Darwin Initiative Main Project Annual Report

Important note: *To be completed with reference to the Reporting Guidance Notes for Project Leaders: it is expected that this report will be no more than 10 pages in length, excluding annexes*

Submission Deadline: 30th April 2017

Darwin Project Information

Project reference	21-019
Project title	Strengthening marine protected areas and marine ecotourism benefits in Sudan.
Host country/ies	Sudan
Contract holder institution	Equipe Cousteau
Partner institution(s)	Wildlife General Conservation Administration; Sudan Development Initiative (SUDIA)
Darwin grant value	£ 300,000
Start/end dates of project	01st April 2014-31st March 2017 Note: Defra accepted (4th November 2014) a no-cost extension of 6 months extending the final deadline until 30th September 2017. A second no-cost extension request was submitted and accepted by Defra (12th April 2017). The project end date is now 31st March 2018.
Reporting period (e.g., Apr 2016 – Mar 2017) and number (e.g., Annual Report 1, 2, 3)	01st April 2016-31st March 2017 Annual Report 3 (AR3)
Project Leader name	Tarik Chekchak and Rebecca Klaus
Project website/blog/Twitter	http://www.cousteau.org/projects/protect-sharks-and-rays-of-the-red-sea/ And http://sudanmarineparks.info/
Report author(s) and date	Rebecca Klaus, Tarik Chekchak, Abdel Rahman 30th April 2017

1. Project rationale

Globally, although the total number of Marine Protected Areas (MPAs) declared has increased, many are failing to protect biodiversity or to realise economic/social benefits for local communities. Such failures may be due to many reasons but often they are underpinned by a lack of capacity, financial resources and competing priorities for limited budgets. In politically unstable countries, biodiversity conservation often comes low on the national agenda, and this presents a particular challenge, which can be further aggravated by restricted access to funding from external sources, especially in countries facing political sanctions such as Sudan.

Sudan borders the Red Sea, one of the most diverse tropical seas, and supports large aggregations of manta rays and large schools of scalloped hammerheads sharks among other species on the offshore reefs. Despite the fact that Sudan has experienced a prolonged period of instability following independence, the country recognised the importance of the biodiversity found within their Exclusive Economic Zone (EEZ) and designated two MPAs. The MPAs cover coastal and marine environments that remain in a relatively pristine state and that host healthy populations of globally threatened shark and rays (elasmobranch) species. This effort and the globally significant reservoir of biodiversity that is supported by Sudan has yet to be fully recognized internationally.

Government of Sudan, in recognition of its unique natural marine heritage, drew up and implemented legislation for a complete ban on shark fishing and established two flagship National Marine Parks Sanganeb Atoll Marine National Park (SMNP) and Dungonab Bay-Mukkawar Island Marine National Park (DMNP), to help protect and sustainably manage its marine resources.

Shark and rays are enigmatic flagship species with the potential to generate revenues for local communities through ecotourism and diving tourism, and attract further investment in MPA management. The current DI project was designed to improve knowledge about these endangered/vulnerable elasmobranch species, and to build local capacity to monitor and manage these resources and support new nature-based livelihoods to help alleviate poverty.

The current project is supporting the local management authority, the Wildlife Conservation General Administration (WCGA), to help them to be able to better manage their existing MPAs and threatened species through providing new equipment, renovating existing infrastructure and providing staff with additional training.

The aim of the current project is to gather new information about the movement and residency patterns of shark and ray species which will be used to update spatial management plans for Sudan's Red Sea coast and the wider region. The information will also be used to support the development of sustainable eco-tourism activities to assist local communities to realize economic benefits from the wise use of their marine biodiversity resources. Community members inside DMNP in Sudan will be provided support to establish sustainable alternative income-generating opportunities.

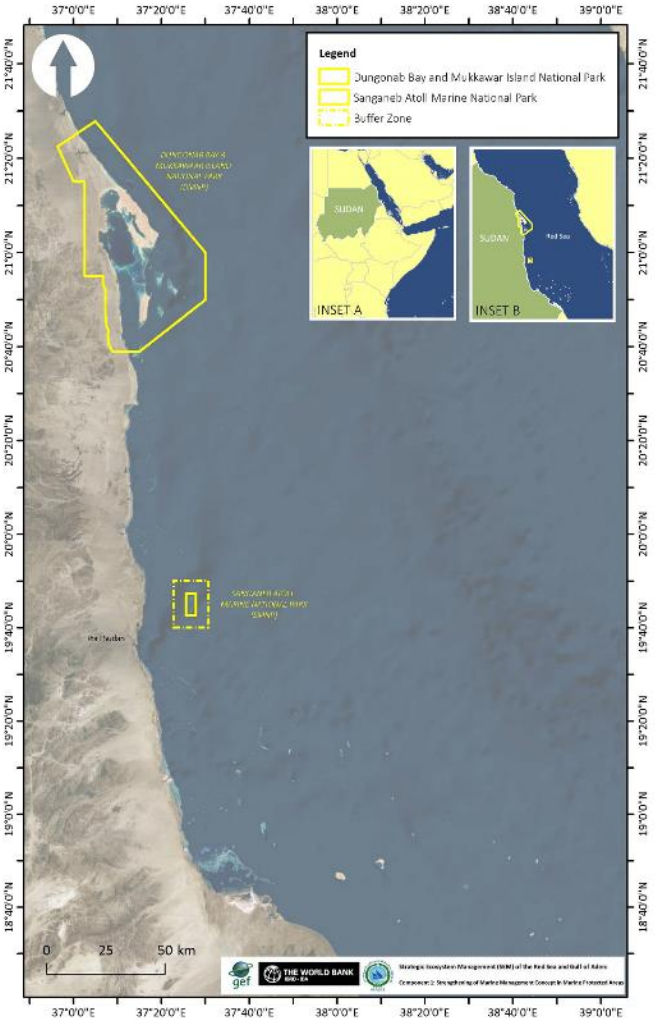


Figure 1: Map showing the location of Sudan's two national parks, Dungonab Bay and Mukkawar Island National Park (DMNP) and Sanganeb Marine National Park (SMNP).

2. Project partnerships

The project had two key national partners at the outset, which included SUDIA, a Sudanese NGO and the Wildlife Conservation General Administration (WCGA). As reported in AR2, the project prepared two new Memorandum of Understanding (MOU) with the Red Sea University (RSU), which is based in Port Sudan, and with the Governor of the Red Sea State. The role of each of these partners in the project is described below:

- **SUDIA**: Founded in 1996, SUDIA (Sudanese Development Initiative) is a pioneering Sudanese non-governmental organization working with a broad cross-section of stakeholders for greater stability, development, and good governance in Sudan by enhancing livelihood, reducing violence, empowering youth and advancing the role of the media and civil society. The role of SUDIA in the project is to provide logistical support to facilitate the work in country, particularly related to livelihoods, but also in relation to animating workshops and training sessions. Like many ngos working in Sudan, SUDIA has continued to face a number of political challenges, which have prevented them from being able to operate freely in the Red Sea State (RSS) where the project is based. This was one of the reasons why the project needed to establish new formal partnerships with other organisations based in the RSS to help provide logistical support and facilitate the field work.

- **The Wildlife Conservation General Administration (WCGA)**: The WCGA is the Sudanese government authority legally mandated with the responsibility for the management of nationally declared terrestrial and marine protected areas in Sudan,

including Dungonab Bay and Mukkawar Island National Park and Sanganeb Atoll Marine National Park. The WCGA is therefore a key partner and their involvement in this project will help secure the long-term legacy. The WCGA are also responsible for facilitating and providing logistical support for field operations. As such the WCGA are also the main project beneficiary for the capacity building and capital investments that the project is making in the MPAs. There was an ongoing dispute with regards the role of the WCGA in the management of these MPAs, which was resolved in 2016. Since then the Federal level WCGA and the Government of Sudan has been increasing the resources available to the Red Sea State WCGA. These additional resources have allowed the WCGA to employ and train more rangers. The WCGA still has very limited resources (e.g. computers, radios) which means that monitoring, control and surveillance activities have been limited until recently.

- **Red Sea University (RSU)**: A new Memorandum of Understanding (MOU) was signed with the RSU on 25th February 2016. This MOU served to formalise pre-existing arrangements with the staff at the University in relation to training and field work. The MOU specifies the arrangements related to training of RSU students / staff (e.g. coral reefs, elasmobranchs, ecotourism), equipment, data sharing, and publishing of scientific results.

- **Red Sea State (RSS) and RSS Ministry of Tourism and Environment (RSS-MTE)**. Following the meetings held in 2016, a new MOU was prepared by the DI team with the RSS and submitted to the Governor of the RSS on 25th February 2016. The MOU defines the area of partnerships between Cousteau and the RSS with regards the working arrangements for the community based livelihood activities planned for implementation under the DI project. The MOU has not been signed to date, the reasons for which remain unknown.

3. Project progress

The most significant news during the past year has been the successful inscription of the Sudanese marine protected areas as the first marine World Heritage site in the Red Sea and Gulf of Aden. The DI project greatly contributed to this success. However, working in Sudan remains very challenging and it has been difficult for many national and international NGOs, because of the wider political context of the country. For example, many national and international NGOs that were formally operating in Sudan or in the RSS no longer have permission to work in the country (e.g. ACORD, Oxfam). The situation is further complicated by the lack of clarity in the mandate of Federal versus State level authorities with regards these types of arrangements.

The DI project partners have continued to be challenged by administrative and bureaucratic issues and it has not been possible for the project to obtain the permits needed for staff to go into the field from the maritime security services. As a result of this, it has been necessary for the Cousteau Society and SUDIA, the national partner NGO, to find alternative ways to implement the project activities. This has been achieved through working in partnership with other organisations including: Sudanese National Man and Biosphere Committee to UNESCO, The Regional Organisation for the Protection of the Red Sea and Gulf of Aden (PERSGA) and the Sudanese Environment Conservation Society (SECS). These types of arrangements has taken time and was the reason why the project requested another 6 month no-cost extension.

3.1 Progress in carrying out project Activities

The following report describes progress on the Darwin Initiative project “Strengthening marine protected areas and marine ecotourism benefits in Sudan” from April 2016 to March 2017. The successful inscription of the Sudanese marine protected areas as a UNESCO World Heritage serial site has been one of the crucial outcomes of the past year. While the Sudanese Man and Biosphere (MAB) Committee to UNESCO was responsible for leading this important national process, the DI project provided significant technical support and data for use in the preparation

of the official documents. The DI project also organised a workshop in Paris at UNESCO HQ in February 2016, which provided the opportunity for national, regional and international partners to share information and discuss the outstanding values of the area and scientific partnerships. The official documents were submitted after this workshop and the parks were inscribed as a UNESCO marine World Heritage site, in July 2016. As this is the first marine World Heritage site in the Red Sea and Gulf of Aden it has raised the international and regional profile of these important marine protected areas and the large buffer area between the two, thereby significantly contributing to the goal and outcomes of the DI project.

Despite these successes, the DI project team has continued to face issues with regards field access in Dungonab and Mukkawar Island National park, as explained in previous reports (HYR1, AR1, HYR2, AR2 and HYR3). The team has continued to work hard to find solutions to resolve this critical issue. In addition to the original MOU with the Wildlife Conservation General Administration (WCGA), new MOUs were prepared to formalise arrangements with the Red Sea University (RSU) and the Red Sea State (RSS). The MOU with the RSU formalised the arrangements for the implementation of the scientific activities planned under the DI project. The MOU with the RSS formalised arrangements for the community based livelihood activities, through a specific partnership with the RSS Ministry of Tourism and Environment (RSS-MTE). Both MOUs included training components for both RSU and RSS-MTE staff and arrangements for equipment, data sharing, and the publishing of scientific results. Both the Governor of the RSS and the Dean of the RSU were confident that these MOUs would help resolve the security issues the project has been facing. The MOU with the RSU was signed in Paris in February 2016. The MOU with the RSS was not signed for reasons which remain unclear and the security issue remains unresolved.

Tarik Chekchak visited Sudan between 12th-16th October 2016. During this visit, he met with the new Director for the WCGA in Khartoum, the Sudanese MAB Committee, the British High Commission, the Future University. SUDIA organised a meeting with the security in Khartoum for Tarik Chekchak during which assurances were made that the matter would be resolved in the coming weeks. A second meeting with the head of security in Port Sudan was also arranged via their headquarters in Khartoum, during which SUDIA staff were assured that Port Sudan security was working closely with Khartoum on this issue. They were told that the obstacles would be addressed in the coming weeks. The situation has not changed since then.

As a result of this issue, the project has had to find alternative ways to implement some of the project activities through other organisations as explained below.

