programme. Other datasets are then linked to the dataset at the project level through the pr*oject ID*. In total, **six datasets at different levels of granularity** (described below) were built to properly assess the BID projects.

In particular, for each project, data was collected on outputs, such as datasets and workshops delivered. These outputs are reported in two different datasets which are linked to the dataset at the project level through the *Project ID*. Additionally, for each dataset produced by the different projects, data on citation and downloads was also collected and included in two different datasets (one at download level and one at citation level) that are linked to the dataset at dataset level through the *dataset key* and in turn to the dataset at project level through *project ID*.

Finally, a separate **dataset at BID level Programme** not interlinked with the project-level dataset is also included in the Portfolio Database to assess the overall performance of the Programme.

This structure enabled connecting - in a systematic way - project information to beneficiaries, output, and their use. The figure below provides a graphical representation of the structure of the Portfolio Database.

The database – including the different datasets along with a description of the information included in each dataset – is provided in a separate document (Excel).

Figure 33 - Graphical representation of the Portfolio Database

Dataset at BID Programme Level
including for instance:
Number of publishers
Number of registered users
Number of workshops

Dataset at Project Level
including for instance:
Project Title
Project start and end date
Project funding
Number of datasets produced

Dataset at Beneficiary Level
including for instance:
Organisation name
Organisation role

Dataset at Dataset Level
including for instance:
Dataset Title
Dataset type
Number of occurences
Number of downloads
Number of citations

Dataset at Workshop Level
including for instance:
Project ID
Workshop title
Workshop venue

Dataset at download Level
including for instance:
Dataset Title
Number of downloads per year
Number of records downloaded per year

Dataset at citation Level
including for instance:
Dataset Title
Number of records downloaded
Literature type

ProjectID

ProjectID

Project ID

Dataset key

Source: CSIL elaboration

ANNEX VI - Survey Results

Survey to BID participants

| RESPONSE RATE	DESCRIPTION
Targeted stakeholders*	491 out of which 81 are project leader only, 15 are both project leader and partner, while 395 are partners only.
Response rate	**24%**. Overall, we collected 120 questionnaires. These include 33 project leaders only, 9 both project leader and partner, 78 project partners only. Some respondents were involved in more than one project.

*Amongst the project leaders (overall 96), 3 have been leading more than one project. These include (1) SPREP (lead 4 projects); (2) Natural History Museum of Zimbabwe (lead 2 projects); (3) Faculty of Agronomie, University of Abomey-Calavi (lead 3 projects).

A.3 Your country:

Con tecnologia Bing
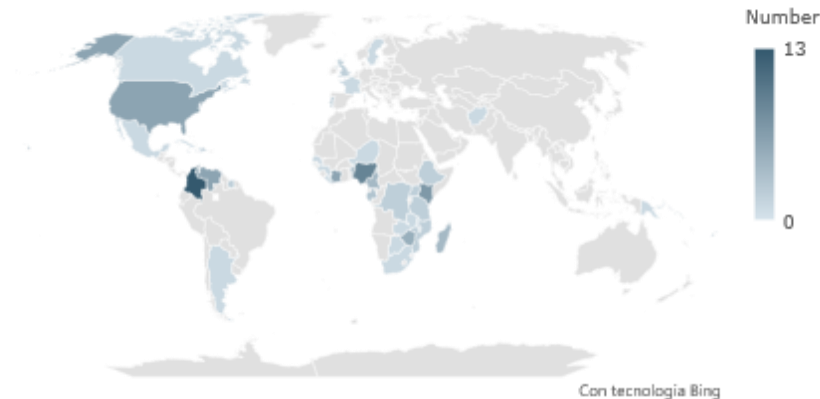
B.1 How did you come to know about the BID calls? If you have been involved in different projects under different calls, please indicate all sources from which you have been aware of them?
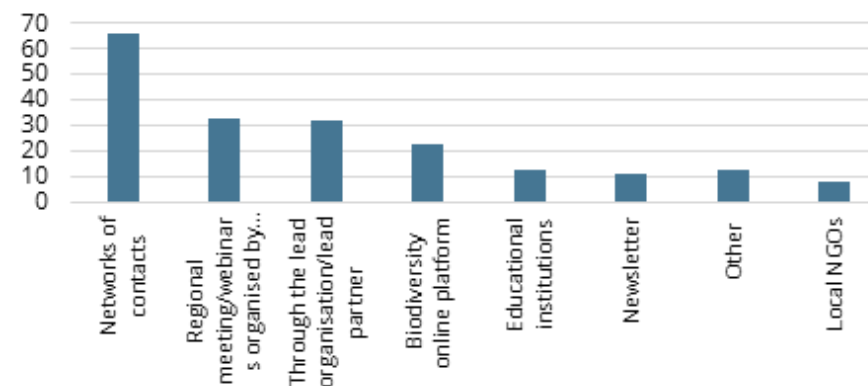

[Number of respondents, multiple answers were allowed] Other includes: An online portal that aggregates calls of proposals, African Rise meeting in South Africa (2015), GBIF, Social media (e.g. Twitter), GBIF node in Madagascar, Ongoing relationship with GBIF Secretariat, Sib Colombia web page, Collaboration with ISRA Dakar Sénégal

B.2 How many projects – funded by the BID Programme – have you been involved in?

3 -4 times 14
2 times 23
1 time 83
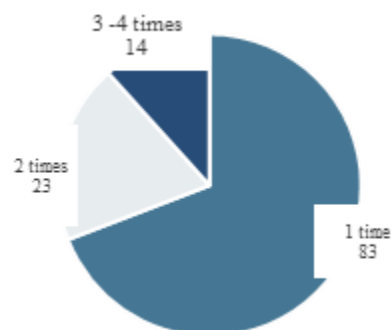
[Number]

B.3 Which of the following aspects were the most challenging in the preparation of the proposal(s) you have been involved in (concept note and full proposal)?
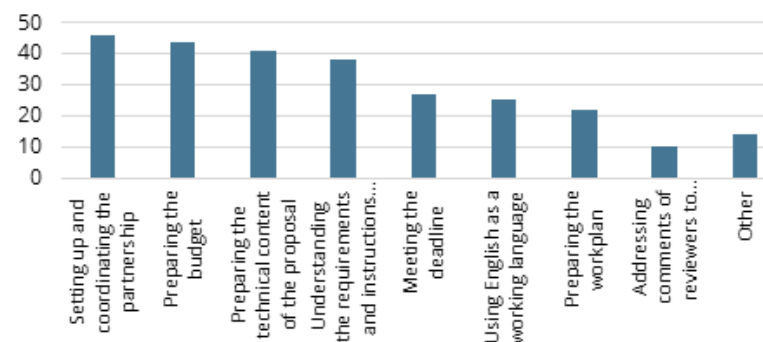
[Number of respondents, up to three most challenging aspects could be selected] Other includes: Convince partners that publishing data to GBIF - through in-house Archive Publishing tool - was a viable way, data cleaning, pandemic made difficult to obtain the letters of support and access to the collections to make the data estimates planned for digitization and mobilization, ineligible expenses.

B.4 During the application phase, which of the following types of support – provided by GBIF – were most useful in improving the preparation of proposal(s) you have been involved in?
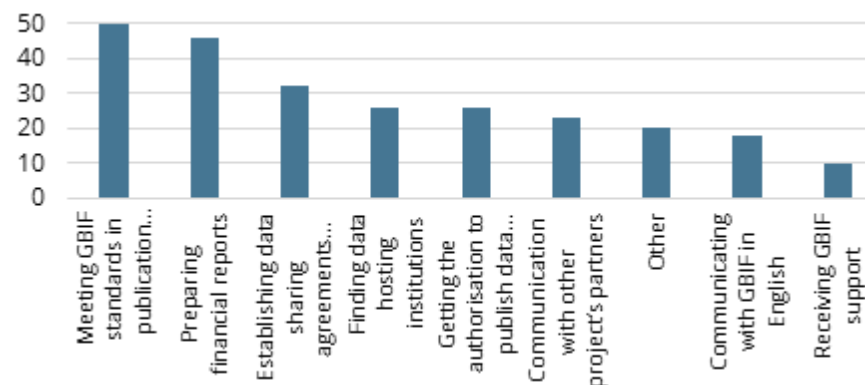
B.5 Which of the following aspects were most challenging during the implementation of the project(s) you have been involved in?
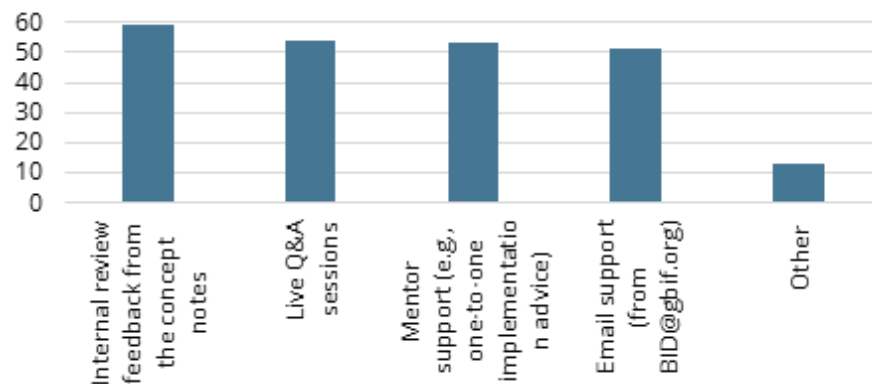
[Number of respondents, up to three most useful ones could be selected] Other includes: Training workshops and webinar organised by GBIF, Email support (from helpdesk@gbif.org), resources available in the webpage related to the call, Regional contact support (e.g. the one supported by Colombian node).

[Number of respondents, up to three most challenging aspects could be selected] Other includes: obtaining an external contractor to build data hub, purchasing equipment delays due to shipping an shortage of US currency, internet connectivity, partners responsiveness, coordinate (and teach about standards) people in different places, communication with data users from the government, administrative procedures to execute financial resources, unforeseen adaptation of budget lines, hiring staff, mobilize the fund in due time (administrative process are sometime complicated), to understand the role of the GBIF national node in the process, international shipment of biological samples, receive and execute external/international funding, developing articles from the datasets was intense, managing international collaboration in a pandemic situation.

B.6 To what extent did the following types of support – provided through the BID Programme Capacity Enhancing Workshop - meet your needs? [Please rate the following types of support from 1 (Not at all) to 5 (Completely). Please select Not applicable if you have never benefitted from this support]

B.7 To what extent were the following types of support – provided by GBIF – useful to improving the implementation of your project?[Please rate the following types of support from 1 (Not useful at all) to 5 (Completely useful). Please select Not applicable if you have never benefitted from this support]
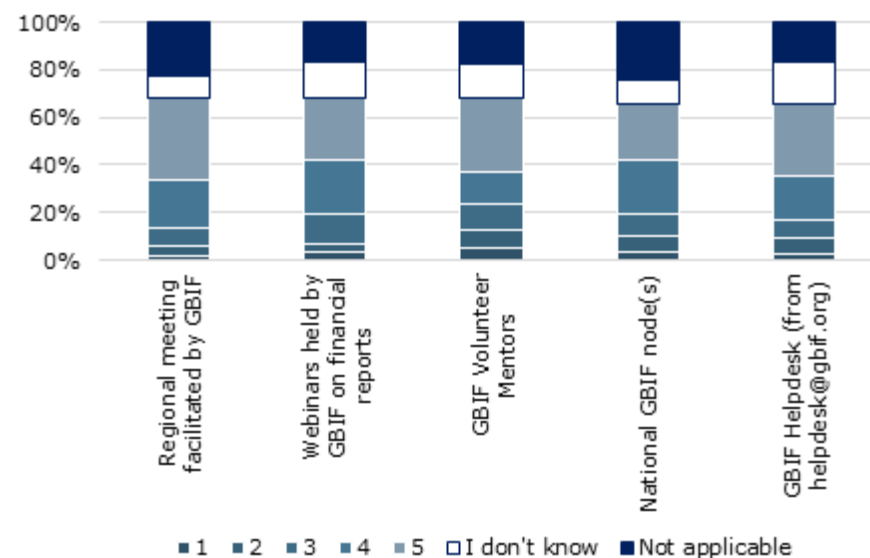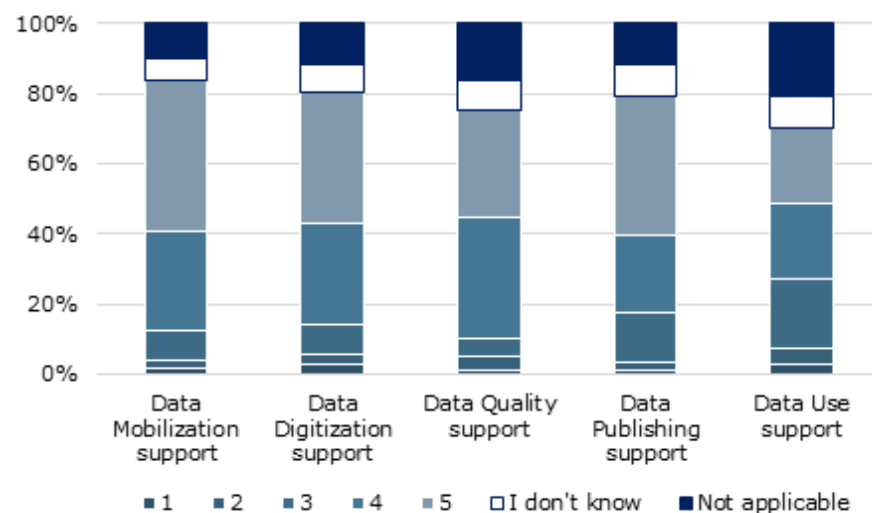
C.2 Which of the following activities were implemented/will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to mobilize biodiversity data relevant to sustainable development?

C.3 Which of the following activities were implemented/ will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to integrate biodiversity information into policy and decision-making processes?
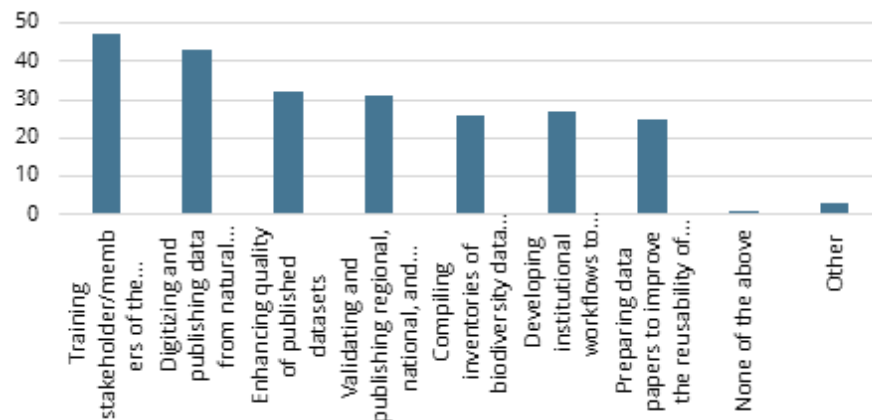
[Number of respondents, multiple answers were allowed] Other includes: developing educational materials for the general public, establishing a national network of researchers in data publishing, using published data to develop policy briefs and publish journal level articles

[Number of respondents, multiple answers were allowed] Other includes: Developing tools to share biodiversity data with decision makers, developing policy briefs

C.4 Which of the following activities were implemented/ will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to integrate data solutions into the policy-making process?

