GBIF - Capacity Enhancement Support Programme

FINAL ACTIVITY REPORT

Guidelines on how to complete the activity report are included in italics. Please include sources of verification as links or annexes.

Remember that this report will be made available on your project page on the GBIF website and therefore should not include email addresses, unless you have permission from all mentioned in the report that their email information can be published.

Contents

1. Project overview

Please insert text in the table

Project title	Unlocking access to biodiversity data in southern Africa, through engagement and training of academia
Project ID	CESP2018_025
Project period	Start date (dd/mm/yy): 01/07/18 — End date (dd/mm/yy): 30/06/19
Project lead	
Name of the main contact person	Lizanne Roxburgh
Name of institution	Endangered Wildlife Trust
GBIF Participant represented	Endangered Wildlife Trust
Role(s) in this project	Coordinator and Trainer

Project partner(s)		
Name and institution of the representative	GBIF Participant represented (if applicable)	Role(s) in the project
Prof Ara Monadjem, University of eSwatini (UNESWA)		Data champion at University of Swaziland, promotion of course among students and colleagues
Dr Tiwonge Gawa, Malawi University of Science and Technology	Malawi	Data champion at Malawi University of Science and Technology
Prof Tamuka Nhiwatiwa, University of Zimbabwe,		Data champion at University of Zimbabwe, promotion of course among students and colleagues
Prof Aliza le Roux, University of the Free State, South Africa		Data champion, promotion of course among students and colleagues
Dr Nimmi Seoraj Pillai, Tshwane University of Technology, South Africa		Data champion, promotion of course among students and colleagues
Dr Morgan Hauptfleisch, Namibia University of Science and Technology		Data champion, promotion of course among students and colleagues

2. Executive summary

Provide a brief explanation of the project and its implementation, the main capacity enhancement objectives achieved, the approach taken for the final evaluation, lessons learned and conclusions.

The aim of the project was to build capacity in biodiversity data management and publication and to increase awareness of GBIF among universities and other academic institutions in the SADC region. The project started with an online review of data publishing by academic institutions in the region. Despite being important collectors and holders of biodiversity data, only 11 out of more than 100 institutions had published any data, by September 2018.

For the capacity enhancement component of the project, we developed a training module on GBIF and biodiversity data management, and held the first two-day training course at the University of eSwatini (UNESWA). Eight graduate students from the Biological Sciences Department attended the training. Based on the experience and feedback from students, the course was adapted before being conducted at two other institutions in the region.

We also gave a departmental seminar on data publishing and GBIF at the Biological Sciences Department at UNESWA, to at least 40 staff members and students. A pre-seminar survey was conducted to determine willingness to share data, which was overwhelming positive, as well as people's awareness of GBIF, which was low.

In April 2019, a second two-day training course was held at the University of the Free State (Qwaqwa Campus). A departmental seminar was held the day before the course, to inform lecturers and other staff about GBIF and data publishing. However, at UFS, the departmental seminar was redundant, as the same people who attended the seminar also

attended the course. The course content was adapted to include a section on mobile data collection apps, to ensure that data collected are formatted correctly in DarwinCore from the start. This proved to be a popular component of the course.

The final two-day training course was held in June, at the Malawi University of Science and Technology (MUST) in southern Malawi. This is a relatively new and small university that has graduated its first students this year. There were insufficient staff and students based at the university to attend the course and it was therefore opened up for attendance to other universities and research institutions across Malawi. We did not plan for a departmental seminar, for the same reason as at UFS that the same people would attend both the course and the seminar. Shortly after the course completion, the University of Lilongwe, in Malawi, have also requested that the course be run at their institutions, and the course was held in Namibia, with funding from the African Biodiversity Challenge project that was run by SANBI in South Africa. The course is also available online on the EWT's e-learning platform, as well as a recorded webinar that introduces data sharing and GBIF, particular to students and researchers.

3. Project objectives

Provide the list of the objectives included in your original project proposal, and a description of how your project activities contributed to meeting them. Also include any additional objectives that were defined during the implementation of the project. In the event of unexpected challenges which prevented you to reach a planned project objective, please provide detailed explanations and indicate how you plan to reach these objectives post project.

Project objective: Improvement in skills and knowledge of biodiversity data management and publication of researchers in the SADC region, leading, in the long-term, to increased mobilisation of biodiversity data, to better inform and strengthen conservation practice and sustainable development.

The objective of this project was to improve skills and knowledge of biodiversity data management and data publication of researchers in the SADC region. Through the departmental lectures and training in this project, we directly interacted with at least 60 researchers and students in 3 countries, from 6 different institutions. Only 1 of these countries (i.e., South Africa) has any academic researchers that have published data to GBIF so far. About 65% of these people had never heard of GBIF before, and most were unaware of any other online data-sharing platforms or data publishing. Twenty-four people in total attended the courses, which covered topics of data management (particularly data standardisation and cleaning, and improved data and metadata capture), data publishing and sharing on GBIF, and data paper publication.

4. Project implementation

4.1. Activities completed

Describe the activities that have been completed at the time of writing the report. Explain how the different partners in the project have contributed to their implementation.