Output 1:

The following provides an update on progress on the activities implemented between April 2016 and March 2017.

Activity 1.1. Community Visioning Workshop (x1) held with a broad group of stakeholders (local community members, businessmen, state and federal government officials), and communications on progress maintained through Output 4.

The situation with regards the visioning workshop remains unchanged since AR2. The First Meeting of the Advisory Committee for the Conference on the Future of Sudan's Marine Protected Areas (MPAs) was held on 5th July 2015 (**21-019 Output 1.1_01**). The Second Meeting of the Advisory Committee for the Conference on Future of Sudan's MPAs was held on 20th September 2015 (**21-019 Output 1.1_02**).

While no further official meetings have been held since then, there have continued to be meetings with both national and international partners that have provided the opportunity to continue discussions and coordinate activities. These have included meeting between the national partners (SUDIA and WCGA) and meetings between international partners (e.g. meeting in Paris at UNESCO HQ in February 2016 **21-019 Output 4.4_02** and meeting at the Arab Regional World Heritage Centre in Bahrain in May 2017, and **21-019 Output 4.4_03**).

One of the outcomes of these types of national meetings was the logo competition that was run to create the official logo for Sudan’s Marine National Parks. The local partner SUDIA, working

in partnership with the Wildlife Conservation General Administration (WCGA) and the Federal Ministry of Tourism, Antiquities and Wildlife, launched a logo competition in Sudan (see **21-019 Output 1.1_03**). The competition ran between 31st October to 16th November 2016, and received 186 logo design submissions.

All logos were reviewed by a National Selection Committee, composed of members of the WCGA, including the Director of WCGA and the General Manager of National Parks and the MPAs. The winning design was selected and announced on 24th November 2016 (see **Figure 2 and 3**). The logo was designed by a 28-year old Sudanese designer, Andrie Noviantoro S. Ikom and they were awarded a prize of 345 USD. The winning logo design will now be used on all the publications and promotions, including online, print, and merchandise, helping to create a brand to promote the national parks and their conservation to people all over Sudan and the world.

Figure 2: New logo for the Sudan Marine National Parks featuring key wildlife and the iconic Sanganeb lighthouse, created by Andrie Noviantoro S Ikom.

Figure 3: Mock ups showing how the new Sudan Marine National Parks logo could be used to create the brand identity, as a window sticker, 3D wall logo and on a t-shirt.

Activity 1.2. Existing park building in DMNP renovated to act as both a Ranger Station (an office, accommodation, and basic research facilities) and a Visitors Centre to act as the hub for nature-based ecotourism activities.

Following the field visit described in the AR1, a committee comprised of SUDIA Project Operations Officer, a representative from the WCGA and an engineer from the Ministry of Interior reviewed proposals for the renovation of the WCGA headquarters in Mohammed Qol and they selected the winning bid for this work. A contract was drawn up and the work was scheduled for Q2/2015 (**21-019 Output 1.2_01**). The work was put on hold pending the resolution of the security issues but was expected to commence in Q1/2016.

After then, as reported in AR2, the WCGA then secured additional funds from Federal government to commence some of the renovation works (e.g. cleaning the building, renovating the walls, purchasing a new smaller more cost efficient generator, and the establishment of an office, with a desk and a chair). During the past year, the PERSGA Strategic Ecosystem Based Management (SEM) project has also provided additional funding to complete the renovation.

The WCGA HQs in Mohammed Qol are now fully functional. The buildings are repaired and equipped with solar panels, with battery backup, new larger capacity water storage tanks, with solar powered pumps to supply the newly equipped kitchen and bathroom facilities. The facilities can comfortably accommodate two WCGA Officers and 10 WCGA rangers on a two-week rotation (**Figure 4**). The PERSGA SEM project also funded the construction of 5 new outpost buildings for rangers in DMNP (**Figure 5**) and has started the renovation of an old school in Mohammed Qol to act as a visitors centre (**Figure 6**).

Figure 4: WCGA headquarters which were renovated during 2016-2017 (Photo R. Klaus).

Figure 5: WCGA outputs which were constructed during 2016-2017 (Photo R. Klaus).

Figure 6: The old school in Mohammed Qol that will be renovated to create a visitors centre (Photo R. Klaus).

In October 2016, the project manager Tarik Chekchak met the new director of WCGA and he requested that the DI project consider reallocating the budget for the renovation works to cover capital cost investments in surveillance, safety and communication equipment (e.g. life jackets, first aid kit, boat box with basic tools and flares, VHF radios, GPS).

The DI project team has prepared and fully costed a detailed list of equipment, and the list has been discussed in detail with the Director at WCGA and the General Manager for MPAs and agreed. This was also done in consultation with PERSGA SEM during a recent partnership meeting in Bahrein. The DI Project is preparing a formal change request to ask permission to reallocate part of the building capital costs towards the purchase of these equipment.

Activity 1.3. Procure two small vessels and other equipment needed for monitoring, control and surveillance in existing 2 MPAs, and facilitate related training (skipper licence and permits).

Quotes for the purchase of two (2) semi-rigid inflatable boats equipped with outboard engines (**21-019 Output 1.3_01**) were solicited and an Egyptian vendor was selected. A purchase order was issued with delivery of the boats scheduled for Q2/2015. The purchase order was then temporarily placed on hold due to the security issue. The WCGA subsequently requested a change in the specifications of the boats. They expressed their preference for a fibre-glass boat with outboard engines, as these are made in Sudan, would require less maintenance than the semi-rigid inflatables and the WCGA Officers are already familiar with these types of boats. A new quote was requested and a purchase order prepared (**21-019 Output 1.3_02**). The new specification was more expensive than anticipated and it was only possible to purchase one of the boats and an engine. This boat has now been delivered to the WCGA in Port Sudan (see **Figure 7** and **21-019 Output 1.3_03)**. The PERSGA SEM project has now also ordered a second boat for the WCGA this will be delivered in June 2017.

As with Activity 1.2, the DI project team would like to reallocate part of the remaining budget that was intended for the boats to cover the purchase of additional surveillance, safety and communication equipment (e.g. life jackets, first aid kit, boat box with basic tools and flares, VHF radios, GPS). A specific list of required equipment has been prepared and discussed with the WCGA and PERSGA SEM project coordinator, and a formal change request will be submitted accordingly.

Figure 7: The new boat purchased for the WCGA and delivered in October 2016.

Activity 1.4. Update zoning plan for DMNP on the basis of the community visioning workshop and scientific surveys and identify key biodiversity hotspots for consideration as new MPAs for inclusion in MPA Network.

The existing zoning plan for DMNP from 2004 was discussed with the local communities in 2015. At the same time, additional participatory mapping of both local knowledge and resource use patterns was completed including the mapping of critical habitats such as the location of grouper spawning sites. A new zoning plan for DMNP was prepared using these information. The current version of the zoning plan now needs to be updated to integrate the scientific data, such as the data recently recovered from the VR2W monitors and other sources.

For example, there is also new information arising from studies recently completed by the RSU. An RSU staff member and PhD student have been working with the fishers communities in DMNP to refine the location and status of the grouper spawning aggregations within DMNP. This work has been completed with funding from the PERSGA SEM project. The fishers have indicated that they may agree to one or more of these grouper spawning aggregation sites being included in the zoning plan as a temporarily or permanently closed area.

During this year, WCGA issued a specific request to ask Cousteau to help them prepare a new proposal to justify the inclusion of Sha'ab Rumi as the third MPA in Sudan. This reef is part of the buffer area of the World Heritage property. A draft proposal was prepared and submitted to the WCGA for consideration (**21-019 Output 1.4_01**). The WCGA also asked for assistance in updating the zoning plan for the whole World Heritage site. This work is now in progress and will be completed in the next 3-6 months.

The DI project team would like to reallocate a small part of the remaining fieldwork budget to fund the RSU staff and PhD student to conduct additional consultation work on the final zoning plan, as the team do not currently have direct field access in DMNP.

Activity 1.5. Meeting with WCGA Officers at the start and end of the project to complete MPA Management Effectiveness Assessments (using WWF-World Bank Scorecard method or equivalent).

The staff of the WCGA were trained in how to complete the WWF-GEF MPA Scorecard assessment for management effectiveness (Staub and Hatziolus, 2004) in January 2015. The staff completed the MPA Scorecard for DMNP and SMNP. The MPA Scorecard was completed by DI Project team in January 2016 and February 2017 in consultation with the WCGA and the combined results are presented in an updated report, **21-019 Output 1.5_03**.

The results of the MPA management effectiveness assessment show a upward trend in the overall score across all 3 years. The overall score doubled between 2015 and 2016, increasing from the baseline score of 21% in January 2015 to 42% in January 2016. During this year, there were increases in each of the six key management processes, with the greatest gains achieved in 'Planning' and 'Inputs', while the lowest gains were in 'Outcomes'.

The overall score has continued to increase between 2016 and 2017, increasing from the previous score of 42% in January 2016 to 52% in January 2017. Again there were improvements across all six key management processes, see **Figure 8** and **Annex 4 21-019 Output 1.5_03**.

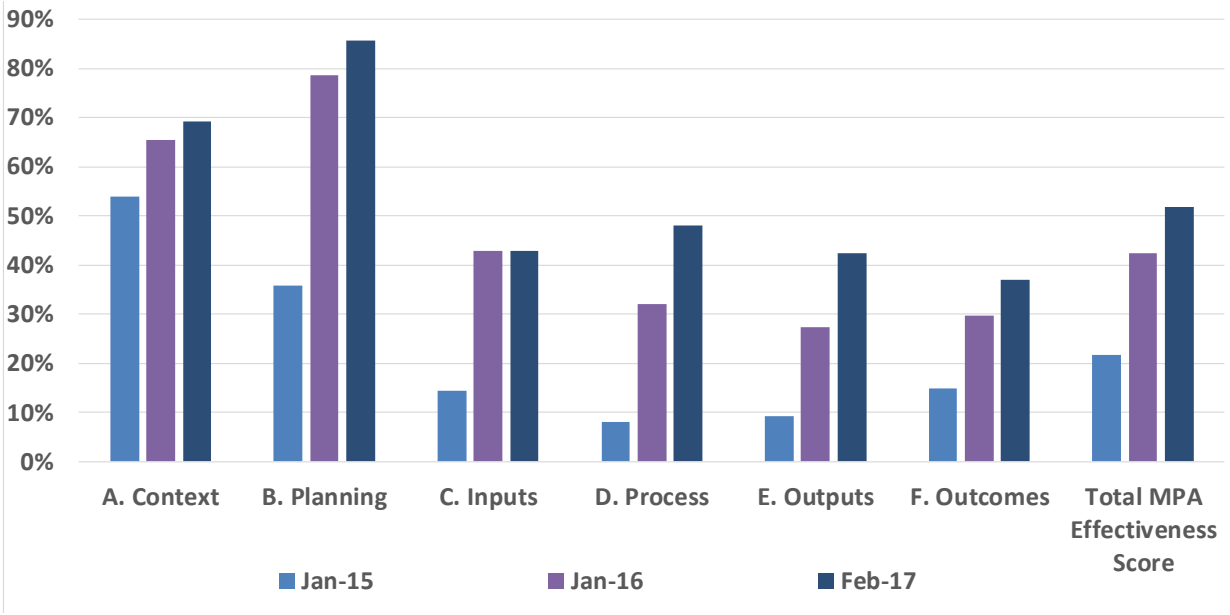


Figure 8: Graph showing the changes in the WWF-MPA Scorecard Assessment results for DMNP for 2015, 2016 and 2017.

Output 2

The following provides an update on progress on the activities under Output 2 between April 2016-March 2017.

Activity 2.1. Acoustic monitor array deployment inside DMNP and Sanganeb MPA and flagship elasmobranch species tagged.

As explained in previous reports, additional acoustic telemetry equipment and tags were procured and shipped to Sudan. The equipment has remained in storage as the RSU has not managed to obtain the security permits to enable the DI project team to undertake the field visit, despite the MOU (**21-019 Output 2.1_01**) which was intended to facilitate this activity.

As previously reported in AR2, the project planned to conduct a field phase in Q2/2016, to recover, service and re-deploy the existing VR2W monitors and tag animals. During the field phase, staff from the University of Windsor, Cousteau, The Deep Aquarium were to work with and train students and staff from the RSU in fish tagging techniques and how to maintain the monitors (as well as other activities such as coral reef monitoring).

The DI project team has had to lower their expectations with regards this activity as it appears that it will not now been possible to implement this activity within the project timeframe. As explained in Activity 2.2 (below), the existing monitors have now been recovered, the data has been downloaded and transferred to the University of Windsor team for analysis. The other equipment that was purchased under the project has been transferred to the RSU.