C.5 Which of the following activities were implemented/ will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to ensure capacity enhancement of national biodiversity information facilities and/or long-term mobilization and data-sharing?
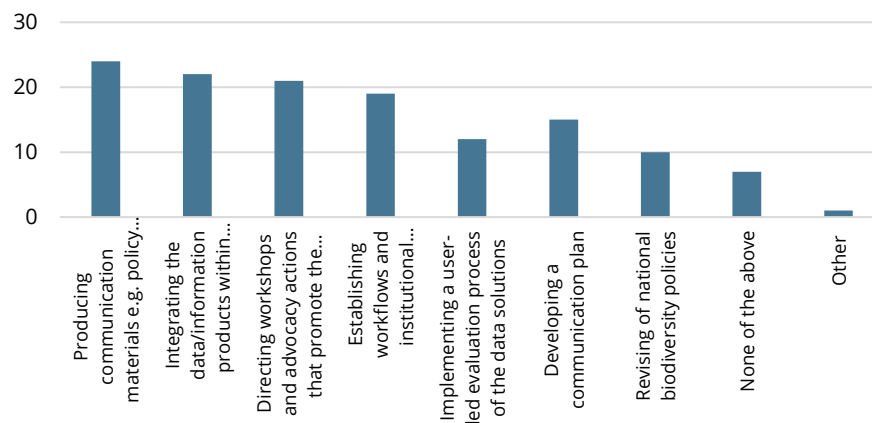
[Number of respondents, multiple answers were allowed] Other includes: developed a marine research data management plan
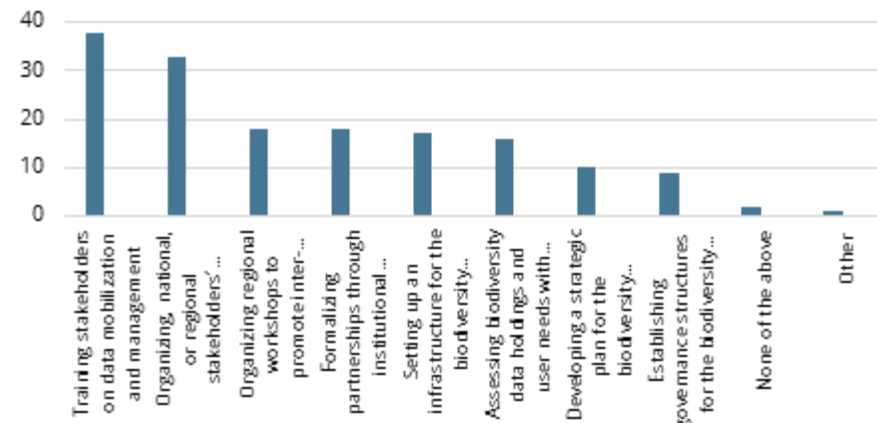
[Number of respondents, multiple answers were allowed] Setting up a Biodiversity Information Development research center (BID-C) to continue with such activities after the term of the project
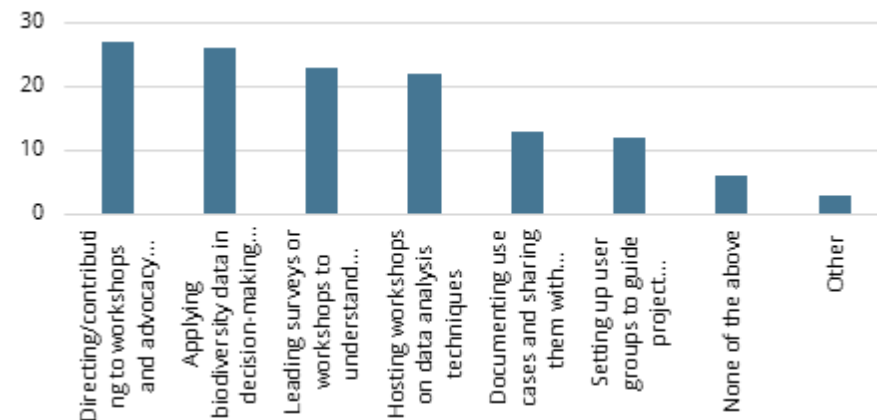
C.6 Which of the following activities were implemented/will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to define user needs?
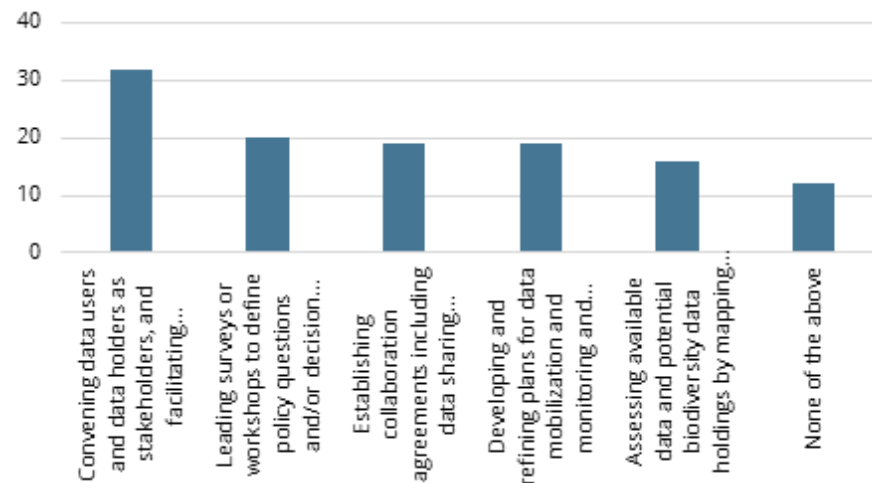
C.7 Which of the following activities were implemented/ will be implemented throughout the project (by your organisation or other organisations/partners involved) in order to produce user-ready analyses of GBIF-mediated data that respond to policy questions?

[Number of respondents, multiple answers were allowed]
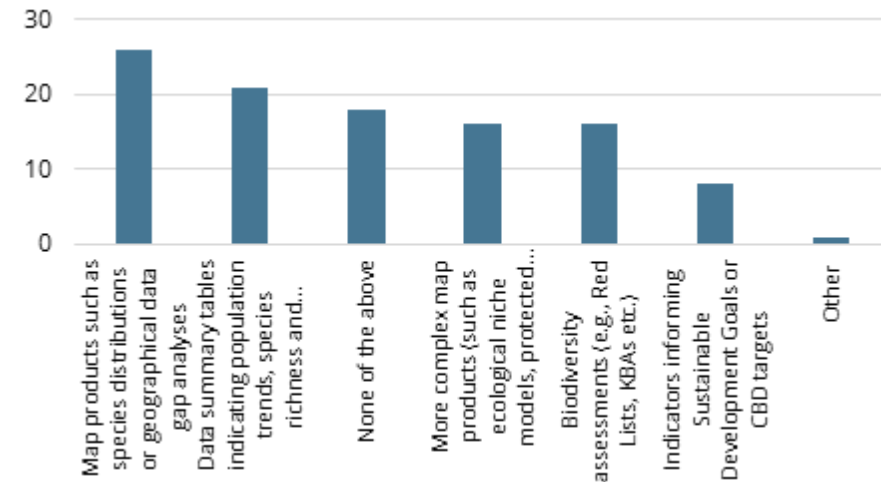
[Number of respondents, multiple answers were allowed] Other includes: Development of indicators, assessments, maps or other information tools that have been/will be integrated into national/regional biodiversity strategies and action plans.

D.1 How do you think did your project contribute to policy/decision making processes?

D.2 To what extent is your project (expected to be) related to the achievement of the following goals?[Please rate the contribution of the project to following objectives as either Not Related, Somewhat Related or Directly Related]

Chart (left, bar chart):
- Enabling open access to data which were not...: ~41
- Enhancing the capacities to use published data: ~37
- Raising awareness about the relevance of...: ~37
- Establishing collaborations with relevant...: ~32
- Developing indicators, assessments,...: ~20
- Developing indicators, assessments,...: ~18
- Assisting in building consensus...: ~11
- Other: ~5

[Number of respondents, multiple answers were allowed] Other includes:

Y-axis: 100%, 80%, 60%, 40%, 20%, 0%

Categories:
- Conservation, restoration and sustainable management of...
- Developing strategies to adapt to climate change and reduce greenhouse gas...
- Developing capacities in the transition toward green and circular economies
- Improving digitalisation of natural history collections
- Wetland protection in accordance with the RAMSAR convention
- The enforcement of provisions on the illegal trade of endangered wildlife...

Legend: ■ Not Related ■ Somewhat Related ■ Directly Related ■ I don't know

D.3 To which of the following UN Sustainable Development Goals did your project contribute or is expected to contribute the most?   D.4 Has your project enabled/is it expected to enable...

Chart (left): Number of respondents by SDG goal
- (17) Partnerships for the Goals
- (16) Peace, Justice, and Strong Institutions
- (15) Life On Land
- (14) Life Below Water
- (13) Climate Action
- (12) Responsible Consumption and Production
- (11) Sustainable Cities and Communities
- (10) Reduced Inequality
- (9) Industry, Innovation, and Infrastructure
- (8) Decent Work and Economic Growth
- (7) Affordable and Clean Energy
- (6) Clean Water and Sanitation
- (5) Gender Equality
- (4) Quality Education
- (3) Good Health and Well-being
- (2) Zero Hunger
- (1) No Poverty
- None of the above

[Number of respondents, up to three most relevant ones could be selected]

Chart (right): categories
- Partnerships or institutional agreements on data-sharing
- Institutional, national, and regional networks/consorti...
- Thematic networks/consortia to support biodiversity data...
- Other informal networks (e.g., citizen science networks)
- Partnership agreements with the countries of the organisation of...
- Sustainable partnerships with international financial...
- A joint African Union (AU)-EU partnership agenda and/or joint...
- Other

[Number of respondents, up to three most relevant ones could be selected]

| D.6 How many replications of BID capacity enhancement workshops have you completed? | D.6.1 Which kind of replication workshops did you organise? |

Categories: 0, 1-3, 4-5, More than 5

[Number of respondents]

Categories: Data mobilisation and data quality workshop, Data publication workshop, Data use workshop, Other

[Number of respondents, Multiple answers were allowed]

96
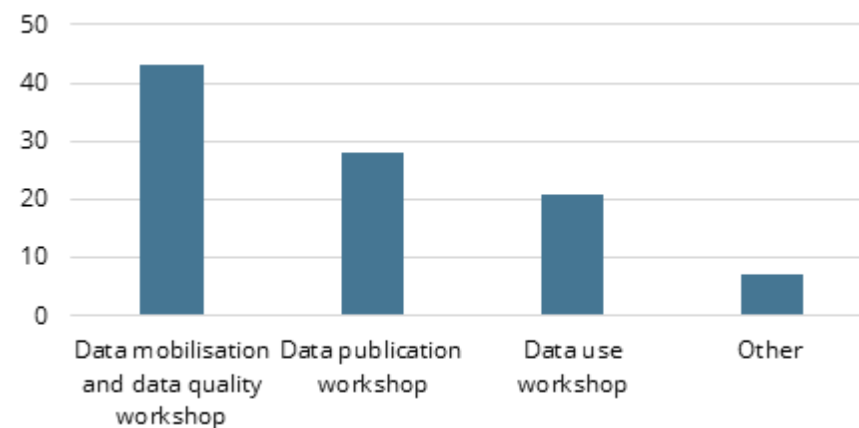
D.6.2 In total, how many participants joined these workshops?
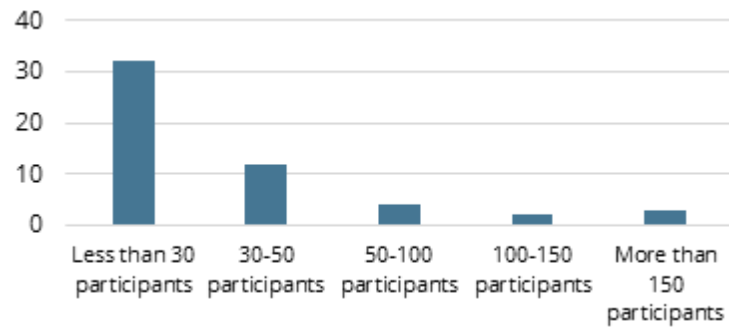
D.7 Have you used GBIF data in non-peer reviewed publications (e.g., presentations, catalogues, etc.)?
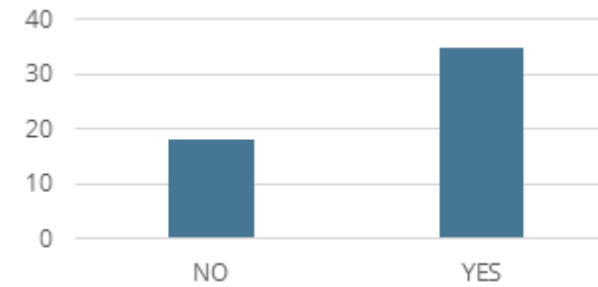
D.8 Has the project developed synergies/linkages with other projects (financed by BID/not financed by BID)?
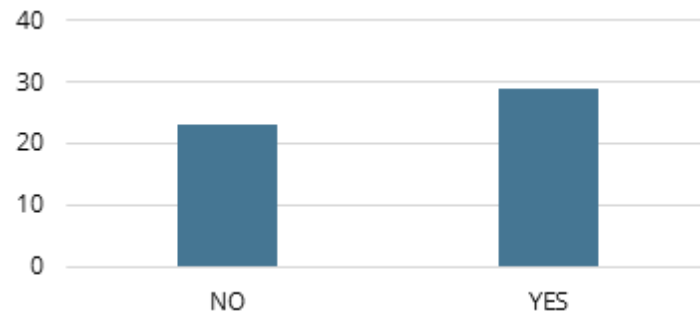
D.9 Which actions did you put in place to ensure that the results of your projects are long-lasting?
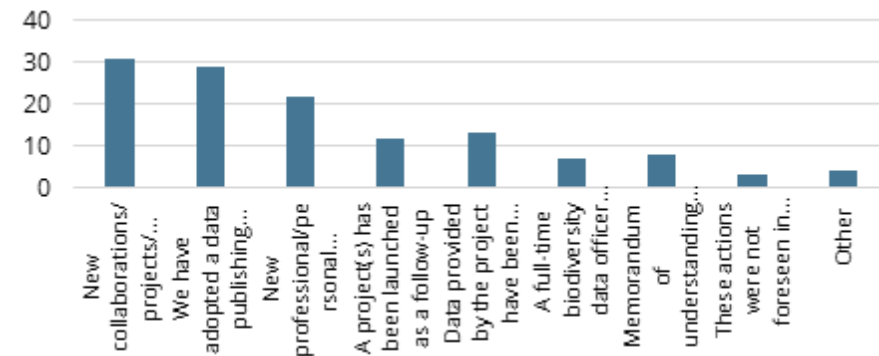
E.1 If you had not received funding from BID, what would have happened to your project?

E.2 Thanks to the participation to the BID programme, were you able to get other funds from other sources?

[Number of respondents]

[Number of respondents]

[Number of respondents]

■ Not of Value   ■ Moderately Valuable   ■ Highly Valuable   □ I don't know

Survey to unselected projects

RESPONSE RATE	DESCRIPTION
Targeted stakeholders	367 out of which 287 submitted the concept note, 38 submitted the full proposal and 42 in the reserve list.
Response rate	**14%**. 53 respondents (some respondents were involved in more than one unselected project).
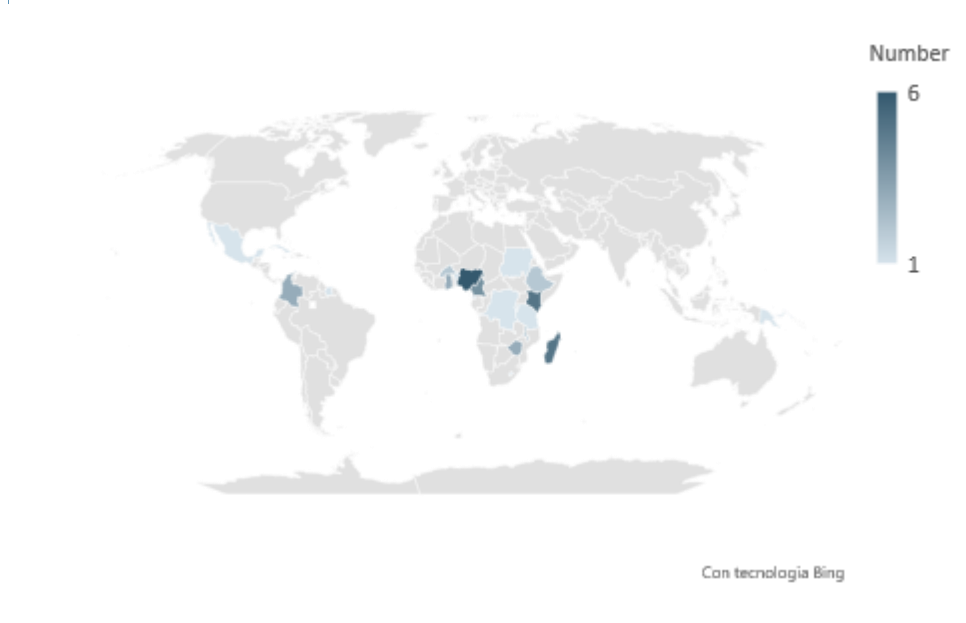
A.3 Your country:	A.4 For how many times have you applied to the BID Programme?