The project deliverables were as follows:

1) Baseline information on current data publication and knowledge of GBIF across academic institutions in southern Africa.
2) Ten open data champions identified at biological sciences departments within academic institutions in countries within the SADC region, both within countries that already have BIFs and in countries without BIFs.
3) A webinar aimed at researchers (initially our data champions) about GBIF, data publication and data papers. This will be made available on the project webpage

during the course of the project, so that the wider GBIF Africa community can make use of the resource.

4) A training module for biological sciences students developed in various formats, made available to at least 10 academic institutions in various countries within the SADC region, and promoted more widely within the GBIF Africa network.

5) At least 50 students trained, either through the EWT's online training platform, or in face-to-face training offered at universities (although we expect to reach a lot more students less formally through webinars, Facebook and LinkedIn and other disseminated training materials).

6) Guidance material for use by GBIF nodes to engage academia, including a description of the approaches we took, and information on university policies to data ownership and publication.

The following activities were completed under each deliverable:

1)   Baseline information of data publication and knowledge of GBIF

1.1 Determining the baseline knowledge about GBIF among researchers in biological sciences departments within academic institutions across the region through a short online survey, sent to as many researchers as possible (bearing in mind, the typical survey response rate of 10–15%).

A short survey was developed and conducted with lecturers and students at the 3 institutions where we conducted the training courses – these were the University of Eswatini (UNESWA), University of the Free State, Qwaqwa Campus (UFS) and the Malawi University of Science and Technology (MUST). A total of 58 people filled in the surveys. The results indicate that between 60 and 70% of respondents had not heard about GBIF before the seminar or course (Figure 1 below).
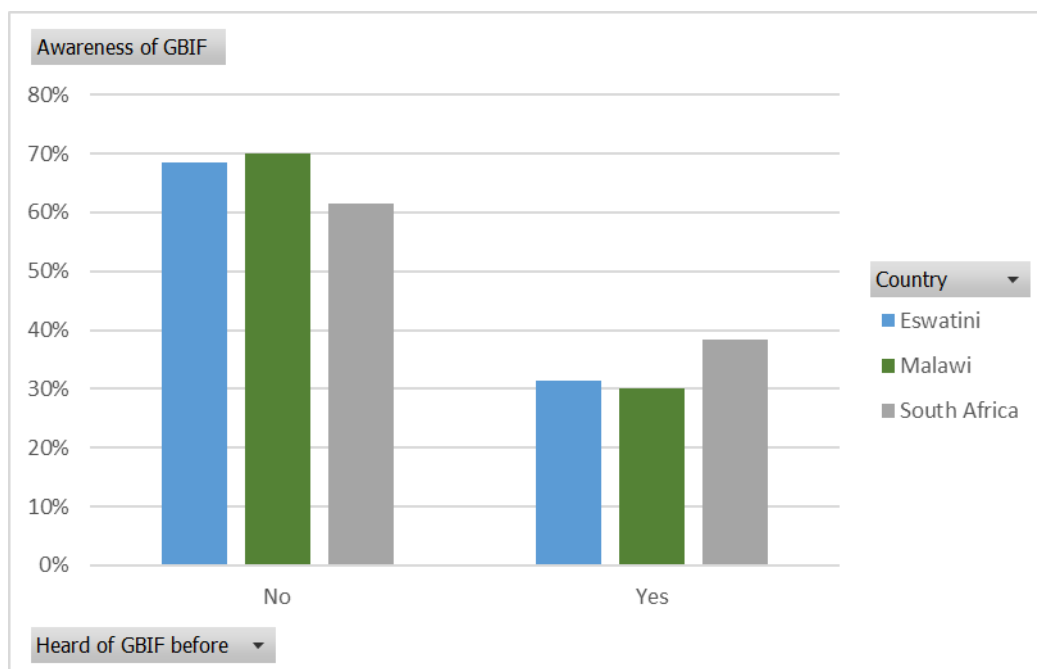
However, despite this lack of awareness of online data sharing portals in general, about 90% of respondents expressed willingness to share data once they had finished using it, although they felt less strongly about this in South Africa than in either Malawi or Eswatini (Figure 2 below).
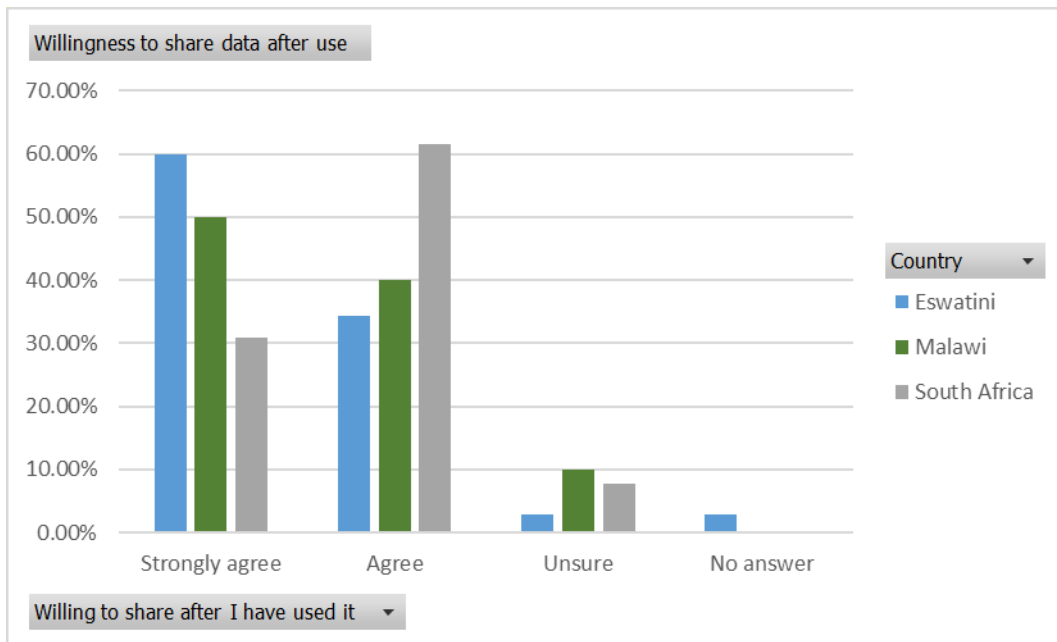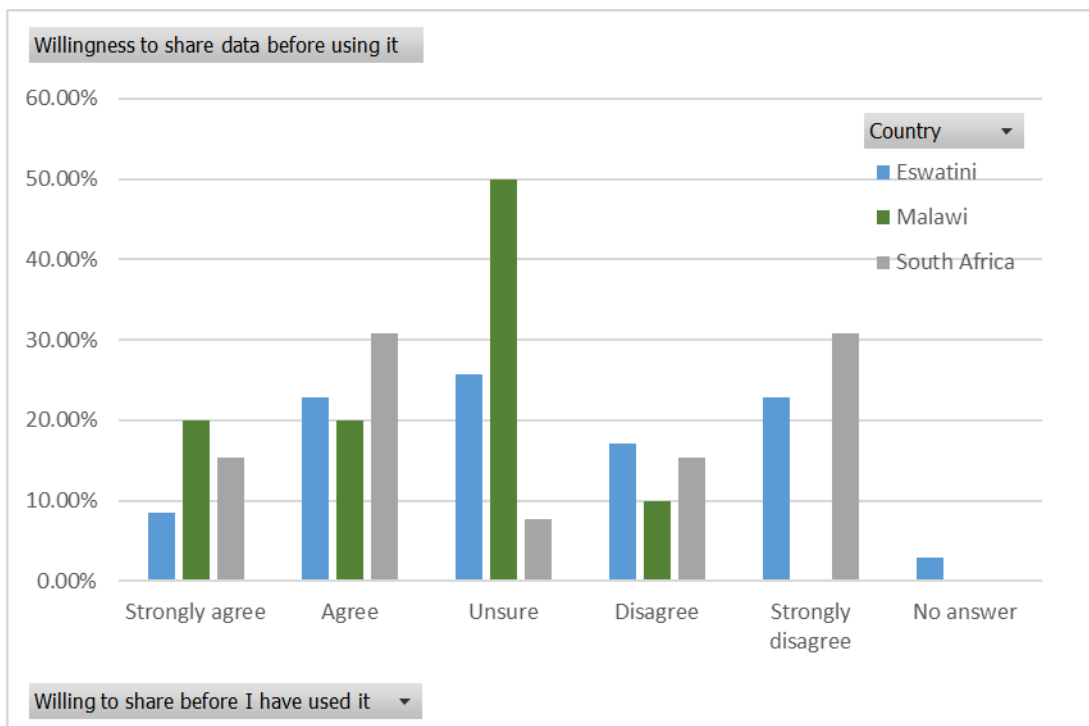
Figure 3 below shows that respondents were less sure about sharing their data before they had made use of it. Nevertheless, 30-40% of respondents were willing to do so, the remaining 60% being unsure or unwilling to share before their own use of the data was complete.