2.2. Continuous data derived on spatial movements, residency, home range and migration patterns of focal flagship elasmobranch species through telemetry techniques.

The DI project has not able to fully implement this activity. As described under 2.1, the plan was for this activity to be implemented jointly by the DI project in partnership with the RSU as per the MOU that was signed on 25th February 2016 (**21-019 Output 2.1_01**). As it has not been possible for the DI project team to secure permission to access the field, the team has focussed their effort on ensuring that the existing VR2W monitors previously deployed inside both parks and on the offshore reefs were recovered and the data safely retrieved.

There were 14 monitors that had previously been recovered by two of the dive operators and were in storage on their boats in Port Sudan (Don Questo and MY Elegante). These monitors were collected from the dive boats in February 2017 (see **Figure 9a**), the data was then

downloaded, and transferred to the University of Windsor for post-processing and analysis. The monitors were then deposited at the RSU.

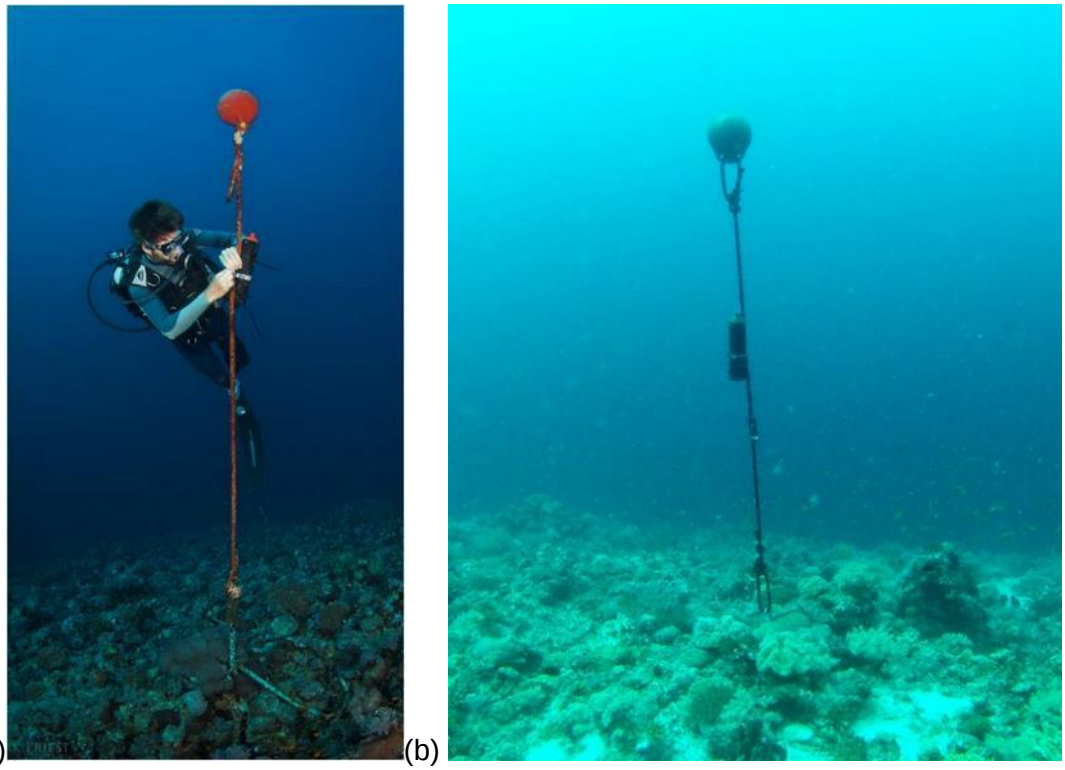
To recover the other monitors from the 'manta array' that was set up in DMNP (see **Figure 10**), the DI project team sub-contracted the RSU staff. Dr Moamer Eltayeb and three of his colleagues from the RSU spent 5 days in the field recovering the 20 VR2W monitors in April 2017 (see **Figure 9b**). The 20 monitors were collected from the RSU and the data downloaded. It was only possible to download the data from 10 of the 20 monitors; the remaining 10 monitors did not respond properly when a new battery was inserted. The data from the 10 working monitors were transferred to the University of Windsor for post-processing and analysis and the monitors deposited at the RSU. The 10 non-functioning monitors will now be sent to Canada for repair.

Preliminary analysis of the data from these monitors include the repeated detection of hammerhead sharks that were tagged in 2013 at Sha'ab Rumi and Sanganeb. One of these animals was regularly detected around the same reef, suggesting it was highly resident. Another one of these animals, that was tagged on Sanganeb Atoll, was more mobile and was detected to have moved further south and then north again. Other animals detected included the manta rays tagged inside DMNP and at other locations. Further details on the results of the acoustic telemetry work will be prepared in advance of the next half year report.

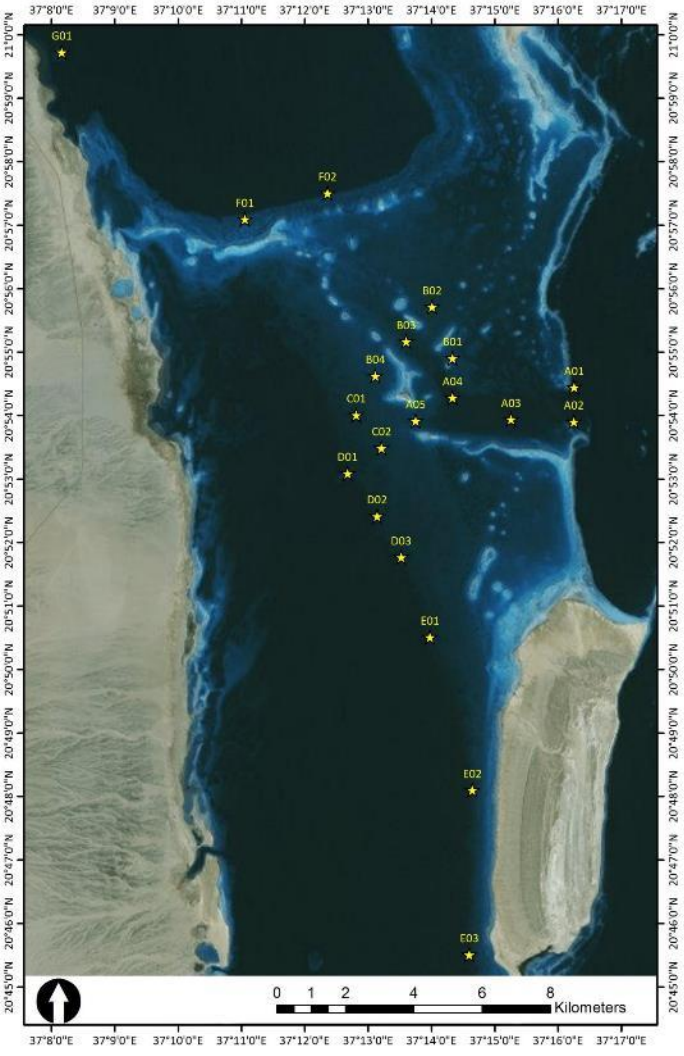
(a)

(b)

Figure 9: Photographs of the recovered monitors (Photos R. Klaus and M. Eltayeb)



(a) (b)



(c)

Figure 10. VR2W monitors deployed in DMNP and map showing the distribution of the monitors

Activity 2.3. Training of Sudanese partners in telemetry field methods for elasmobranchs (x 3), telemetry array maintenance and data download and organisation.

As explained under 2.1 and 2.2 above, it has not been possible to provide the training in acoustic telemetry techniques to students / staff at the RSU as agreed in the MOU that was signed on 25th February 2016 (**21-019 Output 2.1_01**), due to the project team not being given permission to access the field.

A short (½ day) training was provided to RSU staff in April 2017 by Dr Rebecca Klaus. This training covered the basics as to how to replace batteries and download the data from the VR2W monitors. More in-depth training is required if the RSU staff are to be able to make proper use of this equipment in the future. The project team is concerned about this activity, as it does not now anticipate being able to deliver this training under the current project.

Activity 2.4. Data compilation, analysis and reporting of elasmobranch movement data (telemetry).

The data on manta ray movement patterns that were obtained from the satellite tagged mantas has been analysed. Since the AR2 report, a new paper has been submitted and accepted for publication in PlosOne, pending minor corrections (the publication will be submitted to LTS once the corrections have been completed). Maps showing the distribution of manta derived from the state-space models used in this paper are shown in **Figure 11.**

The data from 23 of the 33 VR2W bottom monitors has been downloaded and transferred to the University of Windsor team for post-processing and analysis. The 10 remaining monitors have been sent back to Canada for repair. Once these monitors have been repaired and the data recovered the data will be analysed and another paper prepared summarising the findings of the study.

Activity 2.5. Training of Sudanese staff member to liaise with regional dive industry over Divers Aware of Sharks monitoring project.

The Sudanese staff member was identified and employed until May 2015. The TOR for this staff member is provided in **21-019 Output 2.5_01**. His contract was suspended when the obstacles presented themselves and an alternative more senior SUDIA staff member has been fulfilling this role in the interim in order to assist in resolving the issues with security supported by a part time staff member based in Port Sudan.

One of the dive masters from the local dive operators and a PhD student from the RSU have now been tasked with the responsibility for supporting these activities.

Activity 2.6. Data compilation, analysis and reporting of DAS monitoring surveys.

Only one of the dive operators has continued to collect data for the DAS surveys during this last year. This is certainly partly due to the DI project not being able to deploy their staff into the field to provide the dive operators and new dive masters with the training and support needed.

A Master student from the University of Cardiff (UK) compiled the existing DAS data to 2012 he completed and was awarded his MSc. The data from 2012 to 2017 was obtained from the dive operators in February 2017 and these data have now been organised and analysed. The initial results are presented in **21-019 Output 2.6_01**.

Activity 2.7. Training of WCGA Officers / students in SCUBA diving.

4 x WCGA Officers and 3 x students from the RSU were trained in SCUBA diving. The training was completed in October 2015, and all students have been certified as PADI open water divers. Photographs of the training are provided in **21-019 Output 2.7_01** and the training certificates in **21-019 Output 2.7_02**.

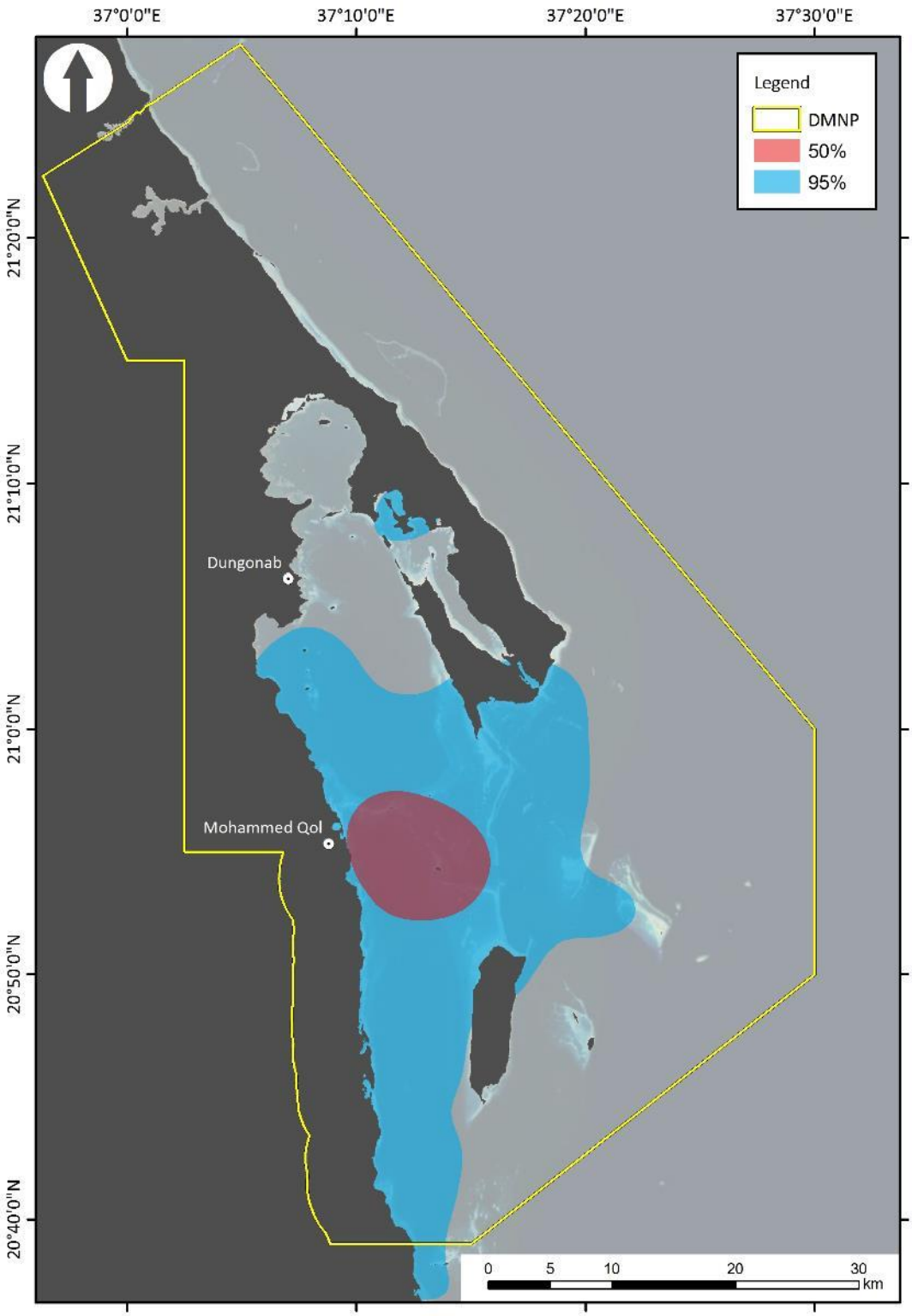


Figure 11: Manta ray Kernel Utilization Distributions (KUD) home-ranges, 50% (red) and 95% (blue), for total manta ray detections (a), manta 1 (b), manta 2 (c), and manta 3 (d), relative to the designated boundaries of the Dungonab Bay/Mukkawar Island Marine National Park. (Source: Kessel et al. accepted by PlosOne pending corrections)