Con tecnologia Bing
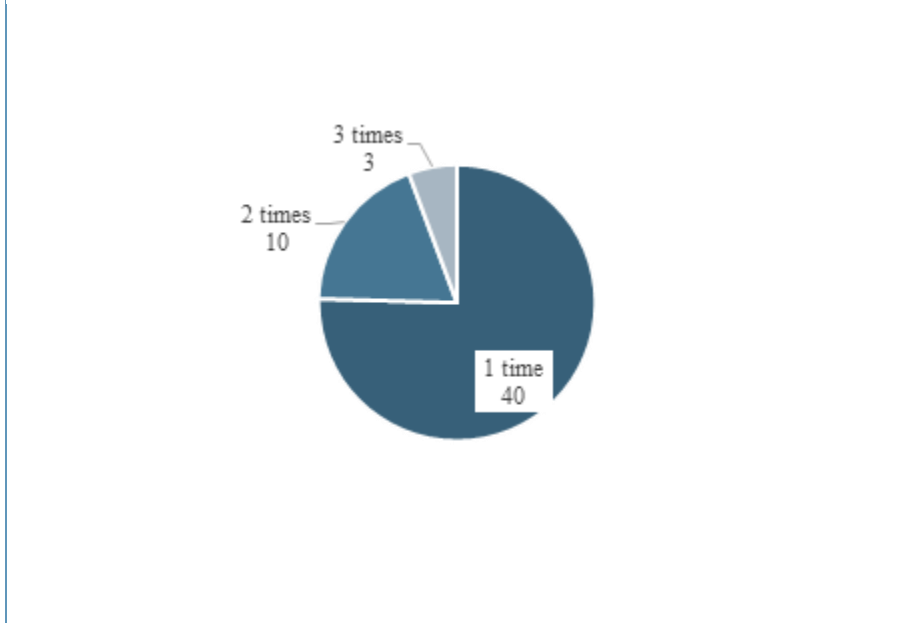
A.5 To which of the following calls have you applied to?	A.6 How did you come to learn about the BID call?

[Number of respondents, Multiple answers were allowed]

[Number of respondents, Multiple answers were allowed]
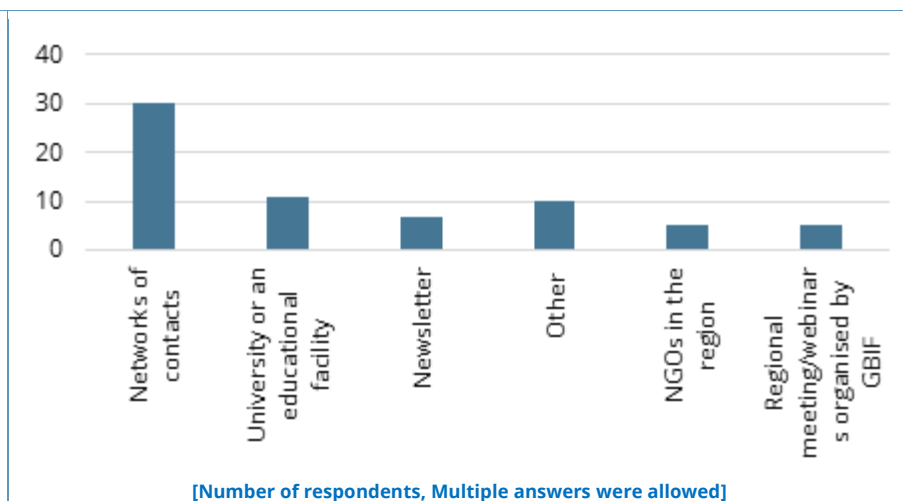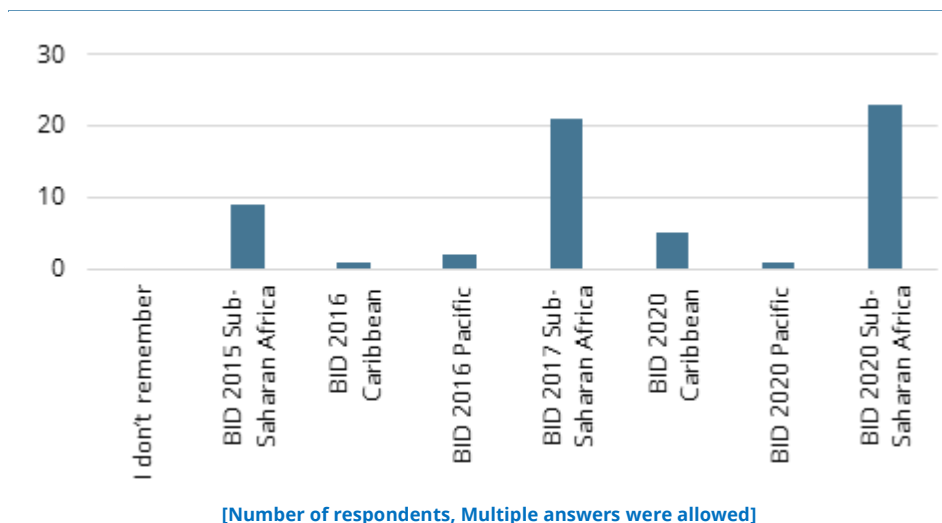
| A.7 How challenging were the following tasks of the BID Programme selection process? Please rate the following tasks from 1 (Not challenging at all) to 5 (Very challenging). Please select Not applicable if you have never completed the task. | A.8 Which of the following aspects were most challenging in the preparation of your proposal? [Please, pick up the three most challenging aspects] |

| A.9 During the application phase, which of the following types of support – provided by GBIF – were most useful in improving the preparation of proposal(s) you have been involved in? | B.1 After your project was not selected for the BID Programme funding, what happened? |
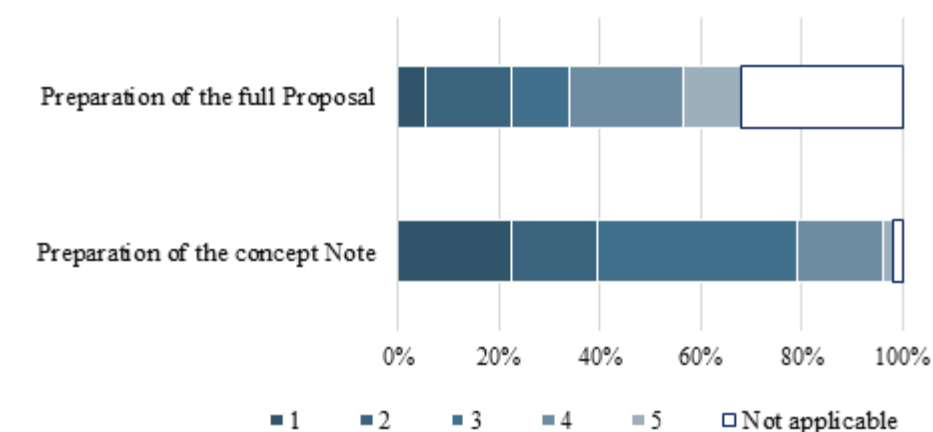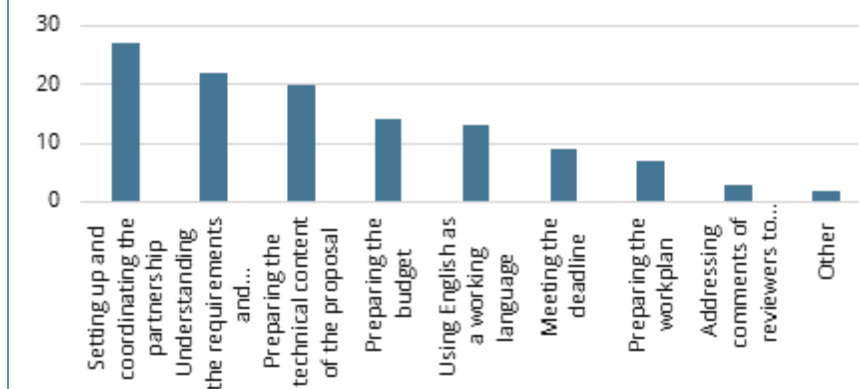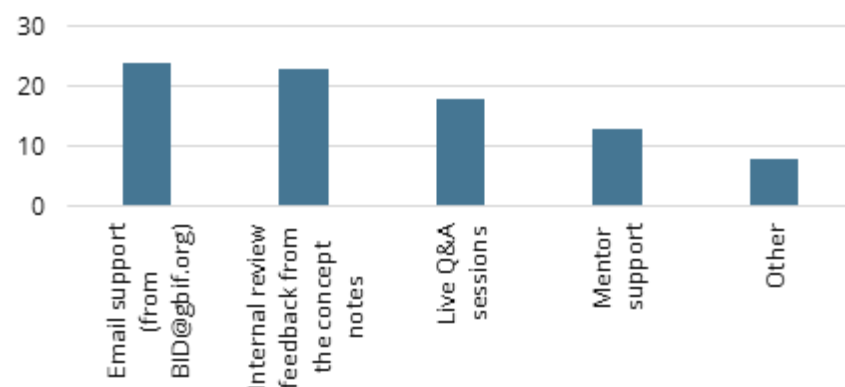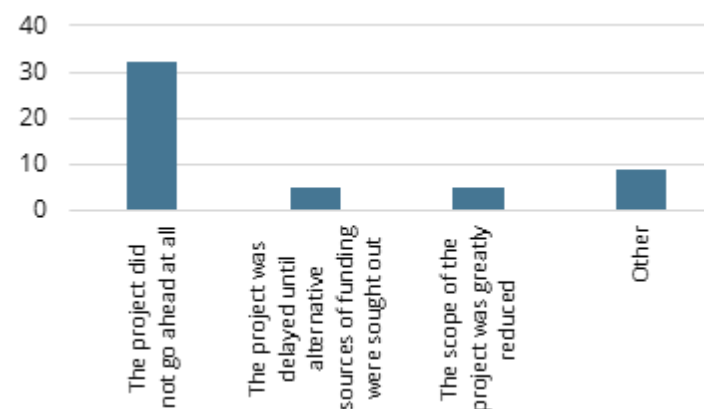
B.2 Were you able to secure comparable funding for your project from other sources?
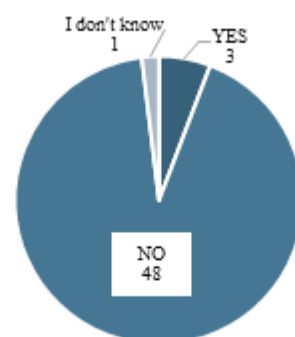
B.3 If the GBIF Secretariat secures funds to organise a third phase of the BID programme, would you apply for funding again for future biodiversity projects?

I don't know
1

YES
3

NO
48

I don't know
5

NO
1

YES
46
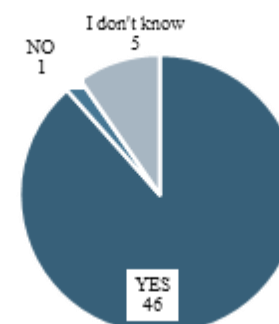
B.4 Overall, how valuable do you perceive the BID Programme to be for…?[Please rate the following statement]

Countries other than ACP

GBIF community

ACP (African, Caribbean and Pacific) countries

Your region

0%   20%   40%   60%   80%   100%

■ Not of Value   ■ Moderately Valuable   ■ Highly Valuable   I don't know
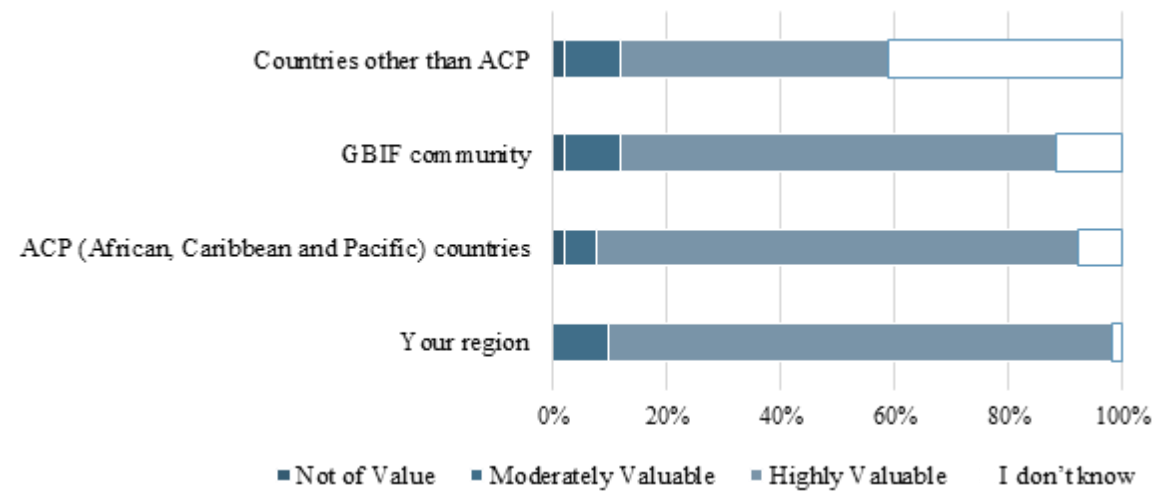
ANNEX VII - Case studies factsheets

Case study I

Project's title	**Strengthening the biodiversity stakeholders' network in Togo**
Project ID	BID-AF2015-0004-NAC
Related BID call	Sub-Saharan Africa 2015
Region (Country)	Western sub-Saharan Africa, Togo
Project Leader	University of Lomé (Togo), Faculty of Science, Laboratory of Biology and Plant Ecology
Partners	1. Scientific Research and Technology Division (DRST), University of Lomé (**Data holder and Data user**) 2. Ministry of Environment, Department of Water and Forestry Resources, Division of Inventory Management and Fauna Protection (**Data holder and Data user**) 3. Department of Zoology and Animal Biology, University of Lomé (**Data holder**) 4. Department of Botany, University of Lomé (**Data holder**) 5. GBIF Belgium (**Data holder and Trainer**) 6. Institut de recherche en biologie végétale, Université de Montréal (Canada) (**Trainer**)
Total funding	Total Funding Requested: € 59,971; Co-funding Offered: € 64,769
Type of grant	National Grant
Start/End date	Start Date: 01/06/2016; End Date: 31/05/2018
Deliverables	1. 1 capacity enhancement data use workshop organised with the collaboration of the Ministry of Environment and dedicated to biodiversity data holders and users on data papers production and publication 2. 1 capacity enhancement data mobilisation and publication workshop (replication workshop) with the collaboration of the Ministry of Environment dedicated to Togo's biodiversity data holders and users 3. 1 sensitization workshop dedicated to national biodiversity stakeholders and other training activities for them on data mobilisation, digitalisation, georeferenced, and publication practices 4. 100,000 records collected, digitised, cleaned, georeferenced and published on Togo's node own publication platform (IPT V2.1.1.), hosted by GBIF Belgium and GBIF France 5. 1 national survey conducted in collaboration with the Ministry of Environment of Togo and launched by the consortium to understand the national biodiversity data requirements (targeted to data users) 6. 1 national Red-list elaborated based on the results of a national survey launched by the lead organisation to know the state of dataset on the red lists available in Togo (national inventory of biodiversity data available on red lists) 7. 1 Invasive Alien Species (IAS) Management Pilot Plan designed including strategies to fight against invasive alien species

Rationale for selection	This is a national project, run by a public university. It is implemented in the Western sub-Saharan Africa. Togo is a voting member of GBIF and has an established GBIF node. An integral part of this project is the 'development of an agreement for a perennial, efficient and fruitful collaboration between the Node and different stakeholders'. Through this case study, CSIL wanted to investigate on this collaboration and evaluate the effectiveness of the GBIF Togo node in engaging with project stakeholders. Also, another reason for its selection to assess why no badges were issued under this project.