1.2 Amount of data being published to GBIF by academic institutions in the region (assessed from GBIF records).

The review of data published by academic institutions was completed in September 2018. Through an internet search, we identified 158 tertiary education institutions in the 14 countries of the SADC region; however, not all of these are collectors of biodiversity data – we estimated that 134 of these are likely collectors or holders of biodiversity data. In total, we found 41 datasets that have been published to GBIF from these institutions, from 6 countries and 11 institutions. The results from this search are provided separately in an Excel spreadsheet. Figure 4 below shows the number of likely biodiversity-data holding institutions per country and the number of these that have published biodiversity data on GBIF.
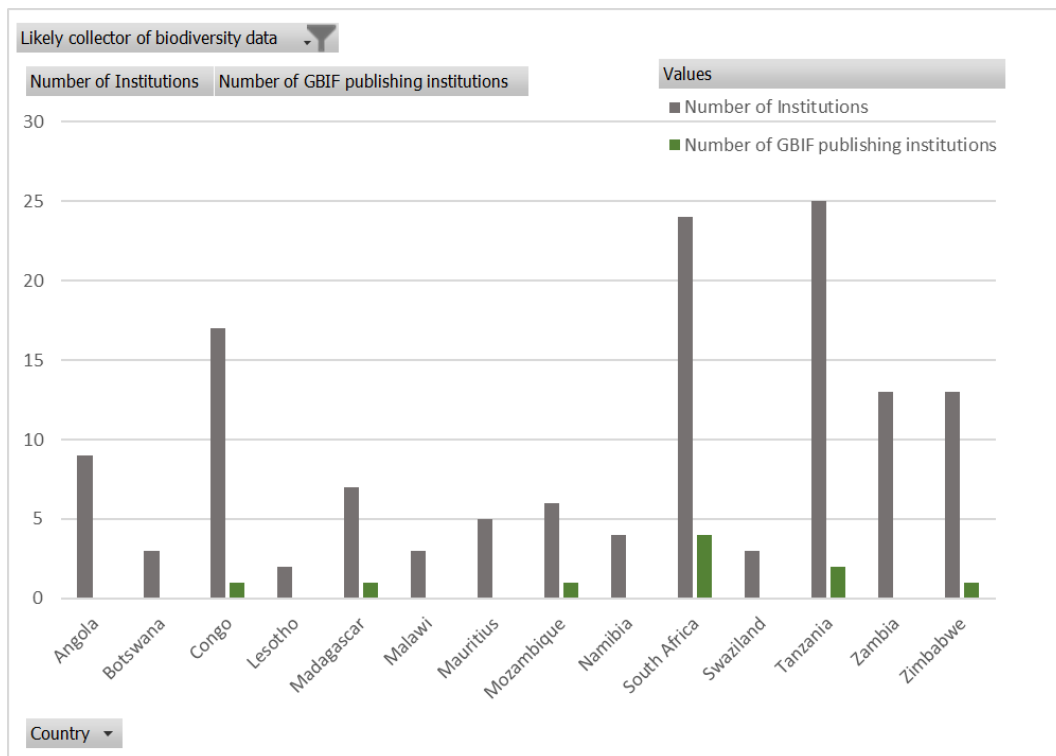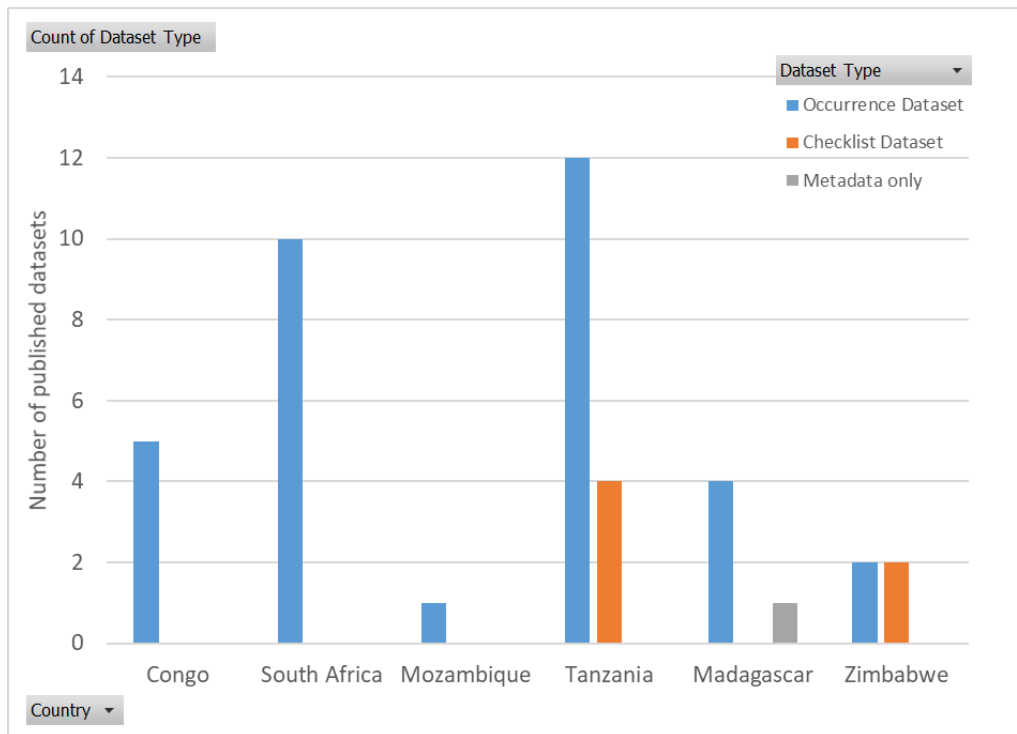

Figure 5, below, shows the number and type of datasets published by tertiary institutions per country.

Count of Dataset Type — bar chart showing Number of published datasets by Country and Dataset Type (Occurrence Dataset, Checklist Dataset, Metadata only)

2)   Open data champions

2.1 Details of ten open data champions from biological sciences departments within academic institutions provided in mid-term report to GBIF.