Activity 2.8. Training of Sudanese partners in coral reef monitoring survey methods (Cousteau Divers, Reef Check) and field surveys (x 3) to implement monitoring.

A skills assessment identified the training needs in relation to coral reef monitoring: training in species identification (corals, seagrasses and other benthic organisms including macroinvertebrates), data handling and management and data analysis techniques. An initial training to start to cover these skills gap was scheduled for RSU staff Q2 2016. Due to issues with regards field access it has not been possible to run this training. So, the situation remains unchanged since AR2.

Activity 2.9 Data compilation, analysis and reporting of coral reef monitoring surveys.

Archive field data have been compiled and catalogued. Although not specifically mentioned in the DI project document, this work has variously included transferring the old video survey data that was stored in on Hi8 and microCV tape format into digital formats to ensure that they are more easily accessible and organising the other datasets.

Activity 2.10. Preparation of geodatabase to consolidate existing and new monitoring datasets (e.g. DAS data, telemetry data, coral reef monitoring etc), and satellite derived environmental characteristics (e.g. sea surface temperature, chlorophyll) providing the basis for spatial planning and re-zoning of DMNP.

A geodatabase has been prepared and the process of populating the geodatabase with the archived coral reef monitoring data and other spatial datasets has been completed. A time of series remotely sensed satellite data showing different environmental has also been prepared. These datasets were used in the preparation of the Final Draft Management Plan for Dungonab Bay and Mukkawar Island National Park, which was completed in 2016 (Klaus 2016).

An introductory training course in the freeware software QGIS was delivered at the Future University in Khartoum (**21-019 Output 2.10_01**). A second training course in the spatial decision support software Marxan was delivered in March 2017 (**21-019 Output 2.10_02**). This training was jointly funded by The Intergovernmental Authority on Development (IGAD) in Eastern Africa and it was attended by 25 participants from 6 IGAD countries including government officials from 14 separate institutions, and representatives from 3 universities in Sudan. There were 16 trainees from Sudan, representing 10 different institutions including 6 government authorities (Ministry of Physical Planning and Infrastructure, Ministry of Irrigation, Ministry of Agriculture and Forestry, Sudanese Meteorology Authority, Forestry National Corporation, Ministry of Environment and Natural Resources) and 3 universities (University of Khartoum, Future University and Red Sea University) and one NGO (SUDIA). The Marxan training course was well received, as shown by the post-course evaluation questionnaires presented in **21-019 Output 2.10_02.** In addition to this, it also raised the profile of Sudan, as it was the first time that IGAD had to have such an event in Sudan.

Output 3.

The following provides an update on progress on the activities under Output 3 between April 2016 and March 2017.

Activity 3.1 Field visit to refine outcomes from previously completed coastal livelihood assessment in the two villages in DBMP (Mohammed Qol and Dungonab).

A field visit was completed by four people and the project operations officer and project director in January and February 2015. This resulted in the preparation of a document that summarised the livelihood options discussed with local communities (**21-019 Output 3.1_01**). The report prepared from the DI project was shared with the PERSGA SEM project in order to encourage collaboration and coordination of livelihood activities inside DMNP.

Activity 3.2 Prepare business plans for nature-based ecotourism livelihood opportunities that are both equitable and gender balanced & Activity 3.2B 4 days training in ecotourism strategy

As our DI project is focussed on increasing benefits to local communities through ecotourism, a specialist consultant (Dominique Verdugo) was recruited to assess the potential and to develop business plans for nature-based ecotourism livelihoods (**21-019 Output 3.2_01**). The tourism

consultant ran a 4-day Sustainable Tourism Training Workshop between 20th to 23rd March 2016 at the El Khabeer International Conference Hall of the Red Sea University in Port Sudan (**21-019 Output 3.2_02**). The workshop was attended by a total of 24 participants and the course materials delivered are presented in **21-019 Output 3.2_03**.

The tourism consultant spent time in Port Sudan and visited the Red Sea University Aquarium, the Red Sea Museum of Heritage & Antiquities, the corniche in front of the port and the sea front near the Sigala fish market with its restaurants, craft vendors, and boat excursions. The tourism consultant met with dive operators during her visit, and discussed the possibility of the dive operators joining forces and the setting up an umbrella organisation or an association so that there is 'one voice' through which they can communicate with the Sudanese authorities.

The DI project plan was for the ecotourism consultant to return to Sudan to work with a staff member from the RSU (Dr Nahid Osman) to further develop specific ecotourism business plans. The DI project team requested the assistance of the RSU in obtaining an official invitation letter for the consultant. When it became clear that the RSU was not going to be able to produce this letter, the DI project team requested the assistance of the Sudanese National MAB Committee to UNESCO. The Sudanese National MAB Committee were also not successful in obtaining an invitation letter. Tarik Chekchak then wrote to the RSS-MTE and asked them for an official invitation letter for the tourism consultant. To date, the DI project team has still not been able to obtain the official invitation letter to allow the ecotourism consultant to visit the field.

The DI project team has continued to maintain close communications with the dive operators over the past year and has continued to discuss the ecotourism guidelines and the formation of a dive operators association. The DI project team has also been coordinating with the PERSGA SEM project on the livelihood activities that they have started to implement in DMBP (see Activity 2.4). The PERSGA SEM project expressed their willingness to collaborate with the DI project with regards the development of ecotourism related activities within the RSS and in particular with regards to the two glass bottomed boats that the project has purchased. The glass-bottomed boats are due to be delivered in July 2017. The PERSGA SEM project has also installed a new jetty in Dungonab so that the glass bottomed boat can be accessed during low tide (a new jetty was already installed in Mohammed Qol). The PERSGA SEM project does not currently have sufficient funding to recruit an ecotourism consultant to develop the business plans for the glass bottomed boat activities, and they would like to work together with the DI project on this activity. It is anticipated that this activity will commence in Q2 and Q3/2107.

Activity 3.3 Develop ecotourism guidelines and deliver training to familiarise WCGA rangers, dive operators and local community representatives with guidelines.

The DI project team developed a series of draft ecotourism guidelines for manta rays, sharks, dugongs, sea turtles (examples of the drafts provided in **21-019 Output 3.3_01, 21-019 Output 3.3_02, 21-019 Output 3.3_03**). These were submitted to a design agency and the final draft of the illustrated product is provided in **21-19 Output 3.3_04** and **Figure 12** shows examples of the cover pages from these illustrated guides. There are a few corrections that still need to be made, but it is anticipated that they will be going to print in June/July 2017.

Dr Rebecca Klaus met two of the locally based dive operators in February 2017 to discuss the draft guidelines and to get their feedback. During this meeting, the dive operators expressed their interest in the guidelines and said that they would be useful. During this same meeting, the dive operators expressed their concerns about the increased number of Egyptian dive boats that had been licenced to operate in the Sudanese Red Sea during the past year. The dive operators explained that the locally based dive boats have all operated under a set of informal rules that they have followed for many years. The new boats are not obliged to follow these 'informal' rules, which is causing a number of problems. For example, while the local boats always try to anchor on sand away from the actual dive sites, then deploy their clients to the dive sites by using smaller tender boats; the Egyptian boats tend to anchor directly on top of the dive sites, and then deploy divers directly from the back of the boat instead of using tenders. The repeated anchoring of these larger dive boats directly on the dive sites is causing two main problems. First, the indiscriminate anchoring on the dive sites is causing physical damage to the coral reef, as the anchors break the corals. Second, anchoring directly on the

dive sites is disturbing the animals, such as sharks, so when the divers enter the water they are not seeing the large number of animals that were otherwise present.

The locally based dive operators reiterated their interest in forming an association of dive operators and creating formal rules for the association. The DI project team would like to help the dive operators in this process by reallocating a small part of the remaining budget towards setting up a website. The website would be linked to the MPA website and would provide a permanent online presence for the ecotourism guidelines developed under the project.

Activity 3.4 Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).

As mentioned under Activity 3.2, the DI project team has been coordinating with the PERSGA SEM project on livelihood activities inside DMNP. The livelihood activities commenced under the PERSGA SEM project include: (i) the renovation of the women's centres in both villages and provision of equipment for establishing bakeries (e.g. ovens, fridges, and other kitchen supplies), (ii) the renovation of the fishermen association buildings and establishment and equipping of workshops for boat repairs, (iii) provision of 80 goats (40 per village) for milk production, and (iv) the procurement of two glass-bottomed boats, one for each village.

The DI project is in discussion with the PERSGA SEM project as to how the project can collaborate to the support the ecotourism activities.

Activity 3.9 Monitoring of the economic value of the dive industry (number of boats and tourists) and tourist numbers engaging in IGAs.

Since the last report AR2, one of the locally based dive boats, Maria Cristina who operates La Dolce Vita, ran the first sea/land safari in February 2017. The DI project team has been working with her remotely to help support the development of this activity.

Figure 12: Some examples of the cover graphics prepared for the ecotourism guidelines.

Output 4:

The following provides an update on progress on the activities under Output 4 between April 2016 and March 2017.

4.1 Sudanese staff recruited and trained to lead day-to-day project activities and communications with stakeholders.

During the past year, SUDIA has employed two new members of staff (Lisa and Nubia) to work on the communication and awareness raising campaign. Over the past year, Lisa helped finalise the website, with technical input and support from Rebecca Klaus. Lisa also helped Tarik Chekchak source photographs from Sudanese photographers to be included in the new poster exhibit. Since the poster exhibit was first displayed there have been numerous requests from other organisations to have the exhibit on loan. Lisa and Nubia have been organising the setting up of the poster exhibit at several different venues in Khartoum.

4.2 Bi-annual Project Steering Committee meetings for Darwin Project to discuss project progress and monitor delivery.

The SUDIA Director, Abdel-Rahman El Mahdi and a senior staff member Ahmed Hanafi held Steering Committee meetings with relevant stakeholder to discuss the organisation of the conference. It has not been possible for this activity to be continued given the constraints placed on SUDIA in terms of their ability to operate freely in the RSS.

Activity 4.3 Preparation of bi-annual Darwin Initiative Project reports.

This report constitutes the projects third end of year report (AR3).

Activity 4.4 Annual Stakeholder Workshops held with a broad group of stakeholders to keep them up to date on Darwin Initiative project findings (x3)

Please see Output 1, Activity 1.1, and refer to **21-019 Output 4.4_01** and **21-019 Output 4.4_02** for the meeting report from the UNESCO Workshop, and the meeting report from the Arab World Heritage Centre in Bahrain **21-019 Output 4.4_03.**

Activity 4.5 Prepare a poster summarising key project outcomes for distribution to dive operators and other organisations in Red Sea State of Sudan.

A poster was prepared explaining about the MPAs in Sudan (**21-019 Output 4.5_01**). There were 10 copies of this poster printed and distributed to key stakeholders in Sudan. A copy was also given to the representatives from the British Embassy in Sudan in October 2015.