INTRODUCTION

The geographic configuration of Togo gives it a wide climatic gradation as well as a diverse biodiversity. With the almost total absence of any management plan over the last decades, biodiversity degradation has increased, pushing some species closed to the risk of extinction while other invasive species have spread throughout the country, threatening the equilibrium of natural ecosystems. In the early 2010, Togo biodiversity public authorities have identified the need for strategic guidance and technical support in order to implement national conservation strategies for biodiversity. First of all, this need meant to improve data mobilisation capacities at the national level as well as publication capacities, especially to publish more and new data following the best quality practices that could be used by national policy makers for evidence-based decisions. As Togo already had its own GBIF node, it was decided to increase efforts to reinforcing it. In line with the BID intervention logic, *Strengthening the biodiversity stakeholders' network in Togo,* this project aimed to improve the availability, quantity and quality of biodiversity data in Togo required to address key policy needs around biodiversity conservation at the national level. It also sought to strengthen data mobilisation capacities in the country and to build a strong national network of biodiversity data stakeholders (publishers, holders, end users) in order to provide biodiversity policy makers with evidences for implementing conservation actions. More specifically, this project contributes to sub-result 1.2. of the BID Logical Framework, namely "*enhancing capacities of key stakeholders for coordinating the mobilisation, management and use of targeted biodiversity data and establishing biodiversity information systems and networks, through the concept of training the trainers*".

To achieve its objectives, data mobilisation activities were implemented in the very first weeks of the project (June/July 2016), by first contacting data holding institutions and determine to what extent they could share their collections. The data mobilised were later cleaned, georeferenced, digitised and published according to common scientific standards directly on GBIF Togo node. The objective initially announced was to make available at least 100,000 new records on GBIF Togo. At the time of the interview, some datasets created under the project were still under construction or approval before publication.

In addition to this, a national survey conducted with the support of Togo's Ministry of Environment was launched by the consortium which targeted biodiversity data users to understand the national biodiversity data requirements. In the first months of the project, preliminary meetings were also organised between project's partners and national biodiversity data holders to lay the foundation for a perennial, efficient and fruitful agreement of collaboration between GBIF Togo node and the different national biodiversity data stakeholders. Meeting officially data holders before any capacity enhancement workshops was decided by the partners in order to officially launch the project by inviting media to cover and relay the event and let other relevant institutions know about the project and join the GBIF node and partners. In parallel, two researchers involved in the project (including the project coordinator) attended a BID capacity enhancement workshop held in August 2016 in Rwanda. Based on this experience and given that the project coordinator is a GBIF workshop mentor, the lead organisation organised two capacity enhancement workshops using GBIF materials (BID replication workshops). The first was dedicated to enhancing capacities of national biodiversity data holders and users in data mobilisation and publication related activities. The second also targeted national data holders and users but was dedicated to enhancing their capacities in data papers production and publication. Both workshops were

organised with the support of the Togo's Ministry of Environment. A third workshop was organised under the project for sensitising national biodiversity stakeholders about the existing and potential threats for biodiversity in Togo, and other training activities were dedicated to them on data mobilisation, digitalisation, georeferenced, and publication practices.

In compliance with its objective of providing policy-makers with data for evidence-based decisions, the project's consortium launched a national survey to produce an inventory (state of datasets) concerning red lists evaluations availability in the country. Based on the results of this survey and on the evidences collected under the data mobilisation activities, the project elaborated and published a national red list of threatened species. In line with the same objective and based on the mobilised data's evidences, the project designed and made publicly available a national strategy for tackling invasive alien species called Invasive Alien Species (IAS) Management Pilot Plan.

All these activities were implemented by a consortium of 7 partners, including the lead organisation (University of Lomé, Togo). However, the following stakeholders were also involved in the project:

- o Phytotherapists NGOs: they were involved in the capacity enhancement training activities of the project on data publishing tools, as participant, as well as data holding institutions.
- o University of Kara (Togo), NGOs, and the Ministry of Agriculture and Fisheries of Togo: they were involved in data mobilisation activities, as data holding institutions.
- o The Ministry of Tourism of Togo, the Ministry of Health, the Ministry of Environment, the Ministry of Agriculture and Fisheries, the CBD focal point, the National Research Institute and NGOs: they were involved in biodiversity data integration activities, as data using institutions (as policy and decision-making institutions).

PROJECT DESIGN AND IMPLEMENTATION

The project coordinator was from the University of Lomé (Togo) – the lead organisation - and he is also the manager of GBIF Togo node. Having a member of the node as project coordinator was advantageous since he was aware that GBIF was designing the BID Programme and a specific call dedicated to Sub-Saharan Africa before they were officially launched. Therefore, he prepared - together with project's partners - a first proposal to be submitted under the call officially launched in 2015. Also, the partners decided to apply because the BID intervention logic seemed especially relevant to them with respect to the activities they wanted to implement for strengthening GBIF Togo network (see above section "*Introduction*"). Interviewee revealed that external consultancy services were used during the proposal designing phase to ensure the submission of a relevant and suitable application fitting with BID thematic priorities. Two former colleagues of the project's coordinator were thus involved in the project design and the drafting of the first proposal (concept note) as external consultants. They came from the University of Leads (United Kingdom) and from the University of Granada (Spain).

After this designing phase, the first project's proposal (concept note) was submitted to GBIF. According to the interviewee, the partners were informed of the GBIF decision to push the concept note to the second selection phase (submission of full proposal) within approximately four weeks. This period seemed appropriated to the project's coordinator as he is aware that it is necessary for the GBIF selection committee to check the relevance and suitability of all the concept notes they received, and to give relevant feedbacks to all applicants (even to unselected proposals). The feedback provided by the GBIF selection committee were really useful and helped them to fine-tune the project in view of the full proposal submission. In general, all the selection process was perceived as fair and unbiased by the project's partners.

Once the project was officially granted and launched, the partners did not suffer from any GBIF administrative burden. The project's coordinator, as GBIF Togo node manager, was aware of the GBIF administrative and reporting requirements and was already involved in a GBIF funded project (under previous Programme other than BID). Therefore, he was quite familiar with the administrative tasks arising from this type of project. The only difficulty they faced was related to financial reporting. However, the midterm progress report allowed them to revise and correct mistakes and inconstancies, with the support of the GBIF helpdesk.

During the project duration, the node's monitoring and evaluation committee met monthly with the project coordinator to assess the evaluation and progress of the work of mobilising and publishing the data but above all to appreciate the commitment of the data holders and users which attended the project's capacity enhancement workshop (replication workshop organised by the project). The activities performed under the project to strengthen GBIF Togo node network also shined a light on the weaknesses of the node and the actions still required to improve it in the future. For instance, through data mobilisation activities, the partners were aware of data shortcomings existing in the datasets mobilised from Togo GBIF node and expressed the need for a better coordination and cooperation between node's members in the future. Having a better cooperation should allow the node's members to enhance the capacities in providing cleaned and relevant data and to better divide the tasks under future projects.

During projects' implementation, no badges were issued although two attendees were sent by the lead organisation to attend a BID capacity enhancement workshop ("*BID Capacity Enhancement Workshop: Biodiversity Data Mobilisation"*, held in Rwanda in August 2016). Interviews with stakeholders clarified that teaching materials delivered by GBIF for workshops' certification were only provided in English while the attendees were only French speakers (one student from the University of Lomé and one official from the Ministry of Environment). The project's coordinator contacted GBIF helpdesk which supported them with suitable teaching materials. At the time of the project's final report submission, they have not yet obtained the badge (and this appears on the project's final report) but at the time of the interview (conducted by CSIL Team on July 19th 2022) they finally received it.

PROJECT'S EFFECTIVENESS

Data mobilised and then published by the project on GBIF were used and are still used by officials from the Ministry of Environment to carry out research and publications (press release, scientific articles, science popularisation). For instance, based on the data published by the project, the Ministry of Environment designed and implemented a national moratory of 10 years to ban trees cutting in Togo for a particular species (*Pterocarpus*). This moratory is part of a national strategy for forest conservation actions called Sustainable Management of Forest Resources National Program (PNGDRF) and, more widely, allowed the update of Togo's National Strategy for Conservation of Biological Diversity (CBD) which complies with the country's commitments under the CBD (National Biodiversity Strategies and Action Plans (NBSAPs) 2011-2020). The data made available under the project were also included in the Environmental Management and Natural Disaster National Program (PNGECN) which is a wide national programme seeking to prevent climate disasters and enhance the country capacities to adapt climate change.

Publications were also interesting achievements. At the time of the evaluation, 305 publications cited the project's data, among which 271 are referenced as "GBIF used" relevance. This makes the project the second one in terms of publications citing its data among the entire BID projects portfolio on which CSIL based the evaluation. The interviewee stated that, at the time of the interview, project's partners were still looking for scientific journals to publish what have been done under the project.

The activities carried out also made possible the biodiversity data stakeholders in Togo to be aware of data shortcomings. Once deficiencies were identified and corrected (under the data mobilisation phase), biodiversity data allowed to analyse multiple biodiversity datasets which informed biodiversity data stakeholders on climate change effectiveness and trend in Togo. Following data mobilisation activities and collection of evidences, the project organised training activities in order to raise awareness among biodiversity stakeholders (NGOs, research institutes, public authorities) and academia for instance through the "*Sensitization workshops: Awareness of politicians and decision makers*" organised in August and September 2016.

Looking at the regional/international level, the partners and the lead organisation established new relations with other relevant institutions within the region (Western Sub-Saharan Africa). After the project's official closure, these relations turned into collaborations as they gave birth to another BID funded project implemented within the region (and in Togo) under call Sub-Saharan Africa 2020, namely BID-AF2020-040-REG, "*Progress towards a regional data platform of West and Central African herbaria*". This

project was launched in April 2021 and will last until March 2023, involving partners from Guinea (Herbier National de Guinée, HNG), Benin (Herbier National du Bénin), Gabon (Herbier National du Gabon), Togo (University of Lomé), Côte d'Ivoire (University Nangui Abrogoua) and GBIF France. By doing so, the project enhanced international and regional collaborations as the new project would probably not have been set up without the establishment of preliminary relations. Also, the activities performed under the project permitted Togo to join the West African section (called WABES) of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which connects experts across West African countries to facilitate capacity-building biodiversity framework at regional level.

PROJECT'S SUSTAINABILITY

As confirmed by the interviewee, the project is committed to produce long-term impacts, both in terms of mobilised data use and node strengthening. To this end, a committee was created to follow Togo GBIF node improvements. It was first created as an informal entity of voluntary members (scientists, academia, politics, administrative) during the project implementation. However, while the project was officially closed by the end of May 2018, the committee is still working and operational now. The interviewee confirmed that efforts are currently deployed in order to make the committee fully sustainable, i.e. to make it formal and permanent within Togo's Ministry of Environment (the person managing the committee during project's implementation is expecting to become the permanent focal point). Specifically, the committee is in charge of providing advices to node's members regarding data requirements and strategies to adopt for data mobilisation and publication, representing the node at institutional level and lobbing for its interests. The objective is to strengthen the node concerning data availability, quality, and to turn it into the reference tool in terms of research and publication for all national biodiversity data stakeholders.

The project designed and launched thanks to the international relations created during the project's implementation (see above section "*Project's effectiveness*") may also be cited as a proof of project's sustainability as it will produce additional results in the future, which probably would not have been reached without the preliminary relations established under the BID funded project.

As announced by the interviewee, project's sustainability also requires to access additional funding which may be used to perform further activities based on project's outcomes and long-term impacts. During the project's implementation, the node's monitoring and evaluation committee met the project's coordinator once a month to assess the progress made under the project regarding data mobilisation and publication activities, and to evaluate the commitment of data users and holders which attended the project's capacity enhancement workshop (replication workshop organised by the project). During this meetings, several proposal were designed and submitted by the lead organisation or Togo GBIF node. For instance, two proposals were submitted by the lead organisation under the second BID call for Sub-Saharan Africa, without success, and six other ones were sent by the node and the Ministry of Environment to SEP2D, which were not selected either. Another proposal was sent to TWAS (Italy), applying for a grant to organise scientific meetings on data paper writing and publishing. The application was successfully selected and the lead organisation was granted with $2.500 to cover tickets of trainers sent to workshops organised in the region and in Europe.

Although the project was officially closed at the end of May 2018, the interviewee confirmed that the lead organisation, together with other node's members and the Ministry of Environment, are still looking to raise material and financial resources to ensure regular updating of the databases available on GBIF Togo. For instance, they collaborate regularly searching for additional funding from other donors than BID (UNEP-WCMC, JRS, SEPD2) for projects of common interest.

BID'S ADDED VALUE AND ROOMS FOR IMPROVEMENT

According to the interviewee, participating to the BID Programme generated a reputational effect/funding leverage effect for project's stakeholders. Indeed, it seems that they were able to get additional funding from other sources of financing thanks to their previous participation to a BID funded project, as this participation allowed them to improve the quality of their applications. For instance, the node was granted by the Mohamed bin Zayed Species Conservation Fund (United Arab Emirates) (project ID:

182518156) and the lead organisation by the Capacity Enhancement Support Programme (CESP) (project ID: CESP2018-001, "*Mentoring of GBIF Togo*") provided by GBIF to go on with the capacity enhancement activities launched during the project's duration.

The evidences collected through this case study enable the formulation of recommendations for improving potential BID future phases. For instance, it could be useful to provide teaching materials for BID workshops' certification in all the countries' official languages where the Programme will be implemented. Also, the interviewee suggested to implement regular follow-up meetings between the different project's partners and the GBIF supporting team. These meetings seem to help very much the partners regarding project management and administrative reporting. It could also be very rewarding if these follow-up meetings were maintained even after the official administrative and financial closure of projects. Indeed, most of the time, project's partners keep contact after the official project's closure and still produce valuable outcomes based on the activities launched under the BID project or implement new activities arising from the project's outcomes. These outcomes and activities may produce additional benefits in the future. Thus, keeping the follow-up meetings could allow GBIF to follow the outcomes achieved by funded projects beyond the grant period, and then to better evaluate the impacts of BID in a more comprehensive way.

Finally, as announced above in section "*Project design and implementation*", the activities carried out to strengthen GBIF Togo node network also revealed to partners the weaknesses of the node and the actions still required to improve it in the future. One of the objectives of future phases of BID Programme regarding GBIF Togo node should be to focus on reducing data shortcomings and inconstancies that sometimes still exist in the datasets made available by the node. Improving collaborations concerning scientific and datasets publications between node's members could also be really useful in the future in order to continue the efforts for strengthening the node and providing high quality standards data. For instance, a potential BID funded project under a future phase of the Programme could focus on following the implementation of the "*agreement for a perennial, efficient and fruitful collaboration between the node and different stakeholders*" which was one of the project's initial objective.

ANNEXES

List of references:
Strengthening the biodiversity stakeholders network in Togo (gbif.org)
IPBES Home page | IPBES secretariat
Home - WABES Supporting the West African Contribution to IPBES
List of interviewees:
Project coordinator. GBIF Togo node manager and professor at the University of Lomé (Togo) (Horticulture & Urban Ecology, Biodiversity Informatics & Database management). The interview took place virtually on Teams, on July 19th 2022, from 12:00 AM to 1:00 PM (CET) – 10:00 AM to 11:00 AM (UTC).