We did not identify additional data champions outside of the partners listed in the project. Our focus was on developing the course and seminar content and ensuring that we were engaging with existing partners first, before contacting new data champions. Our goal was possibly too ambitious for the time-frame of the project.

3)   Webinar

3.1 Pre-webinar and post-webinar surveys of data champion project participants to determine their extent of knowledge, change in attitude and behaviour regarding data publication.

We conducted pre-departmental seminar and pre-course surveys, and we have reported the results under point 1. We developed a presentation suitable for a webinar and presented it at three universities, before or during the training course. As presenting the online (webinar) version was dependent on activity 2.1., which we did not complete, activity 3.1 was also not completed. However, the webinar was recorded, and is freely available on the EWT's e-learning platform (https://learning.ewt.org.za). The 20-minute webinar introduces GBIF and data sharing generally, including where to find data and why to share, and is aimed particularly at university-based biological researchers and students.

4)   Training module.

4.1 Distribution of training module for biological sciences students to at least 10 academic institutions in various countries within the SADC region, as detailed in final report to GBIF.

The training module was conducted at the University of Eswatini (UNESWA) in 2018, and at the University of the Free State (UFS), and the Malawi University of Science and Technology (MUST) in 2019. We were also hoping to conduct training at Tshwane University of Technology, but were not able to agree on a date for the training with the University. After each training session, the course was assessed by the participants, and the training material was adapted and improved.

We did not reach our goal of distributing the training module to 10 academic institutions, as originally planned. We were over-ambitious in our goal, and our activities were also delayed, especially our face-to-face training course in Malawi, which was delayed due to post-election violence there. The training materials that we adapted from the BID training also required more adaptation for a university/ tertiary education context than we had anticipated, and were only fully ready for roll-out for further dissemination after the Malawi training was complete, and all exercises had been tested.

The online version of the course has been loaded onto the EWT's e-learning platform (learning.ewt.org.za), and is freely available after registration. We have also conducted the face-to-face training at the University of Namibia, through the African Biodiversity Challenge Project that is being run by the South African Biodiversity Institute.

5)   Student training

5.1 Pre- and post-course surveys of students, to determine extent of knowledge about GBIF, data publishing, and attitudes to data sharing. These will be built into the online courses, and will be given at the face-to-face lectures at universities.

We conducted the pre-course and post-course surveys of students at UFS and MUST, as part of the course satisfaction survey. Most students expressed a willingness to share data before the course. However, 6% of students were unsure about this (Figure 6).
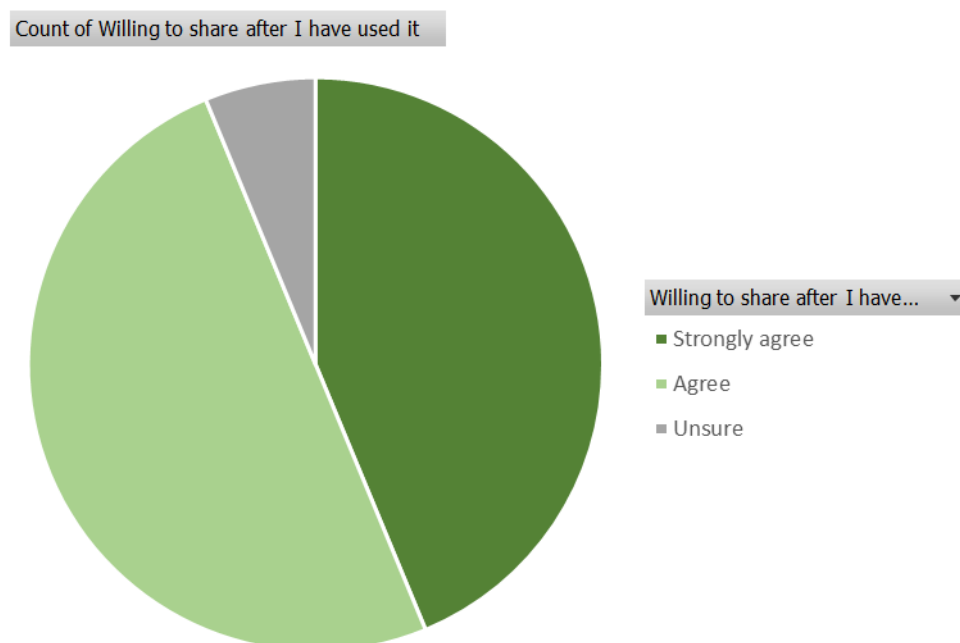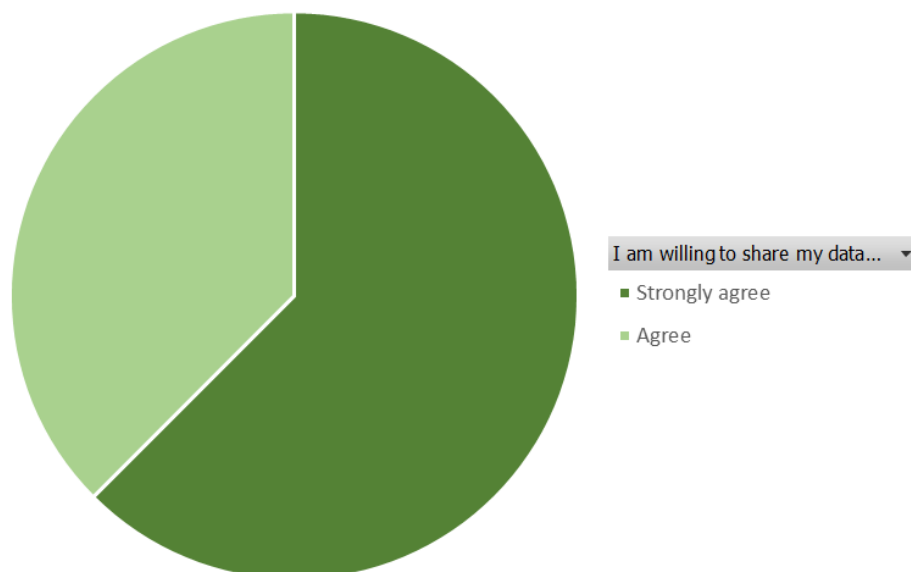