The Cousteau Society has prepared a new map of the World Heritage site has been prepared as part of a new poster exhibit (see Activity 4.7 below and **21-019 Output 4.5_02**).

A new poster about the project is now in preparation as part of the Communication Campaign.

Activity 4.6 Prepare scientific paper(s) for submission to peer-reviewed journals and present findings at international conference.

The project has already published two scientific papers, and a book chapter. A third paper has been accepted by PlosOne pending corrections and fourth paper is in preparation. The first paper was a short correspondence in Nature in October 2014 (**21-019 Output 4.6_01**) highlighting the issues facing the conservation of biodiversity in politically unstable regions, resulting from conversations with Wildlife Conservation General Administration staff in Khartoum (May 2014). The second paper was a review on animal telemetry in the aquatic environments. (**21-019 Output 4.6_02**). The third and fourth paper, presents the initial findings from the manta ray tagging studies within DMNP. These will be submitted once the papers have been accepted.

Activity 4.7 Prepare media statements and popular articles to communicate interesting findings/actions to national, regional, and international newspapers and TV.

An initial press release was prepared and shared with key media. A radio interview broadcast was organized with one of the local FM Radio channels in Khartoum State. The BBC and Aljazeera, and the BBC Natural History Unit were interested to cover the fieldwork. Due to the

issue with field access this has not been pursued. A leaflet presenting the project in English and Arabic was prepared and distributed to key stakeholders (**21-019 Output 4.7_01**).

Over the past year the Cousteau Society prepared a short educational video (**21-019 Output 4.7_02**) and poster exhibit (**21-019 Output 4.7_03)**, both of which highlighting the important marine biodiversity found in Sudan, the MPAs and the new international World Heritage status.

The educational video was initially launched on the Cousteau Vimeo page and it will now be relaunched on the new dedicated MPA Vimeo, facebook page and website. The DI project team has also started communications with the international (e.g. FlyDubai, EgyptAir and Nileair) and other domestic airlines that land in Port Sudan to see if they would be willing to show the educational film before landing.

The post exhibit, which is entitled "*The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site",* includes photographs from the Cousteau Society archives, from diving tour operators working in Sudan, as well as photographs by Sudanese photographers.

The poster exhibit was first displayed at the Corinthia Hotel in Khartoum, Sudan alongside another scientific event that was being organised by UNESCO (see **Figures 13, 14 and 15** and **21-019 Output 4.7_04**). Since then, several different organisations have requested the poster exhibit on loan to accompany other events.

SUDIA has organised the display of the poster exhibit and showings of the video at a number of other events including World Wildlife Day, UNESCO MAB/IGGP Seminar, Women in Environment Forum, and Khartoum American School Science Fair. A total of over 800 people viewed the exhibit during this reporting period (**21-019 Output 4.7_05**).

The poster exhibit is being transferred to Port Sudan in May where it will be exhibited during the first regional conference on the protection of the marine environment, which is being organised by the Federal Ministry of the Environment Physical Planning and Development.

In addition to this, the Sudanese Environment Conservation Society (SECS) has implemented an education and outreach activity, to increase awareness of the new World Heritage status among the local communities within DMNP (see **Figure 16** and **21-019 Output 4.7_06**).

SUDIA has also prepared a Communication Campaign document to consolidate the existing efforts and set out their plans for outreach and awareness raising activities to be completed over the coming year (**21-019 Output 4.7_07**).

4.8 Prepare dedicated project website to disseminate project news/results, and broadcast updates using social media (Twitter, Facebook).

The website for the Sudanese marine national parks has now been finalised following a review by national stakeholders (WCGA, Red Sea State, NATCOM / MAB Committee and RSU).

http://sudanmarineparks.info/?page_id=4&lang=en

Other social media accounts have been established include a facebook page, vimeo page and Instagram account.

https://www.facebook.com/sudanmarineparks/

A short advertising video was released as one of the first steps of the communication campaign. The video was posted on the Cousteau Vimeo page and has since been transferred onto the marine parks Vimeo page.

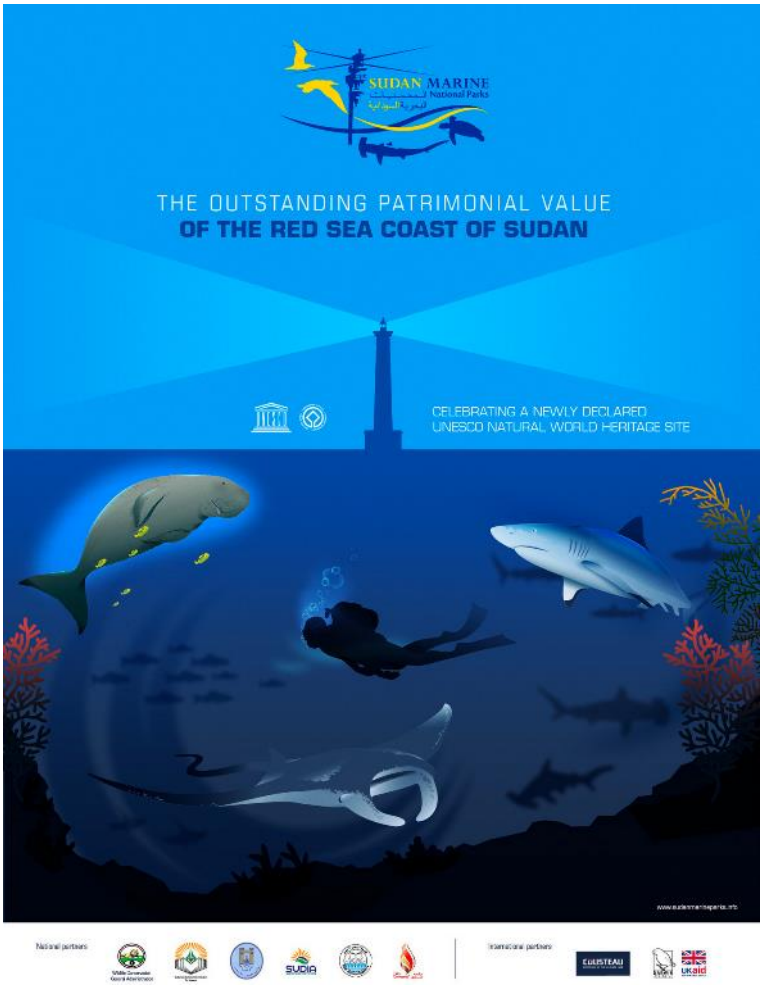


Figure 13: (a) The pop-up panel at the start of the poster exhibit and (b) people reading the introductory panel and watching the educational video at the Corinthia Hotel, Khartoum.

Figure 14. Representatives from Future University and the Wildlife Conservation General Administration viewing the poster exhibit at the Corinthia Hotel, Khartoum, Sudan.

Figure 15. A lady viewing the poster exhibit and the Sudanese photographer whose photographs were included in the exhibit at the Corinthia Hotel, Khartoum, Sudan.

Figure 16: Community members in Dungonab village school next to the poster prepared by the Sudanese Environment Conservation Society (SECS).

3.2 Progress towards project Outputs

Output 1. National capacity to effectively manage two existing MPAs in Sudan strengthened through building a common future vision among a wide range of stakeholders, renovating existing infrastructure, procuring new equipment and using the scientific results to update the DMNP zoning plan.

The DI Project team considers that progress towards achieving Output 1 is good. Although it has not been possible to implement all of the activities as planned, the project has adapted and implemented alternative activities (e.g. logo competition) that have contributed towards the desired output.

Indicator 1.1. Common vision for the future of the MPAs agreed among a broad number of stakeholders by end of Year 3.

Indicator appropriate. While it has not been possible to hold the visioning workshop due to the challenges faced by the local partner, meetings and workshops have continued to be held between national, regional and international partners to coordinate and collaborate on activities (see **21-019 Output 4.4_01, 21-019 Output 4.4_02**, and **21-019 Output 4.4_03**). Furthermore, a logo competition was held and the winning logo will now be used as the brand in all the communication and marketing materials related to the Sudanese Marine National Parks (**21-019 Output 1.1_03**). During Q2/2017, there will be another small workshop to consult on the communication campaign document.

Indicator 1.2. DMNP Management Headquarters and Visitors Centre renovated and functional by end of project.

Indicator appropriate. The planned works planned have been completed by WCGA with the support from PERSGA SEM project. The DI project will now provide additional equipment that are essential for the functionality and for safety, monitoring, control and surveillance as well as information and locational signage.

Indicator 1.3. 2 x vessels and other equipment needed for monitoring, control and surveillance procured and operating in DMNP by end of Year 2.

Indicator needs to be revised. With the available budget it was only possible to purchase 1 of the 2 boats. A budget reallocation request will be submitted to spend the remaining budget on safety, monitoring, control and surveillance equipment.

Indicator 1.4. Zoning plan for DMNP updated to include additional biodiversity hotspots identified using the results of scientific elasmobranch telemetry work (Output 2) by the end of the project.

Indicator appropriate. Participatory mapping work for DMNP completed. The zoning plan for DMNP was updated, but now there is new data available from the bottom monitors and other studies completed by the staff at RSU. So the zoning plan will now be revised to incorporate these new data. Furthermore, as DMNP is now part of the World Heritage site, the project is also supporting the preparation of a new zoning plan for the whole site. This work will be completed before the end of the project.

Indicator 1.5. MPA Management Effectiveness Assessment scores completed using standard scorecard method in Year 1 and repeated in Year 2, Year 3, with results showing an increase by 20% from the baseline.

Indicator appropriate. The WWF-World Bank MPA scorecard was first completed in January 2015 by staff from WCGA and repeated in January 2016 and February 2017. Results show a 30% increase in MPA management effectiveness over the past 24 months.

Output 2. Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is strengthened by training in scientific and participatory monitoring methods, generating data for use in biodiversity planning and management.

The DI Project team is disappointed by the lack of progress on a large number of activities under Output 2 due to the team not being able to access the field site. Despite this, the activities that have been completed under Output 2 have gone at least part of the way towards addressing the original Output. There is an increase in the scientific knowledge about the marine biodiversity and flagship species in the Sudanese Red Sea, as there is new data that has been collected from the bottom monitors. Furthermore, these data have also been used by the project in planning for both the MPAs and the World Heritage site. So the data are directly contributing towards strengthening national for the management of these focal species and conservation outcomes.

Indicator 2.1. Acoustic monitors procured and shipped to Sudan and deployed in-water in Year 1 and maintained to project end. Focal species tagged in Year 2 and 3.

Indicator needs to be revised. The equipment was procured but it has not been possible to deploy new monitors or to tag focal species due to the ongoing issue with security permits. The existing monitors from the shark and manta array were recovered and collected the data was downloaded and transferred to the University of Windsor for post-processing and analysis. The monitors were deposited with the Red Sea University.

Indicator 2.2. Data derived on spatial movement patterns of key elasmobranch species.

Indicator appropriate. The data from the existing monitors has been transferred to the University of Windsor for post-processing and analysis, and will be used to derive spatial movement patterns of key elasmobranch species.

Indicator 2.3. 3 x Sudanese students trained and participating in telemetry fieldwork to generate data on the spatial ecology of focal elasmobranchs in Year 3.

Indicator needs to be revised. It has not been possible for the DI team to access the field to deploy new monitors and tags or provide this training due to the ongoing issue with security permits. A short half day training was provided to the staff at the RSU but this is insufficient.

Indicator 2.4. Elasmobranch telemetry data collated and analysed annually (after each field survey) and report summarising results prepared in Year 3, and shared with relevant government stakeholders.

Indicator needs to be revised. For the same reasons given above.

Indicator 2.5. Sudanese staff member regularly liaising with dive operators and collecting DAS results.
Indicator appropriate. One of the dive masters from the local dive operators and a PhD student from the RSU have now been tasked with the responsibility for supporting these activities.

Indicator 2.6. At least 50% of dive operators (5 out of the 10 companies) currently operating in Sudan reporting daily results to Divers Aware of Sharks (DAS) monitoring programme by end of Year 1 and continuing through to Year 3.

Indicator appropriate. The DAS data to February 2017 has been retrieved. The number of dive operators collecting data has decreased but the number of operators has increased. The training in the ecotourism guidelines will provide the opportunity to support an increase in the number of dive operators recording data again.

Indicator 2.7. 4 x WCGA Officers / Students trained and qualified SCUBA divers by the end of Year 1 and able to participate in monitoring surveys by the end of the project.

Indicator appropriate. 4 WCGA Officers were trained in diving, and 3 x RSU students.