Case study II

Project's title	African Insect Atlas: unleashing the potential of insects in conservation and sustainability research in Africa
Project ID	BID-AF2015-0134-REG
Related BID call	Sub-Saharan Africa 2015
Region (Country)	Eastern Sub-Saharan Africa, Africa Islands, Madagascar
Project Leader	Madagascar Biodiversity Center, Parc Botanique et Zoologique de Tsimbazaza
Partners	1. National Museum of Kenya (**Data holder and researcher**) 2. Natural History Museum of Zimbabwe (**Data holder and researcher**) 3. Botswana National Museum (Natural History Division) (**Data holder and researcher**) 4. Natural History Museum of the Eduardo Mondlane University (Mozambique) (**Data holder and researcher**) 5. Albany Museum (South Africa, non-ACP consortium partner) (**Researcher**)
Total funding	Total Funding Requested: € 120,000; Co-funding Offered: € 103,234
Type of grant	Regional grant
Start/End date or expected end date	Start date: 01/06/2016; End date: 01/06/2018
Deliverables (expected)	A network of trained African Museum staff in digitalisation specimen and best practices in Entomology and georeferencing techniques, Digitalise and georeferenced databases (representing more than 150,000 specimen records) on dragonflies, caddis files, mayflies and ants collections from East and South African regions, Develop checklists, distribution maps and species red lists, Develop a network of insect-focused leaders who will connect the mobilised data with policy decisions in conservation and sustainability actions.
Rationale for selection	This project was included as a case study primarily because it is an example of a merged project. Project BID-AF2015-0134-REG & BID-AF2015-0135-REG were merged together into BID-AF2015-0134-REG during the BID selection phase. Through this case study, we were interesting in knowing more about the merger procedure, particularly assessing how coordination between all the different stakeholders was achieved. This project was also chosen to ensure geographic representation, with the location of the project being in Madagascar, an East sub-Saharan African country and an African Island.

INTRODUCTION

Madagascar is one of the most diverse biologically country in the world and despite an immense biodiversity already recorded, new species are still discovered every year. Madagascar's insects biodiversity is also extraordinary diverse, although it does not include any endemic species. Insects are the glue of any ecosystem and are, with their population, distribution and diversification, a unique indicator of the health of an ecosystem. In compliance with BID intervention logic, this project sought to unleash the potential of insects in conservation and sustainability research in Eastern Sub-Saharan region

by establishing a new generation of connected researchers with open access to targeted digital insect collections. The objective was thus to create a digital museum for targeted insects group of this region. Also, by collating, digitising and georeferencing specimens from natural history collections held by museums in African countries, insects, more sensitive barometers of ecological conditions than the vertebrates used today, could be used as a tool for African conservation science and policymaking. Indeed, by making freely accessible the targeted digital insect collections to researchers, the project aimed to facilitate the uptake of insect data by researchers and then by policy makers for evidence-based conservation actions. Moreover, by investing in training and the formation of a cross-institutional museums staff network, digitisation of natural history collections could continue after the BID funding phase. To achieve these objectives, the project implemented different activities. First, a data mobilisation phase allowed the partners to identify and gather the targeted insects natural history collections from the museums involved in the project, i.e. from all the partners (all the partners were thus data holding institutions). Targeted insects groups to focus on were identified under preliminary meetings between the partners. Each partner provided different prioritised insect groups based on its collections' holdings. For instance, the Albany Museum from South Africa was focused on odonatan and the National Museum of Kenya on mayflies. Then, digitalisation activities started with the collections mobilised. While digitalising, related activities such as data cleaning and datasets alignment to Darwin Core Standards were also carried out. In parallel, training activities on digitalisation tools and techniques were implemented for museum's staff (partner's staff). This allowed to improve the effectiveness of the project's digitalisation activities as well as to ensure that digitalisation efforts will continue after the official closure of the project and that the collections digitalised will be updated regularly by museum's staff in the future. The collections mobilised and digitalised were then georeferenced through databases, used to generate species checklists and species red lists. Using georeferenced tools, the partners also generated species distribution maps. Once mobilisation, digitalisation and georeferenced activities completed, partners started publishing on GBIF portal (GBIF France).

All these activities were performed by a consortium of 6 partners, including the Madagascar Biodiversity Centre (lead organisation) located in 6 different countries from the Eastern Sub-Saharan region. However, the following stakeholders were also involved in the project:

- o the Madagascar's Ministry of Environment, Water and Climate Change, as data user;
- o Matobo National Parks (Zimbabwe), as data user;
- o the Kenya Water Towers agency, as data user;
- o Kenya Wildlife Service, as data user and co-researcher for data mobilisation and collection activities;
- o the University of Botswana (Department of Biological Sciences), as data user;
- o the California Academy of Sciences (USA), as provider of technical and procedural support for best practices in specimen databasing and data management;
- o the National University of Science and Technology of Zimbabwe, as data user and co-researcher.

PROJECT DESIGN AND IMPLEMENTATION

Mister Andrianjaka Ravelomanana, from the Madagascar Biodiversity Center, was the first initiator of the project while Madam Balsama Rajemison, from the same institution, was project coordinator. He came to know about the BID Programme, and about the specific call launched for Sub-Saharan region in 2015, because he was BID workshops' mentor under a previous GBIF programme (Capacity Enhancement Support Programme, CESP) from which the Madagascar Biodiversity Center received funding for a project seeking to strengthen the collaboration between Madagascar GBIF node (MadBIF) and GBIF France[54]. Therefore, he was aware, as well as his institution, that GBIF regularly launched calls for projects for grant and they stayed current about these opportunities. According to him, being former workshops' mentor under a previous GBIF programme helped to be selected for funding as he was already aware of the

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[54] *Mentoring Madagascar (MadBIF) – GBIF France*, implemented from Mat 1st 2015 to June 1st 2016 (https://www.gbif.org/pt/project/82213/mentoring-madagascar-madbif-gbif-france).

workshops' functioning which gave confidence to GBIF in the application. He also decided to be workshops' mentor under the BID project.

CSIL was particularly interested in choosing this project as case study among the whole projects portfolio as it is an example of a merged project. As explained by the interviewees, the decision to merge with another BID project (BID-AF2015-0135-REG) was directly initiated by GBIF during the first selection phase (i.e. based on the evaluation of the concept notes submitted). GBIF contacted the two leading organisations and advised them to collaborate under an only project because both projects were judged as quite similar by the GBIF Selection Committee. Therefore, merging the two projects was suggested in order to increase the whole capacities under an unique project and thus reach higher objectives. Once the two projects merged into one, the design of the project was adjusted and the partners started drafting a new proposal (a new and unique concept note) without using any external consultancy services to design the project or draft the proposal, neither for the concept note nor for the full proposal submission. Indeed, the interviewees confirmed that the vast majority of the partners, including the Madagascar Biodiversity Center (see above), already took part in similar or GBIF funded projects under previous programmes. As a result, they already had an experience regarding project's design and drafting and they used their own skills and knowledge to submit a relevant and suitable proposal to the BID Programme.

PROJECT'S EFFECTIVENESS

According to projects' documents, the partners have, for the most part, successfully completed all planned deliverables, adhering to GBIF's minimum requirements on data publishing and data quality standards. 36 new datasets were published on GBIF covering insects biodiversity from 6 different African countries (Madagascar, Kenya, Botswana, Zimbabwe, South Africa, Mozambique).

It also seems that the project has opened doors in Africa regarding insects research. Indeed, insects are still poorly known and understood in Madagascar and in Africa in general. However, with the collection of new insects data, their digitalisation and the digitalisation of former records, as well as their publication, the project seems to have popularised the issue and spread the knowledge on African insects. Unfortunately, the interviewees were not able to illustrate to what extent their project enhanced or is expected to enhance the use of biodiversity data as evidence for decision making at national level. Indeed, insects are part of the taxonomy not yet recognised in conservation programmes in Madagascar compare to, for instance, lemur or vascular plants, although many publications highlighted their importance for conservation actions. Despite this, the interviewees stated that the Madagascar National Parks are using the project's datasets to carry out their own studies and that a new collaboration was also initiated between the lead organisation and the International Union for Conservation of Nature (IUCN) for updating the red lists of African insects.

Another interesting point of project's achievement is the organisation of a replication workshop by the lead organisation, i.e. a workshop using GBIF materials. The Madagascar Biodiversity Center organised a capacity enhancement workshop on data cleaning and data publishing, on site, in September 2016, with the objective of enhancing participants capacities in building biodiversity datasets. A training workshop on digitisation best practices was also attended in May 2018 in Botswana, with the objective of enhancing the capacities of participants in data digitisation, data cleaning, georeferencing and data publishing techniques, and to promote best tools for data cleaning and georeferencing in biodiversity research activities.

PROJECT'S SUSTAINABILITY

The interviewees were quite confident in the project's sustainability capacity. For instance, they highlighted that, at the time of the interview, the data made available under the project had been cited 28 times in scientific publications. The trend of project's data records made available on GBIF is also increasing from 2020 to date, and the project's partners are expected it will continue to increase in the following years given the work related to project's datasets still performed by some members of the Center.

Recently, a project based on the outcomes of the BID funded was also launched by the Madagascar Biodiversity Center on African edible insects. It is granted by the Partnerships for Enhanced Engagement in Research (PEER) Programme from USAID (USA). Basically, this new project is reusing the datasets made available under the BID project but under other objectives. Moreover, the interviewees confirmed that another project based on the distribution maps produced by the BID project is ongoing for identifying Madagascar's regions where the greatest efforts in terms of insects conservation actions should be implemented in the coming years[55].

In order to ensure the project's sustainability towards future generations of researchers, project's outcomes were introduced into teaching materials at the University of Madagascar. Indeed, as said above, Andrianjaka Ravelomanana was the first initiator of the project but he is also PhD student at the University of Madagascar. Under this last position, he provides courses for Master's students in data mobilisation, georeferencing and publishing methods, and introduced within his courses, as an illustration, the activities performed under the BID project. A new partnership was established between the Madagascar Biodiversity Center and the University to ensure the viability and the long term implementation of such teaching materials. He also works closely with the University to encourage students to use the GBIF Madagascar (MadBIF) data portal for insects data mobilisation and identification tasks, especially for their Master thesis or PhD research activities.

BID'S ADDED VALUE AND ROOMS FOR IMPROVEMENT

According to interviewees, the main advantage to be granted under the BID Programme is the open access to the data mobilised and made available. Indeed, they emphasised on the open access to data that GBIF promotes, i.e. they think that the Programme is highly beneficial because it spreads into biodiversity data stakeholders networks a spirit of sharing and of partnerships as regards to biodiversity data. This issues if of course not quantifiable but can produce long term and important positive impacts in the regions of BID implementation.

The lead organisation also accessed additional funding from other sources than BID thanks to its participation to the Programme (reputational/funding leverage effects produced by BID on project's stakeholders). For instance, the Center was granted by the Partnerships for Enhanced Engagement in Research (PEER) from USAID (USA), for a project on African edible insects (see above section "*Project's sustainability*").

Despite the results achieved by the project, it seems that BID projects in general need more time to reach their objectives. The interviewees declared that a vast majority of projects funded under BID are facing difficulties as regards to the grant period's time constraint, which generates difficulties in activities' achievements. For instance, the project only mobilised and published 12,000 occurrences on GBIF while 120,000 were initially targeted in the full proposal. The time constraint forced the consortium to make choices and to prioritise the data they wanted to mobilise and publish. Data on butterflies were for example left out under the project due to lack of time, as well as some activities initially planned related to georeferencing. One improvement for potential future phases of the BID Programme should thus to extent the length of the funded projects, as well as the allocated budget which seems a bit insufficient to interviewees. Regarding lack of financial resources, they notably explained that they did not have enough financial resources to hire staff, especially for data recording activities.

ANNEXES

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[55] LIFEPLAN project : A planetary inventory for Life (Lifeplan | University of Helsinki).

List of references:
African Insect Atlas (gbif.org)

List of interviewees:

- Project coordinator. Chief Executive Officer at the Madagascar Biodiversity Center, Parc Botanique et Zoologique de Tsimbazaza. The interview took place virtually on Teams, on August 10th 2022, from 10:00 AM to 11:00 AM (CET) – 11:00 AM to 12:00 AM (EAT).

- PhD student at the Madagascar Biodiversity Center, Parc Botanique et Zoologique de Tsimbazaza, and Programme Lead for the African Insect Atlas project. The interview took place virtually on Teams, on August 10th 2022, from 10:00 AM to 11:00 AM (CET) – 11:00 AM to 12:00 AM (EAT).

Case study III

Projects title (5 projects)	1. Providing access to the zoology collection of the Natural History Museum of Zimbabwe 2. Freshwater biodiversity of the Eastern Highlands of Zimbabwe: Assessing conservation priorities using primary species occurrence data 3. Digitizing the Matobo Hills Arachnid collections at the Natural History Museum of Zimbabwe 4. Mobilizing specimen data on bats and rodents from Zimbabwe 5. Biodiversity data in support of climate action, life on earth and sustainable food and feed: Reptiles and arachnids found in Protected Areas and edible insects
Project ID	1. BID-AF2015-0117-SMA 2. BID-AF2017-0023-SMA 3. BID-AF2017-0050-SMA 4. BID-AF2017-0052-SMA 5. BID-AF2020-026-INS
Related BID call	1. Sub-Saharan Africa 2015 2. Sub-Saharan Africa 2017 3. Sub-Saharan Africa 2017 4. Sub-Saharan Africa 2017 5. Sub-Saharan Africa 2020
Region (Country)	Sub-Saharan Africa, Zimbabwe
Project Leader	Natural History Museum of Zimbabwe
Partners	1. National University of Science and Technology & Matobo National Park (**Data Users**) 2. Zimbabwe Parks and Wildlife Management Authority, Bird Life International – Africa, University of Zimbabwe, and Dambari Wildlife Trust (**Data Users**) 3. National University of Science and Technology, Zimbabwe Parks and Wildlife Management Authority and Dambari Wildlife Trust (**Data Users**) 4. National University of Science and Technology, Zimbabwe Parks and Wildlife Management Authority and Dambari Wildlife Trust (**Data Users**) 5. African Lion Environmental Research Trust (**Collecting Biological Specimen at the National Parks, co-researchers**), National University of Science and Technology (**Collecting Voucher Specimen, co-researchers**), Dambari Wildlife Trust (**Providing Specimen Data**), Marondera University of Agriculture Science and Technology (**Co-researchers , trainers and data users**)
Total funding	1. Total Funding Requested: € 4,641, co-funding offered: € 17,409 2. Total Funding Requested: € 19,971, co-funding offered: € 63,600 3. Total Funding Requested: € 4,813, co-funding offered: € 57,851 4. Total Funding Requested: € 9,555, co-funding offered: € 20,055 5. Total Funding Requested: € 20,000, co-funding offered: € 19,800
Type of grant	All projects are Institutional (Small) Grants
Start/End date or expected end date	1. 1/6/2016 – 30/6/2017 2. 1/10/2017 – 31/12/2018