Figure 7 below shows the change in attitude after the course. All course participants now expressed a willingness to share data, and the percentage who strongly agreed with sharing of their data changed from 44 to 63%.

Count of I am willing to share my data after I have finished using it

I am willing to share my data... ▾
■ Strongly agree
■ Agree

5.2 Pre- and post-course skills assessment surveys of students to determine improvement in data management skills.

This was a neglected component of the training. At UNESWA, this would have been difficult to do because of lack of internet access and a range in computer capabilities, with some students' computers being very old. We neglected to include a formal assessment component in the additional two trainings, but the trainer worked with all students, and they all completed all the training exercises. A formal assessment, in the form of quizzes, has been included in the online training, where students will be working by themselves.

5.3 Course satisfaction surveys to be given in face-to-face lectures, to improve the course, in preparation for the launch of the online course, and also in the online course, to identify problems and improve the course content.

Course satisfaction surveys were completed by students at the 3 different universities. Figure 6 below shows the combined results for all 3 training courses, on whether course attendees agreed that they had gained new knowledge and skills from the training. All agreed or strongly agreed with this statement.

Location ▼

Count of I gained new knowledge and skills from this training intervention

I gained new knowledge and... ▼
■ Agree
■ Strongly agree
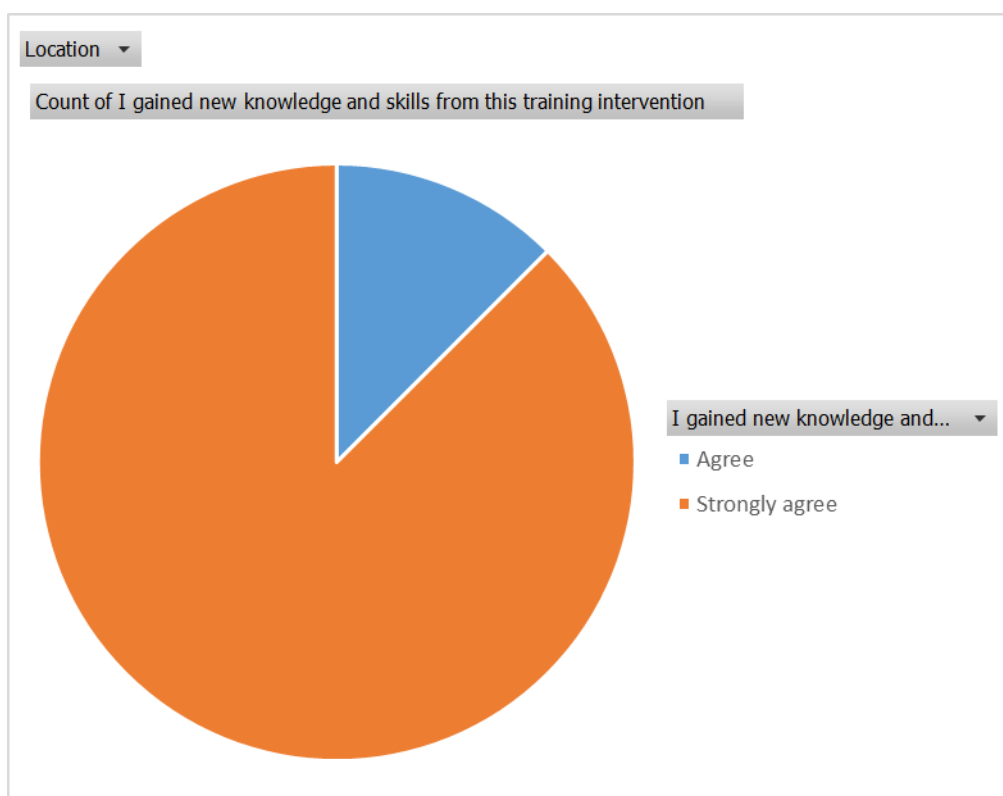
The initial course that was held at UNESWA was based strongly on content from BID trainings, and also included a limited number of activities. The activities were restricted due to lack of internet access, which was a major problem and limited the scope of the training, as well as to the poor quality of some students computers (for example, we could not load recent versions of Java onto some older machines, to allow the training software to run). The main two requests that came up from this first course were to include more practical exercises, and that the terminology was difficult to grasp in a relatively short period of time.