Indicator 2.8. 4 x Sudanese nationals trained and able to implement coral reef monitoring surveys by the end of the project.

Indicator needs to be revised. A needs assessment was completed but it has not been possible to provide the training in coral reef monitoring due to the lack of access to the field.

Indicator 2.9. Coral reef monitoring data collated and analysed annually (after each field survey) and report summarising results prepared by Year 3 and shared with relevant government stakeholders.

Indicator needs to be revised. Compilation and organisation of existing data has been completed and a scientific paper is in preparation.

Indicator 2.10. Geodatabase populated with existing and new datasets.

Indicator appropriate. Geodatabase has been compiled, the data was used to create the zoning plan for DMNP in 2016. New data from the bottom monitors will now be added to this database.

Output 3. Livelihood diversification and improved socio-economic resilience of the communities of Mohammed Qol and Dugonab achieved through providing access to micro-finance to support alternative sustainable IGAs, with a particular focus on IGAs associated with the dive industry, leading to an increased understanding of the economic value and benefits of healthy marine ecosystems.

It has not been possible to implement several of the key activities initially planned under Output 3, notably the work on establishing community based microfinance committees. The work the project has been doing on livelihoods has become more focussed on ecotourism. There has been better progress in this regard, particularly with regards our understanding of the current situation with the dive sector and possible mechanisms through which the local communities can benefit from the sector and national tourism.

Indicator 3.2. Gender-balanced business plans for nature-based ecotourism livelihood opportunities prepared by the end of Year 1.

Indicator appropriate. Business concepts were identified in Year 1, and plans are under development.

Indicator 3.2B Ecotourism training delivered to 10 to 15 Sudanese stakeholders in Year 3.

Indicator appropriate. This is a new indicator that was added during the change request submitted in March 2016.

Indicator 3.3. Ecotourism guidelines developed by the end of Year 2, and training provided to 10 x dive operators and 10 x local community representatives by end of Year 3.

Indicator appropriate. Illustrated ecotourism guidelines are in now available and undergoing final proof checking.

Indicator 3.4. Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).

Indicator appropriate. This is a new indicator that was added during the last change request, submitted in March 2016.

Indicator 3.9. Percentage of dive boat operators and/or number of tourists engaging in community-based income generating activities (guided village tour, guided sea tour on a traditional fishing boat, purchasing items from local artisans, camel tour, etc.), increases from 0%(0) baseline in Year 1 through to 20%(XX) the end of Year 3.

Indicator appropriate. The monitoring of dive boat operators and their participation in community based income generating activities has commenced.

Output 4: Increased awareness of the globally significant marine biodiversity and flagship species found in Sudan's Red Sea among a broad range of national, regional and international stakeholders

The DI Project team considers that progress towards Output 4 has been very good over the past year. The inscription of the MPAs as a UNESCO marine World Heritage site has increased international awareness of the globally significant marine biodiversity and flagship species found in Sudan's Red Sea. The project has also developed a more comprehensive Communication Campaign which will target national stakeholders and local communities.

Indicator 4.1. Sudanese Project Coordinator recruited in Year 1, leading day-to-day implementation of project activities through to Year 3.

Indicator appropriate. SUDIA has employed 2 new staff in the past year to lead the communication campaign.

Indicator 4.2. Project Steering Committee (existing), composed of representatives of key partner organisations, support the implementation of the Darwin Initiative project helping to monitor progress and delivery from Year 1 to Year 3.

Indicator may need to be reworded. The DI project team and partners have been holding meetings with national, regional and international partners to coordinate activities and support collaboration on project activities.

Indicator 4.3. Bi-annual Darwin reports summarising project findings and reporting on progress and delivery of project outputs.

Indicator appropriate.

Indicator 4.4. Annual Stakeholder Workshop participant lists and feedback forms (x3).

Indicator may need to be reworded as per Indicator 4.2. The DI project team and partners have been holding meetings with national, regional and international partners to coordinate activities and support collaboration on project activities.

Indicator 4.5. 500 x Poster about the project produced in Year 2 distributed to tourist establishments, dive operators, schools and other Red Sea State government departments by the end of the project.

Indicator appropriate. 10 copies of the draft poster were distributed. Given the change in status of the MPAs during 2016, a new poster was prepared as part of the exhibit. Another new poster is in preparation as part of the communication campaign.

Indicator 4.6. At least two peer-reviewed paper submitted to a peer-reviewed scientific journal by the end of Year 3; Results presented at one or more international scientific conferences by the end of Year 3;

Indicator appropriate. Two peer reviewed publications have already been submitted. A third publication has been accepted pending corrections, and a fourth paper has been drafted. The results of the project will also be submitted to the European Coral Reef Conference, to be held in Oxford UK in 2017.

Indicator 4.7. Number of press releases to national radio, newspapers and TV in Sudan, UK and internationally in Year 1, 2 and 3.

Indicator appropriate. A Communication Campaign document has been prepared.

Indicator 4.8. Project website established and accessible online by end of Year 1 with regular updates broadcast through other forms of social media (e.g. Facebook, Twitter) in Year 2 and 3.

Indicator appropriate. The project website is now live and new social media accounts have been created as part of the Communication Campaign.

3.3 Progress towards the project Outcome

The DI Project team considers that we have made substantial progress towards the project Outcome over the past year: "*To strengthen Sudan's MPA management capacity, increase knowledge and awareness of marine biodiversity and flagship species, and assist two local communities to realise biodiversity benefits through sustainable nature-based livelihoods".* While the project has continued to face a number of challenges, most notably related to access to the project site, the project has found ways to adapt to this situation during the past year. This has involved providing support remotely or through third parties that are able to access the project site. Changing the activities and adapting to this situation has required more time and was the reason why the project asked for a final 6 month no-cost extension. Having been granted the 6 month extension, the DI Project team now considers that it is highly likely that they will be able to achieve the Outcome by the end of the project.

Progress towards the Outcome indicators is reported below:

Indicator 0.1. National capacity to effectively manage MPAs, as measured using a standard MPA Management Effectiveness Assessment method (e.g. WWF-World-Bank MPA scorecard or GEF METT equivalent) increases from the baseline score achieved in Year 1 by at least 20% by Year 3.

Comments: MPA management effectiveness score has continued to increase from the baseline of 21% in January 2015 to 43% in January 2016 to 52% in February 2017. So there has been an increase of 30% in management effectiveness score during the course of the project. The project expects to see a further increase in the overall score by the end of the project.

Indicator 0.2. Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is improved during the course of the project from Year 1 to Year 3.

Comments: Although the project staff have not been able to access the field to tag new animals and replace and recover the monitors, the data from the existing monitors has now been successfully recovered. The monitors contain a large amount of new scientific data that will help to better inform the management of focal species in the Red Sea State of Sudan.

Indicator 0.3. Percentage of the 250 households in Dungonab and Mohammed Qol who take up the community-based microfinance initiative reporting improvements in livelihood diversification

and income generating capacity as a result, increases from a target of 15% of all households in Year 2 to a target of 30% of all households by Year 3.

This indicator needs to be modified as it is no longer appropriate.

Indicator 0.4. Awareness of the globally significant importance and value of marine biodiversity and flagship species in Sudan increased at the local, national, regional and international level by Year 3.

At the international level, the DI Project has actively supported Sudan through international processes that have helped increase the global awareness and status of the project site MPAs and the associated biodiversity. During the past year, the Sudanese MPAs have been formally recognised by the CBD as EBSA and in July 2016 the sites were awarded the international status of a UNESCO marine World Heritage. World Heritage status is the highest achievable international status for any protected globally and has attracted increased attention to the project site. Scientific papers have also been produced.

At the regional level, the DI project team has been coordinating with the Arab Regional World Heritage Centre and PERSGA, the Regional Organisation for the Protection of the Red Sea and Gulf of Aden, to help Sudan plan for the next steps for the support the effective management of the World Heritage site.

At the national and local level, the DI project has been supporting the implementation of communication and outreach activities. A more comprehensive Communication Campaign has now been planned and this will increase awareness about the MPAs and World Heritage status across a wide range of stakeholders.

3.4 Monitoring of assumptions

Assumption 1.1 Experienced facilitator for the visioning workshop who is able to work with a diverse range of different stakeholders and bring them to a common vision.

Comments: This assumption is no longer valid as the workshop will not be run.

Assumption 1.2 WCGA rangers and officers willing and able to undertake needed renovation works. Running costs of the building ensured.

Comments: WCGA covered part of the costs of the renovation works and PERSGA SEM project covered the remainder. The WCGA is funding the operational costs of the buildings and the rangers.

Assumption 1.3 Proper sea skills trainings can be provided locally (motor boats permits and safety at sea). Capacity to maintain the vessels ensured.

Comments: The Navy school in Port Sudan can provide this type of training. The project team will be sending WCGA staff on this training shortly and preparing a training manual in Arabic and English.

Assumption 1.4 Data from scientific surveys collated and catalogued into geodatabase in a timely manner to enable zoning plans to be updated.

Comments: The data from the previous scientific surveys has been organised and catalogued, the zoning plan for DMNP was updated and is being revised following the inscription of the MPAs as a marine World Heritage site.

Assumption 1.5 MPA Management Effectiveness Assessments are completed in through discussions with WCGA officers, and the persons involved remain in the same institution at least for the duration of the project.

Comments: The General Manager for the MPAs, and the 4 Officers who act as Manager for DMNP and Manager for SMNP have all been trained in how to complete the MPA management effectiveness method.

Assumption 2.1 No logistical problems encountered with transporting the equipment to Sudan.

Comments: The equipment was safely received in Sudan.

Assumption 2.2 Able to recover monitors and no failures in the equipment

Comments: All the monitors have been recovered but due to issues with the security it has not been possible to redeploy them. Data was downloaded from 23 of the 33 recovered monitors. The 10 non-functioning monitors have been sent to Canada for repair.

Assumption 2.4 Suitable candidates are identified for the elasmobranch scientific telemetry training and remain in the same institution at least for the duration of the project

Comments: This assumption is no longer valid as it has not been possible to implement this training.

Assumption 2.5 Staff member employed is approachable and good at outreach work

Comments: The staff member has not been able to operate in the RSS.

Assumption 2.6 Commitment and consistency of participating dive operators.

Comments: The dive operators that the project has been working with those who have supported the Divers Aware of Sharks programme since 2007, and they continue to collect data.

Assumption 2.7 Suitable candidates are identified for the dive training (able to swim and snorkel competently and keen to learn).

Comments: There were 4 x WCGA staff and 3 x students from the RSU that were provided with dive training.

Assumption 2.8 Suitable candidates are identified for the coral reef monitoring training and remain in the same institution at least for the duration of the project

Comments: This assumption is no longer valid as it has not been possible to implement this training.

Assumption 2.9 Results of the scientific and monitoring surveys collated into a geodatabase and available for use in re-zoning DMNP and identifying biodiversity hotspots for long-ranging species.

Comments: The existing scientific and monitoring data has been organised and catalogued.

Assumption 3.1 Socio-cultural and economic environment flexible enough to accommodate change.

Comments:. The project is finding that there is scope for change, the local communities are interested as are the dive operators.

Assumption 3.2 Resilience of the local communities considered (capacity to scope with abrupt changes - no more tourism coming because of extreme events).

Comments: The local communities are already extremely resilient and cope under extreme circumstances. The introduction of new activities, such as eco-tourism, will need to be done gradually and limited in terms of the duration of access per day, so as to not disrupt the normal day-to-day routines of these communities.

Assumption 3.3 Local interest in the development of eco-tourism initiatives, socio-political stability ensured.

Comments: The project has consulted with the local communities to ensure that they were interested and accepting of the activities developed. It has not been possible to implement the activities.

Assumption 3.4 Local interest in establishing CB-MFC, trust established and participants stay committed to this goal.

Comments: This assumption is no longer valid as the community microfinance committees have not been established.

Assumption 3.5 Local acceptance of gender equity in the composition of trainees.

Comments: This assumption is no longer valid as the community microfinance committees have not been established.

Assumption 3.6 Access to loan capital successfully facilitated from local banks and/or MFIs operational in Red Sea State.

Comments: This assumption is no longer valid as the community microfinance committees have not been established.

Assumption 3.7 Local acceptance and understanding of the purposes and governance of the MFI

Comments: This assumption is no longer valid as the community microfinance committees have not been established.

Assumption 3.8 Support provided is sufficient to ensure that repayment and reporting conditions are met.

Comments: This assumption is no longer valid as the community microfinance committees have not been established.

Assumption 4.1 Suitable local project coordinator with relevant skill base and expertise can be found and employed person is committed to the overall goals of the project.