	3. 1/10/2017 – 31/12/2018
	4. 1/10/2017 – 31/12/2018
	5. 1/4/2021 – 31/3/2023 (*ongoing*)
Deliverables	1. 11,000 mammalogy specimen records digitized and geo-referenced. 10 museum staff and 3 staff from Matopo National Park trained on biodiversity mobilization, historical species distribution maps were developed but not yet published, and checklists of 23 mammalian families were created and shared with park managers and policymakers
	2. 3,566 records were captured and geo-referenced, a data use workshop was conducted on packaging mobilised datasets into information products, 8 data clerks from 4 museum departments were trained, at 1 checklist of approximately 500 records, 1 conservation checklist, and 4 distribution maps of freshwater biodiversity in eastern Zimbabwe were developed.
	3. 4,271 arachnid's specimen records have been digitized and geo-referenced, museum staff and Zimbabwe Parks and Wildlife Authority staff trained through four different workshops and training sessions (data quality and data cleaning workshop, data use workshop, team building meeting and stakeholder meeting) and production of scorpion dataset of 8 species, sun spider dataset of 11 species and dataset of 267 Araneae from 42 families have been published. Finally, the production of a checklist of 286 species from 4271 specimens were completed and updated.
	4. 6,000 mammalogy specimen records digitized and geo-referenced, 25 Museum staff and 2 National Parks staff trained, Biodiversity digitization workshop conducted, biodiversity data-use for decision making conducted, workshop on data quality and standards was conducted and two feedback sessions were organized by project coordinators. One checklist dataset has been published including 96 species (46 genus' and 16 families) and occurrence data on 6188 specimens in the wet collection were updated and digitised
	5. **Ongoing:** Museum personnel, project members and stakeholders participated in the training session on data cleaning, data sharing, data quality and data publishing, Principles of Citizens science was presented to the photographic society of Bulawayo, all necessary software was installed and standardized, 3000 records of reptiles, 4300 arachnids and 1900 edible insects have been digitized into excel.
Rationale for selection	This case study consists of five different projects. These projects are within different calls and phases of the BID programme, but they are run by the same lead beneficiary, the Natural Museum of Zimbabwe, and all five projects are institutional (small) projects that are implemented in the country of Zimbabwe. These projects were bundled together and chosen for this case study to assess how the BID Programme, specifically institutional grants, evolved through two phases and seven calls of BID. This case study helps the CSIL team to evaluate the beneficiary perspective about the changes occurred within phases (e.g., changes in reporting, changes in the application process, changes in GBIF support and overall BID operations) and whether the lead beneficiary perceives them as positive or negative. The case study was also chosen for its geographic coverage, with Zimbabwe being located in Southern Africa. The projects are involved in a diverse

| | variety of interlinked activities that also allowed to assess the BID Programme as a whole. Zimbabwe is also an associate country participant of GBIF, which is another point of variability that led us to choose this set of projects for a case study. |

INTRODUCTION

This bundle of projects, led by the Natural History Museum of Zimbabwe, achieves the objectives of the BID Programme by both mobilizing **existing** biodiversity data that is currently neglected and inaccessible, and by mobilizing **new** biodiversity data that fills knowledge gaps essential for conservation purposes. The five projects included in this case study involve a diverse array of topics differing in taxonomic focus. Two of the projects (BID-AF2015-0117-SMA & BID-AF2017-0052-SMA) seek to collate and digitize existing mammal specimen data in the zoology collection of the museum, with the latter focusing specifically on rodent and bat specimen records. BID-AF2017-0023-SMA seeks to mobilize data on freshwater biodiversity in the Eastern Highlands of Zimbabwe, identifying important sites for freshwater conservation and focusing on fish, invertebrates, amphibians, and bird species in the region. The last two projects (BID-AF2017-0050-SMA & BID-AF2020-026-INS) involve arachnids. The first project aims to organize and make the existing arachnid collection at the museum more accessible, while the latter aims to publish additional arachnids' records and create datasets that will help researchers and policymakers understand arachnids further and document their areas of habitation. To achieve the objectives initially set out in the project proposals, all five projects engaged in a combination of digitisation activities, capacity enhancement training for museum staff and park rangers, georeferencing of records, the creation of checklists and distribution maps, and a variety of knowledge dissemination activities. Four out of the five projects are closed, completing, for the most part, all the activities they sought out to achieve in their proposals. The last project (BID-AF2020-026-INS) is still ongoing; their recently submitted midterm report indicating progress in half of the activities they sought out to achieve. The National University of Science and Technology was cited as a data user by one of the five projects (excluding BID-AF2017-0023-SMA). Dambari Wildlife Trust, Matobo National Park, Bird Life International – Africa, Marondera University of Agriculture Science and Technology and Zimbabwe Parks and Wildlife Management Authority were also identified as data users for the various projects. BID-AF2020-026-INS is currently in partnership with the African Lion Environmental Research Trust and Dambari Wildlife Trust to help collect biological specimen data at both the Nchizarira and Zambezi National Parks. This data will be later added to the arachnid's collection at the museum.

PROJECT DESIGN AND IMPLEMENTATION

The Natural History Museum of Zimbabwe (NHMZ), established in 1964, contains exhibits illustrating the history, mineral wealth, and wildlife of Zimbabwe. The museum has nine public display galleries and eight research departments with substantial study collections and ongoing research within various disciplines.[56].

The NHMZ has been a participant of the BID Programme since Africa's first BID call in 2015. Museum researchers and scientists were aware that the museum had an outstanding number of undigitized collections and inaccessible records that needed to be mobilized. When they learned about GBIF and the launch of the BID Programme at the Taxonomic Databases Working Group (TDWG) Conference, they decided to apply for BID grants to attempt to collate and digitize some of the existing mammal specimen records at the museum. With the BID Programme expanding and launching more calls for proposals in the region, the museum continued applying for BID grants and used the funds to further advance biodiversity mobilization activities within the museum's different departments. In the 2017 call, the museum received funding for three projects. In the 2020 call, the museum initially submitted concept notes for three different projects, but GBIF recommended they combine the three projects into one. While the merging process was described as straightforward, the merger did result in a reduction in the number of activities the projects were set to carry out.

The BID application (selection) process was perceived by project leads as fair and unbiased. They came to appreciate the two-step process of applying for BID funding as it gave them the opportunity to refine some of the project activities and rethink some of their proposed methodologies. Some of the project's leader expressed their dissatisfaction with the application process for the second phase of the BID Programme, citing it as un-necessarily complex when compared to the first phase. Project managers felt there was a higher demand for BID Programme funding in the region, which made the process more competitive. Interviewees also point out that many of the questions in the full proposal template were unclear, too general, and difficult to answer and that further guidance from GBIF would have eased the process.

There haven't been any communications between NHMZ and the Zimbabwe's GBIF node, even after the museum was awarded the grant in the second phase. Even though the GBIF node regularly holds talks with government ministries about establishing biodiversity centres and advancing conservation efforts, the museum is unable to benefit from this relationship due to the lack of communication from the GBIF Zimbabwe node. The museum attempted to improve communications by having a representative join the node, but those attempts were unsuccessful. There were also expectations from project leaders and partners that the national node would assist with the 'data use' component of their projects, but their expectations were left unmet. Overall, interviewees felt that the node was not active enough with its engagement with stakeholders and that they need to be more active and work more effectively to further advance their biodiversity goals.

PROJECT'S EFFECTIVENESS

According to projects' documents, all five projects have, for the most part, successfully completed all planned deliverables, adhering to GBIF's minimum requirements on data publishing and data quality standards. The one common shortcoming between the five projects was the inability to provide evidence of data-use or provide an explanation for intended use of the data. Interviews confirmed that the museum has not made great headway in terms of integrating mobilized data into decision making bodies. The museum secured an 'intention of use' from the National University of Science and Technology (NUST), and the National Parks and Wildlife Authority for data produced in 2017 during the BID-AF017-0052-SMA project, and they are currently trying to include more policymakers and scientists in project workshops and training sessions, but data uptake from decision making bodies and policymakers still lags behind. This shortcoming is due to communication issues between policymakers, the national node and project leaders and partners. According to project beneficiaries, distance is another factor; with the Natural History Museum of Zimbabwe being located in Bulawayo and not in Zimbabwe's capital, Harare, they are often not included in decision-making processes.

Establishing data sharing agreements is something else the museum has struggled with. Data sharing and pooling information together is a practice many institutions in Zimbabwe choose not to engage in for the fear of data piracy. In 2017, the museum attempted to create data sharing agreements with the Zimbabwe Parks and Wildlife Management Authority and the National University of Science and Technology, but the agreement was never finalized. Further assistance from GBIF in facilitating data-sharing agreements between different partners and institutions would greatly advance the integration of biodiversity data in the region. BID-AF2020-026-INS has included a citizen scientist component to the project to encourage participation in data sharing; so far, according to project leaders, this component has already improved the input on platforms such as iNaturalst, which is a social network of citizen scientists and biologists built on the concept of mapping and sharing observations of biodiversity across the globe

The Natural History Museum through the BID Programme have created solid networks with universities (Chinhoyi University of Technology), organisations (EMA, Birdlife, Forestry Commission) and the Ministry of Environment. According to interviewee "through these networks more stakeholder meetings on data use, biodiversity data integration, and communication can be arranged which will further enhance integration of historical data on biodiversity, in research and policy making". The museum also joined the Entomological Association of Zimbabwe, which has more than 23 member institutions across the country and provides training for data mobilization and aims to raise awareness of edible insects' resources in the region.

This bundle of projects clearly contributes to INTPA Strategic Plans, by both digitizing and publishing Natural History Collections in four out of the five projects and by taking part in the conservation, restoration and sustainable management of natural resources and ecosystems. Starting with BID-AF2015-0117-SMA, through the digitization and geo-referencing of over 11,000 mammalogy specimen, this project created an inventory on mammals currently found in Zimbabwe's national parks, this data was to be compared with historic data to draw conclusive answers on the changes in population dynamics of the mammals. This will help policymakers come up with better conservation methods to protect Zimbabwean mammals and their habitats. For BID-AF2017-00230-SMA, scientific manuscripts were prepared and sent to national parks within the eastern highlands of Zimbabwe on the distribution of threatened freshwater species to help identify priority areas for conservation. The project also provided researchers from the University of Zimbabwe with occurrence data for pests, such as the fall army worms and the termites, in order to produce risk assessment models that can assist in controlling the pests in the future. Data from this project was cited in the CBD's natural biodiversity report in 2018. BID-AF2017-0052-SMA, which updated and digitized 78 bat species, 14 rodents, 3 shrew species and one Hare species. It has made available distribution and composition data to all critical stakeholders and partners to help them set conservation priorities. Outcomes and results from this project were presented in the UNEP/UNESCO/BMU COURSE "Ecosystem Management Biodiversity Conservation and Ecosystems Services". This level of exposure and visibility on the global stage is expected to pave the way to develop new sustainable partnerships with international financial/political institutions, the UN and other multilateral partners that could advance the cause of biodiversity preservation in Zimbabwe for years to come.

PROJECT'S SUSTAINABILITY

Interviewees confirmed that funds from GBIF helped improve the overall museum data infrastructure with the purchase of new servers and computers that will mobilize biodiversity data beyond the grant period. They also cite training sessions and workshops as points of sustainability, since trainees can use the skills they learned during the workshops in future biodiversity-related projects. Through BID projects, the museum installed the GBIF IPT which is capable of mobilizing and hosting data beyond the project duration. Furthermore, because of participation in the BID Programme, the museum now has a full-time dedicated IT technical staff member who supports all biodiversity data mobilization efforts. Lastly, BID-AF2017-0052-SMA has helped to create a bat atlas with detailed maps for each species to be able to track species distribution and diversity within all areas of Matopos National Park. Because of the MoU signed between GBIF and the museum, all datasets produced as a result of the BID Programme are to be constantly updated when new species are recorded, taxonomic groups are revised or when new specimen are identified[57]. This frequent updating of the database ensures its sustainability and relevance in the long run. The Natural History Museum of Zimbabwe has a mandate to provide for the preservation of Zimbabwe's natural heritage, and using the skills and resources acquired during the implementation of the BID projects, the museum plans to continually replicate activities that ensures the long-term sustainability of project outcomes.

BID'S ADDED VALUE AND ROOMS FOR IMPROVEMENT

The museum would not have been able to digitize and mobilize its data without the resources, incentives and training provided through the BID Programme. Participating in the programme has also opened up doors for other sources of funding for the museum. The freshwater biodiversity project (BID-AF2017-0023-SMA) for example, was able to secure further funding from the Critical Ecosystem Partnership (CEP) because of its partnership with BID. Qualifying for BID Programme funding helped give legitimacy and credibility to the museum as an institution capable of carrying out complex activities relating to biodiversity mobilisation and conservation efforts. For future phases of the BID Programme, project beneficiaries wish to see an application process that is less complicated. They wish to see further GBIF support with financial reporting, with facilitating data sharing agreements and hosting educational seminars to educate project partners on the benefits of data sharing. GBIF should ensure that BID participants are aware of all the non-financial

support services that the organization provides and make sure that the support and resources (e.g. GBIF Helpdesk) are being properly utilized. Lastly, improving communication between BID project leaders and GBIF national nodes is crucial for increasing data-use and ensuring that biodiversity data is at the heart of decision-making in Zimbabwe and across the region.

"Currently in Zimbabwe, the country has been experiencing a turbulent time that has left conservation policy makers rendered voiceless. This will not continue forever, and the newly mobilized BID data will have its place when the time is right". (interviewee)

ANNEXES

List of references:

https://www.mindat.org/museum-339.html

GBIF Website

List of interviewees:

Interview with four BID Project leaders

1. Post-doctoral fellow South African Environmental Observation Network
2. Lecturer at the University of Zimbabwe
3. Regional director of the Natural History Museum of Zimbabwe
4. Herpetologist at the Natural History Museum of Zimbabwe

The interview took place virtually on Teams on July 19th, 2022, from 9:00 AM to 10:00 AM (CET)

Case study IV

Project's title	1. Regional and national alien and invasive species data mobilization and capacity building in the Pacific 2. Building capacity at SPREP for data mobilization and use 3. Using invasive species and biodiversity data for decision-making in the Pacific region
Project ID	1. BID-PA2020-002-INS 2. BID-PA2016-0005-REG 3. BID-PA2020-003-USE
Related BID call	1. Pacific 2016 2. Pacific 2020 3. Pacific 2020
Region (Country)	Pacific Island Countries and Territories (PICTs)
Project Leader	Secretariat of the Pacific Regional Environmental Programme (SPREP)
Partners	1. The Oceania Regional Office of the International Union for Conservation of Nature IUCN (**Researcher**), Pacific Community, Conservation International – New Caledonia (**Researcher**), Biosecurity Vanuatu (**Researcher**), Ecological Solutions (**Researcher**), Ministry of Environment (**Researcher, data user**), Climate Change, Disaster Management & Meteorology (**Researcher**), Nature Fiji (**Researcher**), National Agriculture Quarantine and Inspection Service (**Researcher**), Palau Conservation Society (**Researcher**), Yap (**Researcher**), Kosrae Department of Resources and Economic Affairs (**Researcher**), MEIDECC (**Researcher**), Division of Environment and Conservation (DEC) – Ministry of Natural Resources and Environment (MNRE) (**Researcher**), Government of Pitcairn Islands (**Researcher**), Natural Resources Division (**Researcher**), National Environment Service (**Researcher**), Department of Environment (**Researcher**), Territorial Environment Service (**Researcher**), Service de l'Environnement and Biodiversity Data Management Ltd/ IUCN SSC Invasive Species Specialist Group (ISSG) (**Data holder, data user**) 2. VertNet (**Trainer/Mentor, researcher**) 3. Ministry of Natural Resources and Commerce (**Data user**), Dept of Environment Tonga (**Data user**), Dept of Environment Tuvalu (**Data user**), Dept of Environment Vanuatu (**Data user**), Vanuatu Environmental Science Society (**Data user**), Division of Environment - Ministry of Natural Resources and Environment – Samoa (**Data user**), Nature Fiji (**Researcher**), Ministry of Environment (**Data user**), Climate Change, Disaster Management and Meteorology - Solomon Islands (**Data user, researcher**), Ecological Solutions Solomon Islands (**Researcher**), Vava'u Environmental Protection Association (**Data user**), Yap (**Researcher**), Service Territorial de l'Environnement de Wallis et Futuna, Conservatoire d'espaces naturels de Nouvelle- Calédonie (**Researcher**), Birdlife International (**Data user**), Island Conservation Palau (**Researcher**), IUCN (**Data user, data holder**), Secretariat of the Pacific Regional Environment Programme (**Data user, researcher**), The Pacific Community (**Data user, researcher**)
Total funding	1. Total Funding Requested: € 175,000, co-funding offered: € 103,952 2. Total Funding Requested: € 20,000, co-funding offered: € 12,823

	3. Total Funding Requested: € 60,000, co-funding offered: € 106,621
Type of grant	1. Regional grant 2. Institutional grant 3. Data-use grant
Start/End date or expected end date	1. 1/5/2017 – 30/9/2018 2. 1/7/2021 – 30/6/2023 *(ongoing)* 3. 1/7/2021 – 30/6/2023 *(ongoing)*
Deliverables	1. National Invasive Species Data Mobilization Meetings were held in 12 countries and territories across the Pacific. "Regional Alien and Invasive Species Data and Information Mobilisation and Capacity Building in the Pacific" workshop was held and attended by 27 participants from ten Pacific Island countries and territories, SPREP and the GBIF Secretariat agreed on the addition of a project deliverable to develop a resource to assist Pacific data holders in publishing Pacific invasive species data to GBIF, The "GBIF Data Use for Decision Making Workshop" was held and facilitated by SPREP, 22 new Publishing Agencies, and the project is responsible for 52 datasets containing 20585 new records, the development of a Green Climate Fund proposal, using data from this project to initiate the Global Environment Fund 2. **Ongoing:** Project Management team was developed, Integration of data sharing into SPREP policy and processes, meetings with the SPREP legal team commenced to review and update contract templates, the development of a series of clauses to update the templates to ensure all biodiversity data gathered under SPREP contracts is delivered to SPREP for mobilization, meeting with the chair of the SPREP Environmental Monitoring and Reporting Coordination and the publication of one dataset. 3. **Ongoing**: The invasive species data for 4 Pacific Island countries was reviewed, analysed, and broken down to produce individual lists for islands, archipelagos, and protected areas, five datasets published on GBIF, Wayne Asera, SPREP's IT Specialist acquired the Advanced Badge Certification, data for the Republic of the Marshall Islands and Tuvalu is now published. The exercise will inform stakeholders where to focus their energy to extract the maximum utility for their efforts. In time, these prioritizations will be used to support applications for funding to enable operational delivery.
Rationale for selection	This case study consists of three different projects, that are different in grant type and call, but they have the same project leader, SPREP. The latter is quite experienced with project application and implementation processes for the projects he was leading, as well as very knowledgeable about the Pacific region as a whole and BID's involvement in it. Lastly, unlike the projects led by the Natural Museum of Zimbabwe which are all institutional projects, this bundle of projects includes three different grant types. Through this case study, we were interested in understanding the linkage amongst the projects, and some of the main challenges faced during the implementation period.