We therefore included more practical exercises, as well as reduced the new terminology to the essentials in the second and third training courses. A decision was also made to include the development of data collection apps into the second day of the training, as these could be adapted to correctly format collected data according to DarwinCore. This component of the training was received favourably at both UFS and MUST.

In the second training course at the University of the Free State, we had a dedicated computer room and internet access and thus the full suite of activities could be conducted, apart from some teething problems with the needed software not having been installed by the host. This course proceeded better, the main problems being the complete overlap between people attending the departmental seminar and the course. We also had a high attrition rate of students who attended the course on the first day, but not the second. The reasons are speculative as to why, but these include i) the second day of the course being run on a Friday with students departing the campus for the weekend, ii) the course material being handed out in its entirety on the first day, so that students did not have to return on the second day, and iii) several people from non-relevant departments and disciplines attending the course on the first day. The 7 students remaining on day 2, however, gave the course favourable reviews.

The final course held in Malawi was adapted to incorporate the departmental seminar on GBIF and data sharing, as well as to include an explicit section on principles of good data management, and which aspects were the responsibility of the data-holding institutions and which were for individual researchers. While good data management practices were taught

in the preceding courses, it was important to put these practices into the broader context of good data management by institutions. The final course also received favourable feedback by participants, was well managed and coordinated by the host, MUST.

6)   Guidance material

6.1 Guidance material distributed to GBIF nodes.

The guidance material was produced in the form of a short one-page pdf[1], to distill succinct lessons learnt, and is available to share with the network.

4.2. Post-project activities

Describe post-project activities if any (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.

The following post-project activities are planned:

1) Promotion of the course amongst project partners

    Especially for those institutions in this project (TUT, University of Zimbabwe) that did not receive face-to-face training, the course will be advertised here for students and staff who wish to complete the short course. It will also be advertised more widely amongst the GBIF Africa group.

2) Conducting further face to face training, in other African countries

    Following a successful training course at the University of Namibia, SANBI-GBIF has expressed an interest in conducting further training courses with projects in their African Biodiversity Challenge 2 project in 2020.

4.3. Project deliverables – final status

Provide updates on the status of the planned deliverables at the time of final reporting, listing the activities related to these and providing explanatory notes.

For any deliverables that have not yet been completed, please provide detailed explanatory notes and indicate planned completion date after the end of the project.

In the event of any additional deliverables having being completed during the implementation of the project, please add rows as required.

Please provide links to any documents or webpages in the "Sources of verification" column. Add as many rows as needed. Alternatively the deliverables can be attached to the report in the Annex.

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
Baseline information on current data publication and knowledge of GBIF across academic	Online search for institutions and	Yes		1) Excel file with result of the pre-course and

---

[1] Guidance material for use by GBIF nodes to engage academia.pdf

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
institutions in southern Africa.	published datasets Attitude and knowledge survey			pre-seminar surveys[2] 2) Excel file with the result of the online search of data publication[3]
Ten open data champions identified at biological sciences departments within academic institutions in countries within the SADC region, both within countries that already have BIFs and in countries without BIFs.	Engagement of course hosts at various institutions	No	We failed to extend our communications with data champions beyond the planned project partners. Our goal was too ambitious for the time frames of the project.	
A webinar aimed at researchers (initially our data champions) about GBIF, data publication and data papers. This will be made available on the project webpage during the course of the project, so that the wider GBIF Africa community can make use of the resource.	Development of webinar Presentation of webinar	Yes	A presentation has been developed and was given at two institutions (UNESWA and UFS), and incorporated into the training schedule at Malawi. Presenting the webinar was linked to the activity on identifying data champions, which was not completed. However, the webinar was recorded, and included in the project MOV. The presentation was also given at the training in Namibia.	Recording of, and slides from, the webinar.
A training module for biological sciences students developed in various formats, made available to at least 10 academic institutions in various countries within the SADC region, and promoted more widely	Training module developed	Yes	The training module is complete, and has been adapted for and loaded onto our online training platform.	Course timetable for Malawi[4]

---

[2] Pre-seminarSurveys_CESP2018_025.xlsx
[3] SADC_GBIF_Publisher_search_baseline_Final.xlsx
[4] CourseTimetable_Malawi.xlsx

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
within the GBIF Africa network.				
At least 50 students trained, either through the EWT's online training platform, or in face-to-face training offered at universities (although we expect to reach a lot more students less formally through webinars, Facebook and LinkedIn and other disseminated training materials).	24 students/ researchers trained at 3 Universities in the region	Yes	The 3 face-to-face training courses are completed. The uploading of the online course has been completed, and is available at https://learning.ewt.org.za/	Course attendance registers[5], post-course satisfaction surveys[6], course photos
Guidance material for use by GBIF nodes to engage academia, including a description of the approaches we took, and information on university policies to data ownership and publication.	Develop of a guidance document	Yes	This was kept to a short one-page guide on the main issues that we encountered and that assisted in the engagement and training.	Guidance document[7]

4.4. Project calendar

The calendar should be updated from the status at mid-term to reflect the project implemenation at the project's close.
Please provide justifications for any changes in the notes column.