Comments: A suitable local project coordinator was found but was not able to operate in the Red Sea State.

Assumption 4.2 Project Steering Committee (existing) continues to provide guidance and support for the successful implementation of Darwin Initiative project

Comments: The project discarded the need for a steering committee and instead established MOUs with key partner organisations. This has not resolved the issues.

Assumption 4.3 No disturbance to project activities due to political unrest.

Comments: This remains a risk, although it has not yet caused set- backs in the project.

Assumption 4.4 Support provided to ensure that local communities can participate in Annual Stakeholder Workshops;

Comments: The project has discarded the need for a steering committee and instead established MOUs with key partner organisations.

Assumption 4.5 Poster is informative and translated into Arabic, and people display in their respective establishments.

Comments: A new poster is now being prepared and will be translated into Arabic.

Assumption 4.6 Results of sufficient quality to be of interest to the broader scientific community.

Comments: The collection of new data through the project has been delayed. The existing data is definitely of interest and the results are in the process of being published.

Assumption 4.7 Interesting results and scientific findings from the Darwin Initiative project are clearly communicated to the media and scientific community.

Comments: The BBC was interested in doing pieces on the project. This will likely not happen now although there is a Communication Campaign which will work with national journalists.

Assumption 4.8 Web-pages are translated into Arabic to make them accessible to the local community and Red Sea region.

Comments: The website is ready and has been translated into Arabic.

3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

The DI project has helped increased recognition of the Sudanese MPAs at the international level through supporting processes to get the MPAs formally recognised by the CBD as an Ecological and Biologically Significant Areas (EBSA) and inscribed as a UNESCO World

Heritage site. The World Heritage status is the highest achievable international status for a protected area globally, and it has already attracted increased attention to the area.

The project team has published scientific papers highlighting the important biodiversity contained within the protected areas of Sudan. Over the past year, two new papers have been prepared, one of which has already been accepted by PlosOne pending corrections and the other is in preparation. These outputs will further increase and consolidate recognition of the importance of the area among the international scientific community.

With regards poverty alleviation, the DI project undertook a thorough review of previous livelihood related initiatives implemented within DMNP and consulted with the two local communities' resident in DMNP. Through this process, the DI project team identified a range of suitable alternative income generating activities that the communities in the park would be interested in pursuing. The project has helped to improve understanding about the potential for ecotourism to help alleviate poverty within the MPAs through discussions with the dive operators that visit the MPAs and the local communities that live within them. Opportunities to generate an income stream from national tourists has also been identified as the Red Sea coast is becoming a popular destination among Sudanese visiting from Khartoum.

The DI project provided training to key stakeholders in the RSS on sustainable tourism. The tourism consultant that delivered this training has begun preparing business plans to support the involvement of local communities in ecotourism related activities. The DI Project team has not yet been able to obtain an official letter to invite the recruited ecotourism consultant to undertake the field visit she needs to do to complete the business plans. The DI Project has been working remotely with dive operators that are in the process of setting up land and sea safaris and in communication with the PERSGA SEM project to collaborate on this activity.

One of the biggest threats to the area is the proposed large-scale development of Mukkawar Island called 'The Heart of the World', that is within the boundaries of DMNP the World Heritage site on Mukkawar Island. The development consists of high density residential and complex on the island, including an international airport and skyscrapers, that would also involve seabed evacuation and reclamation on a scale similar to the developments off the coast of Dubai. The proposed development was submitted before the World Heritage enlisting, it was blocked by the Federal Ministries. But the developer has continued to try to pursue the issue and has taken the matter to the courts in order to try to overturn the decision. This development is a serious concern because it is also highly political. It may also explain also why the DI team face difficulties in getting the necessary permissions to work on tourism related issues.

4. Contribution to the Global Goals for Sustainable Development (SDGs)

The project is directly contributing to several Sustainable Development Goals (SDGs). As the project focus is on strengthening the MPAs of Sudan, the first and foremost SGD that the project is supporting is Goal 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development). The improved management of the coastal and marine environment and the use of MPAs as a tool to achieve this also contributes towards Goal 13 (Take urgent action to combat climate change and its impacts).

The support the project plans to deliver in the development of alternative income generating activities supports Goal 1. (End poverty in all its forms everywhere), Goal 3. (Ensure healthy lives and promote well-being for all at all ages) and Goal 5. (Achieve gender equality and empower all women and girls). Providing support for the development of ecotourism related activities also contributes towards Goal 8. (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all) and Goal 9. (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation).

5. Project support to the Conventions, Treaties or Agreements

The project directly contributes to the objectives of all three biodiversity conventions:

CBD: Sudan signed the CBD the 1992/06/09 (ratified 1995/10/30). At the project outset it was expected that the project would increase the capability of Sudan to directly contribute towards the Aichi Biodiversity Targets: 12 and 6 through improving the conservation status of threatened species; 1 and 2, by increasing biodiversity awareness linked to poverty reduction strategies; 11 MPA network planning but also; Targets 10, 14, 17 and 19.

The DI project was invited to attend a regional workshop hosted by the CBD in Dubaï between the 19-25 April 2015. The core objective of this meeting was to identify and facilitate the description of Ecologically or Biologically Significant Marine Areas (EBSAs) in the North-West Indian Ocean, Red Sea and Adjacent Gulf Areas. At COP10 it was recommended that areas found to meet the EBSA criteria may require enhanced conservation and management measures, and that this can be achieved through a variety of means, including marine protected areas and impact assessments.

Both the project manager Tarik Chekchak and Dr Rebecca Klaus were invited to contribute to the EBSA meeting as experts. Only Tarik Chekchak was able to attend the meeting in person, he and Rebecca Klaus and Nigel Hussey helped the Sudanese representative (Dr Dirar Nasr) to complete the EBSA templates for Sudan. As a result of this support, three EBSA proposals were prepared for Sudan, which included the MPAs that the DI project is currently supporting:

- Sanganeb Atoll Marine National Park and Sha'ab Rumi
- Dungonab Bay and Mukkawar Island National Park
- Suakin Archipelago and the Deep South of Sudan.

All three of the EBSA prepared for Sudan were formally accepted by the CBD. This is an important international process and significant step forward for the project MPAs to be recognized as being of regional and global significance. The fact that DI project was involved in this process and helped prepare the proposals certainly attracted the interest of the workshop participants.

The focal point in Sudan of the CBD is:

Prof. Haider Elsafi Mohamed Ali Shapo
Secretary General
Higher Council for Environment and Natural Resources (HCENR)
Gamaa Street
P.O. Box 10488
Khartoum
Sudan

CITES: Two species of manta rays and the scalloped hammerhead shark, all recently listed on CITES Appendix II, are abundant in Sudanese waters and form the focus species of this project. Awareness raising over CITES regulations and compliance is required at state and federal levels. Project data will be fed back to the CITES coordinator in Khartoum with whom contact has been established.

CMS: The project will generate knowledge of relevance to the MOU on Migratory Sharks. There is a paucity of data on the residency and movement patterns of large elasmobranchs in the Red Sea region. The focus species, are designated as vulnerable and endangered (IUCN Red list) and are considered highly migratory. This spatial movement data will feed directly into spatial management planning of migratory species and formalise Sudan's commitment to CMS (not yet signatory - range country). Sudan has however signed the CMS MOU on Sharks, MOU on Dugong, and Birds of prey / raptors. During the CBD workshop, the CMS secretariat requested the support of the project leader to convince Sudan to sign the CMS.

6. Project support to poverty alleviation

Our DI Initiative project had planned various activities to directly alleviate poverty among the communities living within DMNP through establishing micro-finance initiatives to fund projects identified by community members. We also identified another mechanism through which poverty could be alleviated through developing ecotourism products that improve the linkage

between the international tourists visiting the area on the liveaboard dive boats and local communities and national tourists.

The coastal livelihoods assessment carried out in early Jan/Feb 2015 was the first step the project took towards tackling issues related to poverty alleviation. During the fieldwork, the two village communities (Mohammed Qol and Dungonab) and their traditional leaders discussed the challenges and difficulties facing their livelihoods. The discussions identified a number of areas where the project may be supportive and contribute to poverty alleviation. The project sub-contracted an ecotourism consultant to assess the MPAs as a tourism destination. The consultant ran a workshop to introduce the concept of sustainable tourism including eco-tourism to key stakeholders in Port Sudan.

The DI Project has not been able to obtain an official invitation letter for the tourism consultant to allow her to visit the field and develop business plans for small scale ecotourism with the local community. Despite attempting to request this letter from different organisations it still has not been possible to obtain it. We are still working on this issue and trying to find alternatives, by delivering the consultant work under PERSGA's official endorsement. We are currently waiting an official answer to our request from PERSGA representatives.

7. Project support to gender equality issues

The local partner SUDIA has previous experience of mainstreaming gender issues and is familiar with the local communities' resident inside DMNP. The communities within DMNP are Beja and these societies are generally patriarchal. Women can work and earn money but would preferably do so from within their homes. There are two women's societies and two women's centres, one in each of the main villages that were established with the support of previous projects. These societies are the organisations through which the DI project can work with the women in the local communities. The women's centres are poorly equipped but they do provide an alternative location where the women feel comfortable to do work together. Consultations with the women's societies that were carried out identified several potential livelihoods related activities that the women would be interested in pursuing (e.g. improving handicrafts, such as jewellery making, weaving and sewing, rearing poultry for eggs and meat, making cakes and pastries). Further consultations are now needed with the women's societies to better refine these ideas. The products that the women's society produce could be sold through the visitors centre. These further consultations and any training needs to be done by women as it is considered to be culturally inappropriate to speak to men outside of the immediate family.

8. Monitoring and evaluation

After the first Darwin Initiative workshop, the different partners involved have prepared together Monitoring and Evaluation Plan defining indicators, data sources, frequency, templates and responsibilities. It has been updated when the two changes requested with have submitted to DEFRA have been accepted.

We use also a web-based tool named "Basecamp" where every partner can share key information and outputs under the relevant activities. Basecamp offers to-do lists, wiki-style web-based text documents, milestone management, file sharing, time tracking, and a messaging system. All key documents and templates are also available on this web based management platform. We have also regular skype meetings between UK, Canada, France and Sudan.

9. Lessons learnt

The project has faced a number of challenges since the outset, the main one being the sudden passing of Mohammed Younis during the first year of the project. He was the driving force behind the MPAs in Sudan and the lynchpin for our project. Without him it has proven very difficult for the DI project team to access the field to implement the activities planned. Our local partner NGO has also been facing administrative issues that have constrained their ability to

operate in the Red Sea State. Neither of these scenarios were anticipated as a risk at the start of the project.

To overcome these challenges the DI project has continued to strengthen existing partnerships. We followed the advice of our national partners and prepared MOUs that clearly stated the roles and responsibilities of these organisations, and helped clarify how they will help the project and how they will benefit. These were not sufficient to resolve the security issue.

The project has had to accept these challenges and adapt by finding different ways to implement the planned activities. For example, our project has had to find new partners organisations to implement on the ground activities when it has not been possible for our national partner NGO SUDIA to do so. Recruiting another organisation to assist in the implementation of a planned activities is not always easy and can cause further delays, as it takes time to get them up to speed with the projects aims and objectives.

The project has also had to adapt the activities to suit the local situation and capacity. For example, it became apparent quite early on that although the project was attempting to support ecotourism, there was a very limited understanding of what this term actually means. The project has bridged this knowledge gap by providing a training in sustainable tourism that targeted at a wide range of stakeholders including representatives of relevant government organisations within the Red Sea State.

Other activities that have worked particularly well are those where the project team have provided support to national organisations to help them to engage in regional and international processes (e.g. EBSA and UNESCO World Heritage). The project has been successful in this regard and has helped increase the recognition and visibility of the project site. Other projects could also consider offering their support to the national authorities responsible for protected areas to help them to engage in these types of processes.

10. Actions taken in response to previous reviews (if applicable)

During the last DI review, it was suggested that we simplify some indicators and activities. As a result of this suggestion and the feedback resulting from the recent political changes in Sudan (among them, the nomination of the new Governor of the Red Sea State), we requested changes to a suite of activities and their related indicators. The Change Request was accepted by DEFRA the 8th March 2016.

11. Other comments on progress not covered elsewhere

The DI project has continued to try to resolve the administrative issues that have prevented the team from being able to freely access the project site. The DI Project team have sought the advice of national partners, established new MOUs, but this critical issue remains unresolved. As a result of this issue, there are now several activities that it the DI Project will not be able to fully implement. The DI Project team have identified alternative activities.