INTRODUCTION

SPREP attempts to achieve BID Programme objectives by carrying out activities through three funded projects: BID-PA2016-0005-REG, BID-PA2020-002-INS and BID-PA2020-003-USE. The activities that these

projects carry out are related to BID's Logical Framework Sub-Result 2.2 of targeting biodiversity data mobilized in the target region. Specifically, these set of projects mobilize data from observation networks and monitoring systems, for example on invasive alien species, Red List protected and endemic species. The first project (BID-PA2016-0005-REG), which is currently closed, was implemented during the first phase of the BID Programme and it aims at promoting the use of established data standards in recording good quality data and making this data available for decision making to all stakeholders. This project involves three general sets of activities. First, the formation of international collaborations through data sharing agreements, developing frameworks for flow of data and information, and facilitating agreements on data transfer between institutions. Second, ensuring biodiversity data availability through identifying key data holders in each country, providing templates to digitize all available data and publishing data that follows adequate data standards shared with key data repositories. Third, the utilization of available biodiversity data to be used for conservation purposes through involving policymakers and government officials in data use training sessions and capacity enhancement workshops.

The other two projects (BID-PA2020-002-INS and BID-PA2020-003-USE) are implemented during the second phase of the BID Programme and are still currently ongoing. BID-PA2020-002-INS aims to institutionalize data mobilization processes and promotes GBIF across the region. The project will do so by publishing at least three datasets, reviewing contract templates that include clauses for the provision of data mobilisation, hosting three workshops on data mobilisation and data use, upgrading the SPREP Induction Process and raising awareness across the region on the benefits of utilizing biodiversity information for decision-making. The last project, BID-PA2020-003-USE aims to develop regional strategies for two projects funded by the Pacific Regional Invasive Species Management Support Service (PRISMSS). The project will identify specific data requirements for each strategy and publish all unpublished data encountered along the way. This data will later be analysed and developed into informatics products, maps and statistics to assist with prioritisation and strategy production. To achieve such, this project will publish at least five datasets (32 datasets were published so far according to the midterm review), promote data use for decision making while visiting countries to support new Pacific voting and host a regional data mobilization workshop for participating Pacific countries.

The three projects included this case study are all connected. 'The management of invasive species' is the focal point that links the three projects together and is what initiated the partnership between SPREP and GBIF.

PROJECT DESIGN AND IMPLEMENTATION

SPREP is a regional organisation established in 1993 by the governments and administrations of the Pacific countries. Its mandate is promoting cooperation in the Pacific region and providing assistance in order to protect and improve its environment, ensuring sustainable development for present and future generations. GBIF has been in contact with SPREP since before the launch of the BID Programme. SPREP has been long interested in having GBIF become more established in the Pacific region. So when the BID Programme was launched, SPREP made sure to participate in the programme and later sign a MoU with GBIF. The interviewees confirmed that the application process was straightforward during the first phase of the programme. The process became more complicated with the introduction of the GBIF portal and the requirement to submit all documents through the portal instead of sending it directly to GBIF via email as they did in the past. Interviewees also explained that during the first phase of the BID Programme, SPREP was able to implement all the activities they sought to carry out through one and only one project, BID-PA2016-0005-REG. This project included three broad elements: Data mobilization, the institutionalisation of the data and data use. When the second phase of the BID Programme was launched in the Pacific, SPREP wanted to lead a second project, where they would follow up on the three elements of BID-PA2016-0005-REG. However, to be eligible for funding during the second phase, SPREP had to split the activities making up the three elements and incorporate them into three separate projects. This split meant that SPREP had to submit three separate concept notes, three full proposals, three financial reports and three sets of midterm reports and final reports. This requirement made the implementation of these activities more cumbersome and inefficient. For instance, submitting financial reporting separately for the three projects meant that financial resources could not be pooled between them, which further complicated the process

and made financial management less efficient. Apart from this difficulty, the support provided by GBIF to SPREP during the implementation phase of their projects - was really helpful to the three projects, especially the mentor support. The latter helped in facilitating regional workshops in all three projects and in developing regional strategies for both the Resilient Ecosystems Resilient Communities (RERC) programme and the Predator Free Pacific (PFP) programme for BID-PA2020-003-USE. Assistance with data hosting and establishing a functioning IPT in Samoa is another significant form of support provided by GBIF which was found to be very useful to SPREP.

PROJECT'S EFFECTIVENESS

When evaluating the effectiveness of this bundle of projects, attention was addressed to see how the projects incorporated the three main elements that make up the SPREP-GBIF partnership. First, we looked at **the mobilization of data**; all three projects engaged in data mobilization, data digitization and data publishing activities. BID-PA2016-0005-REG published 52 datasets containing 20,585 new records on invasive species around the Pacific. For BID-PA2020-002-INS, even though the project's main focus is on building capacity at SPREP, one dataset was published so far, and the project plans to mobilize and publish at least three more datasets on the GBIF portal by the end of the reporting period. As for BID-PA2020-003-USE, 32 new datasets have been published so far and more are in the process of being published specifically from the Marshall Islands and Tuvalu. Many more Pacific countries are expected to follow suit with publishing activities before the commencement of the regional meeting in November 2022. As more countries publish their data on alien and invasive species (A&IS), this bundle of projects clearly contributes to achieving Aichi's 9th biodiversity target, which encourages national government to identify A&IS and prioritize them for management control. These projects also contribute to INTPA's strategic goals of conservation and sustainable management of natural resources by using the data to prioritize how and where to direct the effort to manage invasive species in the Pacific.

The second element these projects incorporated is the **institutionalization of data mobilization processes and the promotion of GBIF** across the Pacific. During the implementation of BID-PA2016-0005-REG, SPREP carried out a capacity building workshop in Fiji, through which a data sharing framework was developed between different Pacific countries and organisations. Participants of the workshop also agreed to form the 'Data Sharing Working Group of the Pacific Invasives Partnership' to support consortium partners and perform a gap analysis of existing data sharing agreements. The Pacific Biodiversity Information Facility (PBIF) was also created in the framework of this project. PBIF was added on as an additional project deliverable during the implementation period to assist Pacific data holders in publishing invasive species data. PBIF portal has become an important resource for the Pacific community since it has helped institutionalize and monotonize data across the region. According to project documents, this project, through the shared use of the newly established IPT, has allowed the creation of networks and the development of links and associations between SPREP and other organisations within the region. As for BID-PA2020-002-INS, the project was able to institutionalize data processes through updating SPREP's data policy and reviewing and amending templates for presentations that are part of the SPREP induction process. This project also aims to promote the mobilization of biodiversity data through GBIF (or PBIF) instead of promoting the use of national data portals that are often inaccessible. BID-PA2020-003-USE also contributes to the institutionalization of data processes by promoting GBIF in the region and lobbying five Pacific countries into initiating the process of becoming voting participants of GBIF. One country, Tonga, is now officially a voting participant of GBIF, and as pointed out by interviewees more countries are soon to follow. These new partnerships should help build a collective infrastructure in the Pacific and a community of practice for delivering useful biodiversity information.

The final element to be assessed is **Data-Use**. Data mobilized in BID-PA2016-0005-REG will be used to review critical policy documents relating to the National Invasive Species Strategy and Action Plan (NISSAP) and the National Biodiversity Strategy and Action Plans (NBSAP). Furthermore, the Global Environmental Fund (GEF) has funded a project referred to as the INFORM project and is managed by the SPREP team. This project uses BID data from the PBIF portal to promote better standards of data management and security, and support the monitoring, evaluation, and the analysis of environmental information in over 13 Pacific

countries. Additionally, the project hosted two data-use workshops where published and unpublished data were analysed and aggregated to develop the Green Climate Fund proposal and prioritise key features for targeted pest eradication. These workshops were attended by government officials, policymakers, and members of the scientific community, and are expected to enhance capacity for the use of biodiversity data to support various decision-making processes. Finally for BID-PA2020-003-USE, data excerpts from this project are now incorporated into the Resilient Ecosystems Resilient Communities (RRERC) and Predator Free Pacific (PFP) strategies and is already being used in targeted pest eradication in the Kingdom of Tonga. As more countries use this data to develop their own national prioritization strategies, the ground management actions will become more aligned to national, regional, and global biodiversity objectives such as those identified by the CBD.

PROJECT'S SUSTAINABILITY

In terms of sustainability, SPREP, as a result of BID-PA2016-0005-REG, is now an associate member participant of GBIF with a functioning IPT that will create a legacy of secure and accessible data for all future biodiversity projects. The MoU that SPREP signed with GBIF ensures that the infrastructure created as a result of this project will be properly maintained to help with all future biodiversity mobilisation activities. The SPREP team has developed a cohesive working relationship with projects' stakeholders (from VertNet) who after participating in this project have decided to provide support with data publishing in the Pacific at no cost to the users into the future. Establishing the PBIF portal is another point of sustainability as the portal was created to sustain and consolidate the learning achieved through the project all while providing an opportunity to engage and support future Pacific data publishers. In BID-PA2020-002-INS, the updating and mainstreaming of data processes through updating contract templates is a change to the SPREP process that will be sustained beyond the life of the project and into the foreseeable future. This change will lead to more complex consideration of data collection tools that use cloud technology to aggregate data more effectively. Putting the data mobilized into use (e.g. Tonga Strategies) is proof of the sustainability of the project BID-PA2020-003-USE. External projects and programmes such as GEF, GCF, NISSAP, NBSAP and EDF11 OCT have all used BID data at some capacity over the past few years to implement biodiversity activities. This usage shows the longevity and relevance of BID-produced data, as it is being used to advance conservation and sustainable development efforts through multiple projects in the Pacific region, also beyond the grant period.

BID'S ADDED VALUE AND ROOMS FOR IMPROVEMENT

The evidence provided by this case study confirmed that it has proven to be quite useful for mobilizing biodiversity data in the Pacific region and putting the data into good use. Interviewees confirm that the activities carried out throughout the three projects would not have been prioritized if it wasn't for the BID Programme. While receiving funding from BID has not directly opened up doors for SPREP to receive funding from other sources, their association with GBIF gave them more exposure and legitimacy within the biodiversity community and allowed for some indirect leverage effects with organisations that could be potential sources of funding in the future. The GBIF node established within SPREP has helped the organisation with data hosting and setting up the IPT, which has been a tremendous help in advancing biodiversity information sharing and pursuing greater capabilities for GBIF within the Pacific. Interviewees also stressed that it would be extremely beneficial to have a full-time GBIF representative located in the Pacific to improve communications between SPREP and GBIF as well as assist with everyday operations pertaining to biodiversity capacity enhancement. For future phases of the BID Programme, GBIF should simplify the application process and make online reporting more user-friendly. With the pandemic getting under control, GBIF should continue sending mentors and trainers to the region for support instead of providing online support which is found to be less effective. More data holders should be included in the data use workshops and GBIF should ensure that its support and resources (e.g. GBIF help desk) are being properly utilized. When asked about the kind of projects the BID Programme should prioritize in the future, the SPREP team pointed out that projects seeking to institutionalize data mobilization processes should be the priority. According to SPREP, this component (element) of biodiversity capacity enhancement is what is

lacking the most and if institutionalizing data processes was happening more efficiently and more effectively, all other capacity enhancing activities would become easier.

ANNEXES

List of references:
SPREP website
BID-PA2020-002-INS Project Proposal

List of interviewees:

-SPREP's Invasive Species Advisor and BID Project Coordinator on the 14th of July, 2022 from 11:00 PM to 12:00 AM (CET).

-SPREP IT Specialist, on July 19th from 11:00 PM to 12:0 AM (CET) .

Case study V

Project's title	Collections-based data for conservation actions: engaging decision-making actors to save globally threatened epiphytes in Colombia
Project ID	BID-CA2020-047-USE
Related BID call	Caribbean 2020
Region (Country)	Caribbean Mainland (South America), Colombia
Project Leader	Fundación Jardín Botánico Joaquín Antonio Uribe de Medellín
Partners	1. Herbario Federico Meden (FMB) – Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (**Provider of specimen data, Expected data hosting institution, Data user**) 2. Universidad del Valle-Herbario (CUCV) (**Provider of specimen data, Data user**) 3. National Herbarium of Colombia (COL) (**Provider of specimen data, Data user**) 4. Herbario Universidad de Antioquia (HUA) (**Provider of specimen data, Data user**) 5. Universidad de San Buenaventura (**Co-researcher for the extinction risk analysis and the construction of biomodels, Data user**) 6. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (**Consultants for data users, Data mobilisation co-researcher, Leader of the extinction risk assessment, Producer of distribution models, Organiser of a workshop for environmental authorities, Data user**) 7. Sistema de Información sobre Biodiversidad de Colombia (**Publisher of biodiversity data on SiB Colombia** (Colombian GBIF node), **Data user**) 8. Herbario Nacional Colombiano (COL) (**Co-researcher for the extinction risk analysis and the construction of biomodels, Data user**) 9. Colecciones Biológicas de la Universidad CES (CBUCES) (**Co-researcher for the extinction risk análisis, Data user**)
Total funding	Total Funding Requested: € 58,682; Co-funding Offered: € 60,935
Type of grant	Data-use grant
Start/End date or expected end date	Start date: 01/09/2021; End date: 28/02/2023 *(ongoing)*
Deliverables (expected)	Publish 4 datasets, post interactive communication posts and videos on social media, policy brief on epiphytes facing extinction, submit a manuscript to a worldwide impact journal and host a webinar with global specialists on epiphytes addressing extinction risks
Rationale for selection	This case study focuses on a data-use project. Data use grants were introduced in phase two of the BID Programme, targeting more experienced institutions, to better identify and support biodiversity data users. We wanted to assess the support that data-use projects provide to data users in the country of implementation. This case study was also specifically chosen because it takes place in the country of Colombia. The latter was not included in GBIF's definition of Caribbean countries in phase one of the BID Programme but was added in phase two. We aimed to analyse the value-added of including countries such as Colombia into the GBIF definition of Caribbean (within the ACP region) by assessing the

	progress made by projects like this one in advancing data mobilisation and identifying data user needs. This project was also chosen for the case study because it's the only project in our sample which has Plants as its taxonomic focus and unlike the other case studies, it is run by a private foundation. We wanted to assess how project operations differ for projects led by the private sector.