Activity	2018							2019						Notes
	J	J	A	S	O	N	D	J	F	M	A	M	J	
Engagement with researchers and universities to identify open data champions, in consultation with GBIF Africa partners in the SADC region. Compile and interrogate information on university data policies.		X	X		X				X	X	X	X	X	Extended into June, due to the delay in the Malawi training

---

[5] AttendanceList_MUST.pdf and AttendanceList_UFS.pdf
[6] Course_assessments_CESP2018_025.xlsx
[7] Guidance material for use by GBIF nodes to engage academia.pdf

Activity	2018							2019						Notes
	J	J	A	S	O	N	D	J	F	M	A	M	J	
Prepare webinar content, student training and advocacy materials, and course assessment.			X	X	X			X	X		X	X		Adjusted after the UFS training, in preparation for the MUST training in June
Obtain baseline information on data publication and knowledge of GBIF among academic institutions.		X			X				X	X				
Present webinar to data champions.					X						X		X	The webinar presentation was given in face-to-face lectures, and a recorded version is also available online at learning.ewt.org.za
Present course at four universities in the region (taking into account university timetables, exam periods, holidays).					X						X		X	The Malawi training was delayed due to post-election violence
Adjust course content based on face-to-face learning experiences and assessments. Adapt materials for online course, load and test online course.								X	X	X	X	X		
Promote online course through data champions, and other regional contacts and GBIF Africa network. Enrol students for online course. Disseminate training materials in other formats to universities with poor internet access.														Online course loaded, and promotion of course in progress.
Complete guidance material on academia engagement for African nodes.											X	X	X	Delayed to June, due to the delay in the Malawi training
Deadline for mid-term reporting.							X							
Deadline for final reporting.													X	Delayed due to the delay in the Malawi training

4.5. Project communications and visibility

Describe the way the results of your project have been and will continue to be communicated and shared with the project stakeholders and broader GBIF community. Please also review the page describing your project available from https://www.gbif.org/programme/82219/capacity-enhancement-support-programme#projects. Highlight any additional documents, events, news items or links that you would like to add to your page and provide links/attachment in the Annex.

Aside from the updates to the project page, we also had two Facebook posts on our trainings at the University of Swaziland and the Malawi University of Science and Technology
(https://www.facebook.com/EndangeredWildlifeTrust/posts/2584391758239939).

5. Evaluation: lessons learned and best practices

An assessement of the overall outcomes and impacts of your project, including strengths and weaknesses in its implementation and results. Try to identify your experiences that could help others to design and implement projects more effectively, including the best practices to adopt and the pitfalls to avoid.

1) We were somewhat over-ambitious in our goals, and could not achieve everthing that we had planned to do in this project. One of the institutions that agree to host a workshop never came through with a suitable workshop date, despite reminders.

2) Each institution that we held workshops at differed, and lessons were learnt at each institution. Key lessons were: a) internet access to conduct the training was crucial (we did not have this at UNESWA, which limited the activities that course participants could do. We provided co-funding to ensure that the course participants had internet access in Malawi); b) selection of candidates for course attendance should be done by the course provider (the number of participants attending the UFS workshop dropped steeply from day 1 to day 2. We relied too heavily on selection of suitable candidates by our contact person at the University, and the training was not relevant for most people that attended the course on day 1. Those that stayed for day 2 were the suitable candidates. For the Malawi training, we prepared a pre-registration form and this training was significantly more successful); c) a singe institution rarely had enough candidates to attend the training. At UFS and UNESWA, we should have advertised more widely to allow participants to attend from other institutions, and also should have included money for travel of course participants within the budget.

3) Preparation of training materials took longer to develop than we had anticipated, and required more adaptation from one format (face-to-face) to online, than we anticipated. Additional time should have been budgeted for this.

6. Future plans and sustainability

A description of how the partners involved will build on the results of this project in their future work. This could include future collaborative activities, such as plans to complete any unfinished project activities, and how the future impact of the project could be monitored or measured.

We conduct the face-to-face training at the University of Namibia, with staff from several institutions across the country, which catalysed discussions about establishing a national biodiversity information forum and also a GIBF node. Other institutions in Malawi have expressed an interest in hosting the course. In addition, copies of the training materials were left in Malawi for use in other training modules being conducted by Dr Tiwonge Mzumara at MUST.

The pre-training and pre-seminar/ webinar surveys can be redone in a few years to guage whether awareness of GBIF has improved in the partner institutions in this project. The review of dataset publishing can also be redone in a few years to determine whether the hosting institutions have published datasets, and also whether publication of datasets has spread to other institutions in the region.

7. Signature of the project main contact person

Signed on behalf of the project partners   Date

_____   2019-10-31

Annex 1 – Additional sources of verification

Please use this section to provide any additional sources of verification, for example links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc.

These are all provided under section 4.3.