INTRODUCTION

In Colombia, biodiversity data on native epiphytes species[58] are limited, although they represent 25% of Colombian flora. In compliance with BID intervention logic, this project aims to mobilise data on Colombian epiphytes and make it much more accessible for scientific community and policymakers. The project also contributes to strengthening the Colombian GBIF repository on epiphytes as well as implementing the national policy strategy for epiphytes conservation. The project is still ongoing at the time of this evaluation. Nevertheless, several activities have already been performed to date. The project's consortium built a preliminary checklist of Colombian epiphytes species and assessed the status of GBIF records concerning epiphytes in Colombia, in order to identifying where data mobilisation efforts should focus on. In addition, preliminary meetings and work done with biodiversity data stakeholders allowed the project to identify the specific epiphytes species for which the greatest efforts will be made both in terms of data mobilisation and extinction risk analysis. On this last specific point, the project already produced a first draft of a Red List evaluation on native epiphytes species status. To fully achieve its objectives, the project still has to implement several activities, as announced initially within the project's full proposal, in order to deliver a final version of the Red List evaluation to the Ministry of Environment by the end of the project (end of February 2023). Additional assessments on extinction risk as well as distribution models for prioritized group of Colombian epiphytes will be produced by September 2022. By the end of 2022, the project will produce a policy brief to facilitate the integration of data solutions into policy-making processes and will organise a capacity building session (online workshop) to train environmental authorities for using the mobilised data. Also, by the end of November 2022, the project will establish workflows among key biodiversity institutions to promote further data mobilisation and regularly update the resources developed under the project, especially those developed in collaboration with the National Epiphytes Consortium (NEC). These workflows (e.g. with the Herbarium of the University of Antioquia (HUA) or with the University of Valle-Herbario (CUCV)) will be established under the project but are expected to last beyond the grant period for future activities related to Colombian native epiphytes species. Indeed, project's activities are expected to be maintained for a time after the official closure of the project (see below, section "*Project's sustainability*"). Also, the project will continue until the end of the grant period the outreach campaign in social networks on Colombian epiphytes' status and conservation needs which was launched in the first months of the project's implementation. All these activities are implemented by a consortium of 10 partners, including the lead organisation (Fundación Jardín Botánico Joaquín Antonio Uribe de Medellín, Colombia). However, the following stakeholders are also involved in the project: the National Epiphytes Consortium (NEC), as data holding institution/consortium; the Medellin Botanical Garden (Jardín Botánico Joaquín Antonio Uribe de Medellín), as expected data hosting institution.

PROJECT DESIGN AND IMPLEMENTATION

The project coordinator is from the Jardín Botánico Joaquín Antonio Uribe de Medellín foundation which is the second largest botanical garden in Colombia and one of the 3 (out of 22) able to produce data science and to publish in scientific journals. It came to know about the BID Programme and the specific

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[58] Epiphytes are plants on plants, including e.g. lichens, mosses, ferns and angiosperms.

call launched for the Caribbean in 2020 from the national Colombian GBIF node (SiB Colombia). The node was thereafter really involved in the project and the partners received and are still receiving a lot of support from it. The relation between the lead organisation and the Colombian GBIF node pre-existed to the BID project. When the foundation came to know about BID, it was greatly interested to apply with the objectives of implementing conservation actions for epiphytes by bringing together different biodiversity data stakeholders which never worked together before, establishing workflows and new collaborations, and revealing the importance of conservation actions for epiphytes in Colombia. The decision to apply with this specific project was motivated by the fact that, in Colombia, no data, no records, were available on native epiphytes species while they represent 25% of the Colombian flora are overexploited, which push some species dangerously close to extinction. These specific pants species are also highly affected by climate change consequences on tropical forests. The necessity to make cleaned, updated data on epiphytes species available in Colombia was thus a real necessity in view of implementing relevant conservation actions. As explained by the interviewees, the project's design went into different steps which started before the creation of the consortium of partners or the submission of the first application (concept note). Indeed, a first evaluation of the epiphytes conservation needs in Colombia was carried out by the lead organisation in order to identify the priority needs to address for conservation actions. This evaluation took the form of an Agenda which was later used to properly identify the relevant stakeholders to involve in the project. The Agenda included 3 main aspects necessary to help epiphytes in Colombia: research, conservation actions and education/social participation. As a botanical garden, the Jardín Botánico Joaquín Antonio Uribe de Medellín foundation had capacities on these three different aspects and they tried to design and implement the project accordingly. Based on the Agenda, a first draft of the project's application was finally designed and the lead organisation contacted the previously established national consortium for epiphytes in Colombia (National Epiphytes Consortium, NEC) in order to determine how they could create a consortium of relevant partners for this specific project. The project's partners did not use external consultancy services for project design or proposal drafting although no partner has ever been involved in a BID-funded project before.

Once the project designed and partners identified, the consortium did not face any particular challenges during the application and selection process. According to interviewees, it was relatively easy to apply because of previous similar experiences the lead organisation had and since they have more than 15 years of experience with plants conservation projects. After submitting the first proposal (concept note), the partners did not receive any particular feedback from the GBIF selection committee. They were just asked to find another partner to include in the project's consortium in view of the second selection phase (i.e. submission of full proposal). As a co-funded project, other sources of funding than BID were involved in the project, namely the Ministry of Science of Colombia, the Franklinia Foundation (Switzerland) and the National Geographic Society Grants Program. Also, when the project was on the GBIF final list of selected proposals, the lead organisation was invited to join another project related to epiphytes in Colombia with very similar objectives[59], which they finally did not join.

The management of data holding institutions that the lead institution is working with under the project is in charge of the research team of the foundation (scientific director, conservation leader and herbarium director). This team also is responsible for all the project administration. It was a logical way to divide the tasks within this project as the research team's members already had the opportunity to meet the project's data holding institutions, as well as to work with them under previous projects. This allowed to speed up the data mobilisation process and to have open data in an easier way.

The fact that the lead organisation is a private entity probably help to simplify project's management compared to administrative burden that sometimes occur within public institutions leading this kind of projects. For instance, financial and administrative reporting requirements can probably be managed in

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[59] This project also had a similar structure to the BID funded project with similar workflows, and was focused on Colombian steppes and insects.

an easier and more fluid way than in a public institution. Interviewees confirmed that generally, in Colombia, public institutions have more bureaucratic procedures for the verification and validation of processes, especially for financial issues. Processes for purchasing, hiring personnel or approving external services are longer in public institutions as compared to a private entity. According to the interviewees, private entities in Colombia also generally have higher financial resources than public, and public budget allocations for research is nowadays in a high uncertainty in the country.

PROJECT'S EFFECTIVENESS

From the Agenda designed in the early stages of the project, project focused on providing national biodiversity policy makers with cleaned data for decision-making. These data intend to support environmental public authorities to take relevant conservation actions for epiphytes. For instance, the partners already designed a first draft of a Red List evaluation on native epiphytes species status which was delivered to the Ministry of Environment. However, as the project is still on-going, they still require further steps to update this List and provide the Ministry of Environment with a final version (by the end of February 2023). Once finalised and published, it will allow policy makers to design and adapt the political agenda related to epiphytes conservation actions in Colombia.

Specific supports were also provided to national biodiversity policy makers through the project. For instance, the foundation organised capacity building sessions (online workshops) to train environmental authorities for using the mobilised data (advocacy actions on best practices, data analysis tools, publishing methods, etc...). This is one of the specific support the project delivered to data users in the country. Moreover, one of the partner – the Institute Alexander von Humboldt – was very close to the Ministry of Environment before project's implementation which made it easy to identify data users' needs. On the other hand, as a data-use project, the partners received specific support from GBIF such as online seminars for proposal drafting during the first application phase (submission of concept note).

Mobilising and digitalising epiphytes data is also something the project focused on to achieve its objectives. It involves several natural history collections related to Colombian epiphytes with the objectives to make them easily accessible online through open data facilities. However, this was challenging as the interviewees stated that they spent eight months in accessing and cleaning available epiphytes databases before launching digitalisation activities.

Although the project is still on-going, most of the data mobilised, digitalised and made publicly available to date already contributed to the production of the first draft of the Red List evaluation and to several datasets publications[60]. Based on the evidences collected so far, the project will also contribute to enhance Colombian capacities to adapt climate change, manage and conserve natural resources as the information made available will support public environmental authorities to design and implement conservation actions for plants biodiversity.

The Jardín Botánico Joaquín Antonio Uribe de Medellín foundation is also expected to establish international and/or regional collaborations. The interviewees confirmed that the lead organisation is working with the partners to push other epiphytes related projects at the Latin American level, involving several institutions and countries from the region. For instance, with EPIG collaborators[61], they are seeking to design and launch a project about data mobilisation and extinction risk assessments at the Neotropical realm for epiphytes species with a wide distribution. The project should be based on previous research related to epiphytes in Latin America and Amazonia[62], and should involve several biodiversity

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[60] See https://ipt.biodiversidad.co/sib/resource?r=jaum-bid-ca2020 for an example of dataset published under the project by the lead organisation. At the time of the interview with the project coordinator, three other datasets were also under review by the lead organisation's director before publication.

[61] Epiphytes Inventory Group (EPIG) is a global initiative which seeks to bring together epiphyte inventory data from across the world (EpIG - HOME (weebly.com)).

[62] EpIG-DB: A database of vascular epiphyte assemblages in the Neotropics - Mendieta-Leiva - 2020 - Journal of Vegetation Science - Wiley Online Library

institutions from Mexico, Brazil and Colombia. Looking at the international level, interviewees stated that the credit the lead organisation got thanks to the BID project permitted to establish a collaboration with the Royal Botanical Garden of Madrid (Spain). In collaboration with it, the foundation is going to organise an exhibition on epiphytes conservation needs.

The work done for years by the Jardín Botánico Joaquín Antonio Uribe de Medellín foundation on epiphytes conservation, including within this project, was officially recognised by the municipality of Medellin, giving even more credit to the foundation for future activities related to biodiversity conservation.

PROJECT'S SUSTAINABILITY

Project's sustainability was planned from the beginning within the Agenda (for sustainable conservation actions) and within the full proposal (for sustainable project's activities). Three PhD students from the Jardín Botánico Joaquín Antonio Uribe de Medellín foundation are currently involved in the project and are in charge of guaranteeing its sustainability and long term lasting impacts. Once the project is closed, interviewees stated that the lead organisation could provide some additional funding in order to maintain the activities initiated under the project for a time.

The BID project inspired several epiphytes related projects which will be launched in Latin America within the next few years and other related on-going projects have already been launched, such as for example a National Geographic project which is based on the data mobilised under the BID project (namely, *Saving Andean threatened epiphytic species on the brink of extinction: engaging decision-making actors and local communities*, GR-000049987). The interviewees confirmed that one of the foundation's members colleagues based in Germany was planning to apply under a German grant facility offered by the German Research Foundation (DFG) to launch a project (namely, *Conservation biogeography of vascular epiphytes in the neotropics*) based on the outcomes of the BID funded project.

Also, given its missions and activities, the lead organisation has access to different public grant opportunities which help to ensure project's sustainability. For instance, the interviewees confirmed that they are eligible to grant facilities provided by the Ministry of Environment because of biodiversity conservation actions they implement within the foundation, but also to those provided by the Ministry of Science, Technology and Innovation because of biodiversity data science activities and by the Ministry of Higher Education because of PhD and post-doctoral students usually involved within the institution.

BID'S ADDED VALUE AND ROOMS FOR IMPROVEMENT

Colombia became eligible under the BID programme during the second phase. According to the interviewees, this was a great news and they were impressed that it was not the case in the first phase as the country is one of the most diverse biologically in the world. Therefore, supporting the implementation of biodiversity related projects in this specific country was logical and necessary to address biodiversity needs and implement relevant conservation actions within tropical regions. Including Colombia in the BID Programme also produces an added value for the country as the project allows national institutions to advance data mobilisation and better identify data users' needs. The country also took advantage of the Programme as the funded project allowed to strengthen the consortium for epiphytes conservation (NEC) at the national level, allowing participants to establish new collaborations and to work together for biodiversity conservation across Colombia.

Moreover, interviewees stated that if the project had not been selected for funding under BID, they would have searched for another grant opportunity, especially at national level[63]. They confirmed that the partners applied to 10 other grant opportunities in parallel to BID at national and international levels, using the same Agenda they used for the BID application. However, according to them, to be granted from the BID Programme includes certain benefits that are not provided by national grant facilities.

Frontiers | The Amazon Epiphyte Network: A First Glimpse Into Continental-Scale Patterns of Amazonian Vascular Epiphyte Assemblages (frontiersin.org)

[63] A very similar project on Colombian native trees is currently implementing with funding from a national grant facility.

Indeed, it seems that it is always easier to be selected under other grant opportunities when the institution has already received funds from an international institution such as GBIF. Thus, the BID Programme produced a kind of "recognition effect" on the institutions selected for funding (project's partners and lead organisations) when they apply elsewhere.

Under this project, it was also the first time that a botanical garden in Colombia got a grant from the BID Programme. Once they published this news on the foundation's website, 5 other Colombian botanical gardens applied to the Franklinia Foundation grant facility (which is one of the project's co-funder, see above section "*Project design and implementation*"). According to interviewees, the same thing can happen with the BID Programme, i.e. receiving funding from it can produce a kind of "call effect", encouraging other similar institutions to apply. Indeed, the institution granted shows to others that it is possible, giving confidence to and encouraging applications of other institutions. Sometimes, the network of the institution granted also comes to know about the funding opportunity thanks to the selection of the institution, which then encourages their applications. Also, for interviewees acquiring new skills and knowledge through BID workshops and project's activities, e.g. for young researchers, is more important than earning a certification (workshops' badges). Some attendees, although not certified, learnt a lot with the workshops to improve tasks performed under the project or under future biodiversity research activities. More generally, interviewees believe that implementing this kind of project train the people involved in, strengthen the existing professional networks (between institutions and between researchers), and can inspire to launch other related activities, especially young researchers, allowing additional potential benefits for biodiversity conservation in the future.

Considering a potential future third phase of the BID Programme, the emphasis should be on the biodiversity data shortcomings and inconsistencies that frequently exist in Latin America between available, relevant, cleaned biodiversity data and conservation actions that decision and policymakers would implement. Interviewees insisted on the fact that conservation actions in these countries require more available and cleaned data. A relevant shortcoming of BID calls is the taxonomic validation by experts. The vast majority of herbariums in Latin America either do not have plant curators or do not manage to embrace the great biodiversity that is deposited into them.

Also, the interviewees stated that they sometimes lack relevant capacities and tools such as video, camera, and opportunities to meet between partners, which made challenging the implementation of some activities as initially announced in the full proposal. Increasing the budget for equipment and transport could thus improve the implementation and effectiveness of certain activities.

Another room for improvement for a potential future phase of the BID Programme should be to permit long term project's cooperation, e.g. by extending the length of the funded projects to 5 years or even more. Indeed, the interviewees informed the team that sometimes beneficiaries feel that project's issues stop with its official closure, which can be frustrating. However, the issues faced under the BID projects are never completed because of the nature of the activities performed (research) and of the object of the activities (biodiversity data). For instance, in Colombia, there are urgent needs to explore much more the forests given the risk of species extinction due to climate change and then take relevant actions for conservation before it is too late. Under a future BID phase, extending the length of the BID funded projects or allowing longer project's collaborations could help to better address biodiversity needs, especially in Colombia and in the Caribbean region.

ANNEXES

List of references:

Collections-based engagement of decision-makers to save globally threatened epiphytes in Colombia (gbif.org)

SiB Colombia (biodiversidad.co)

List of interviewees:

- Project coordinator. Researcher at the Jardín Botánico Joaquín Antonio Uribe de Medellín foundation (Colombia). The interview took place virtually on Teams, on July 22nd 2022, from 6:00 PM to 7:00 PM (CET) – 11:00 AM to 12:00 AM (COT).

- Former scientific director at the Medellin Botanical Garden (Colombia). The interview took place virtually on Teams, on August 5th 2022, from 5:00 PM to 6:00 PM (CET) – 10:00 AM to 11:00 AM (COT).