12. Sustainability and legacy

The DI project team have helped to organise several national events this year, displayed the exhibit at several national events, and attended a regional partners coordination meeting at the Arab Regional World Heritage Centre in Bahrain. The website is now live and ,

The permanent home for the poster exhibit has been discussed, and it is most likely that it will be put on display at the Port Sudan Aquarium. Communication campaign

13. Darwin identity

All the presentations that the DI project team have given at the national, regional, and international events mentioned above have included the use of the Darwin Initiative and UK Aid

logos. All the communication materials, including the new video and poster exhibit also properly recognise the support given. In Sudan, the relevant authorities responsible for the MPAs (WCGA) now recognise the Darwin Initiative project as a distinct entity, as well as the local administrative authority, the Red Sea State, the Red Sea University, as well as various other organisations. The project has now established a Facebook / Instagram / Vimeo account.

14. Project expenditure

Change request accepted by Defra the 12 April 2017:

	2016-17	2017-18	2018-19	Start/end dates/ Comments
Current	95,400	50,100		May 2017 to September 2017
Proposed	**77,170**	**68,330**		**May 2017 to end of April 2018**
Difference	*-18 230*	*+ 18 230*		

Table 1: Project expenditure during the reporting period (1 April 2016 – 31 March 2017)

Project spend (indicative) sinc last annual report	2016/17 Grant (£)	2016/17 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			+ 46,9	Sudia staff for the communication campaign that was necessary after the world heritage enlisting
Lead organisation	0			
Partner organisation				Local ngo Sudia
Consultancy costs			-47,6%	Fewer expenses then expected on biodiversity and on livelihood. This budget will be spent during the next year.
Output 1.				
Output 2.				
Output 3.		0		
Output 4.				Needs for the communication campaign and facilitation work
Overhead Costs			0 %	
Travel and subsistence			+ 36,8%	More travels needed to support the World Heritage enlisting process, and to solve security related issues / build-up new partnerships and coordination work.
International travels				
National travels				
Field work travel and subsistence				
Operating Costs			+ 43 %	More workshops needed to build-up

				local understanding of ecotourism, capacity in digital mapping and zoning of biodiversity and MPAs (QGIS / MARXAN)
Capital items (see below) 1 Small vessel for enforcement an science			+13,5%	Boat selected by WCGA was more expensive then previously planed.
Others (see below)				
TOTAL	**77 170**	**84 009**	**+08,9%**	

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2016-2017

Project summary	Measurable Indicators	Progress and Achievements April 2016 - March 2017	Actions required/planned for next period
Impact To rebrand Sudan as a global marine biodiversity hotspot and ecotourism destination, contributing to MDG and biodiversity convention targets, by ensuring local community livelihoods benefit from strengthening in biodiversity management.		Project has supported the increased recognition of the MPAs through international processes. The MPAs have been accepted by the CBD as EBSA. More significantly, as of July 2016, the Sudanese MPAs are now inscribed as a UNESCO marine World Heritage site. This is the first marine site in the entire Red Sea. This is the highest international status for a MPA globally and will attract international attention to the area.	[redacted]
Outcome To strengthen Sudan's MPA management capacity, increase knowledge and awareness of marine biodiversity and flagship species, and assist two local communities to realise biodiversity benefits through sustainable nature-based livelihoods.	Indicator 0.1. National capacity to effectively manage MPAs, as measured using a standard MPA Management Effectiveness Assessment method (e.g. WWF-World-Bank MPA scorecard or GEF METT equivalent) increases from the baseline score achieved in Year 1 by at least 20% by Year 3.	MPA management effectiveness score has continued to increase from the baseline of 21% in January 2015 to 43% in January 2016 to 52% in February 2017. So there has been an increase of 30% in management effectiveness score during the course of the project.	Further support provided to WCGA staff during this year will include delivery of additional equipment to support monitoring, control and surveillance of MPA, training in boat handling and navigation, training in simple monitoring methods etc.
	Indicator 0.2. Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is improved during the course of the project from Year 1 to Year 3.	Existing scientific data has been compiled and organised and a geodatabase prepared; the existing acoustic monitors have been recovered and the data downloaded, and transferred to the University of Windsor for post-processing and analysis. Two new scientific publications have been prepared one of which has been accepted subject to revisions.	It has not been possible to implement the field work that was planned to collect more scientific data and provide training to students and staff in the use of acoustic telemetry techniques, and to refine/improve coral reef monitoring.
	Indicator 0.3. Percentage of the 250 households in Dungonab and	Following the completion of the coastal livelihood assessment report and	It has not been possible for the tourism consultant to visit the sites to complete

	Mohammed Qol who take up the community-based microfinance initiative reporting improvements in livelihood diversification and income generating capacity as a result, increases from a target of 15% of all households in Year 2 to a target of 30% of all households by Year 3.	identification of AIG, a sustainable tourism training workshop was held and business plans were started. Note the indicator target needs to be modified to reflect the changes to the activities (March 2016).	her consultations with the local communities. This is what needs to happen before the business plans for AIG can be completed.
	Indicator 0.4. Awareness of the globally significant importance and value of marine biodiversity and flagship species in Sudan increased at the local, national, regional and international level by Year 3.	The DI Project has actively supported Sudan important international processes to increase the global awareness and status of the project site MPAs and the associated biodiversity these areas support (EBSA and UNESCO marine World Heritage). Scientific papers have been produced. During the past year, the Sudanese MPAs have been formally recognised by the CBD as EBSA. In addition to this, in July 2016 the sites were awarded the international status of a UNESCO marine World Heritage. This is the highest achievable status for any MPA globally and has attracted international attention to the project site. The DI project team has been coordinating with the Arab Regional World Heritage Centre and PERSGA, the Regional Organisation for the Protection of the Red Sea and Gulf of Aden, to help Sudan plan for the next steps for the support the effective management of the World Heritage site. At the national level, the DI project has been supporting an communication campaign to increase awareness about the MPAs and World Heritage status. This has included supporting events and a mobile poster exhibit.	The DI project team has prepared a communication and awareness campaign document. The implementation of this campaign will further raise awareness of the MPAs, and new UNESCO World Heritage status at the local, national, regional and international level.

Output 1. National capacity to effectively manage two existing MPAs in Sudan strengthened through building a common future vision among a wide range of stakeholders, renovating existing infrastructure, procuring new equipment and using the scientific results to update the DMNP zoning plan.	Indicator 1.1. Common vision for the future of the MPAs agreed among a broad number of stakeholders by end of Year 3.	Indicator may need to be revised. It has not been possible to hold the proposed workshop due to the challenges faced by the local partner. However the project has managed to hold meetings and a logo competition has created a brand for the MPAs. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 4.4_01, 21-019 Output 4.4_02, 21-019 Output 4.4_03 and 21-019 21-019 Output 1.1_01, 21-019 Output 1.1_02, Output 1.1_03.*
	Indicator 1.2. DMNP Management Headquarters and Visitors Centre renovated and functional by end of project.	Indicator appropriate. Works planned were revised following discussions with the staff at WCGA and PERSGA SEM project. The renovation works are now completed and the project will submit a budget reallocation request to spend the remaining budget on essential equipment. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 1.2_01.*
	Indicator 1.3. 2 x vessels and other equipment needed for monitoring, control and surveillance procured and operating in DMNP by end of Year 2.	Indicator needs to be revised from 2 to 1 boats and a budget reallocation request submitted. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 1.3_01, 21-019 Output 1.3_02, 21-019 Output 1.3_03.* The purchase order for the boats was initially revised following discussions with the staff from WCGA who requested a different specification for the boat. The requested boat cost more than anticipated so it was not possible to purchase 2 boats with the allocated budget. In addition, PERSGA purchased one boat for the MPAs. So the project team would like to submit a budget reallocation request to use the remaining budget to purchase other essential equipment.
	Indicator 1.4. Zoning plan for DMNP updated to include additional biodiversity hotspots identified using the results of scientific elasmobranch telemetry work (Output 2) by the end of the project.	Indicator appropriate. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 1.4_01.* Participatory mapping work for DMNP completed. The zoning plan for DMNP was updated, but now the data is available from the bottom monitors the zoning plan needs to be revised to incorporate the new data obtained from these monitors. Furthermore, as DMNP is now part of the World Heritage site, the project is also supporting the preparation of a new zoning plan for the World Heritage site. This work will be completed before the end of the project.
	Indicator 1.5. MPA Management Effectiveness Assessment scores completed using standard scorecard method in Year 1 and repeated in Year 2, Year 3, with results showing an increase by 20% from the baseline.	Indicator appropriate. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 1.5_03.* WWF-World Bank MPA scorecard was completed in January 2015 by staff from WCGA and repeated in January 2016 and February 2017. Results show a 30% increase in MPA management effectiveness over the past 2 years.

Activity 1.1. Community Visioning Workshop (x1) held with a broad group of stakeholders (local community members, businessmen, state and federal government officials), and communications on progress maintained through Output 4.		Planning meetings held on 5th July 2015 and 20th Sept 2015. The workshop was rescheduled for Q2/2016, but given the challenges faced by the national organisation it has not been possible to run this workshop. The activity will now be modified. The plan is to hold a stakeholder workshop to discuss the communication and awareness raising campaign.
Activity 1.2. Existing park building in DMNP renovated to act as both a Ranger Station (an office, accommodation, and basic research facilities) and a Visitors Centre to act as the hub for nature-based ecotourism activities.		The contract for the renovation works prepared. But due to the lack of access for the national partner, the works were postponed. The works have since been cancelled as WCGA commissioned some of the work. The PERSGA SEM project contracted a builder to finish the remainder of the works. The parks buildings have now been renovated and 5 new outpost buildings have been constructed.
Activity 1.3. Procure two small vessels and other equipment needed for monitoring, control and surveillance in existing 2 MPAs, and facilitate related training (skipper licence and permits).		A purchase order was prepared for the procurement of two vessels. The purchase was put on hold due to the issue with the security permits. WCGA then requested a change in the boat specification and a new purchase order was prepared. The new specification cost more and it was only possible to purchase one boat. The boat was ordered and delivered. Furthermore, PERSGA then decided to purchase a second boat which is due to be delivered by June 2017.
Activity 1.4. Update zoning plan for DMNP on the basis of the community visioning workshop and scientific surveys and identify key biodiversity hotspots for consideration as new MPAs for inclusion in MPA Network.		The community consultation process on the existing 2004 zoning scheme was completed. The participatory mapping of resource use patterns was also completed. A new zoning plan for DMNP was prepared. This will now be updated to integrate the data from bottom monitors. The zoning plan will also be expanded to cover the whole World Heritage site. During this year, WCGA requested the support of Cousteau in preparing a new proposal to justify the inclusion of Sha'ab Rumi as the third MPA prepared and submitted to the WCGA for consideration.
Activity 1.5. Meeting with WCGA Officers at the start and end of the project to complete MPA Management Effectiveness Assessments (using WWF-World Bank Scorecard method or equivalent).		WCGA Officers provided with training in how to complete WWF-World Bank MPA Scorecard method in January 2015. The MPA Scorecard was completed and the overall score was 21%. The MPA Scorecard was completed again in January 2016. The overall score was 42%, which is a 22% improvement in management effectiveness this year. The MPA Scorecard was completed again in January 2017. The overall score was 52%, which is a 30% improvement in MPA management effectiveness from the baseline score in 2015.
Output 2. Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is strengthened by training	Indicator 2.1. Acoustic monitors procured and shipped to Sudan and deployed in-water in Year 1 and maintained to project end. Focal species tagged in Year 2 and 3.	Indicator needs to be revised. The equipment was procured and shipped to Sudan. *Evidence provided in section 3.1 & 3.2 of report.* But it has not been possible to redeploy the monitors or tag more animals due to the ongoing issue with security permits. The 33 existing monitors have now been recovered and the data downloaded and transferred to the University of Windsor for post-processing and analysis.

in scientific and participatory monitoring methods, generating data for use in biodiversity planning and management	Indicator 2.2. Data derived on spatial movement patterns of key elasmobranch species.	Indicator appropriate. *Evidence provided in section 3.1 & 3.2 of report.* As above the data from the existing shark and manta arrays (33 monitors) have been downloaded and transferred to the University of Windsor for post-processing.
	Indicator 2.3. 3 x Sudanese students trained and participating in telemetry fieldwork to generate data on the spatial ecology of focal elasmobranchs in Year 3.	Indicator needs to be revised. It has not been possible for the DI team to access the field to provide this training due to the ongoing issue with security permits.
	Indicator 2.4. Elasmobranch telemetry data collated and analysed annually (after each field survey) and report summarising results prepared in Year 3, and shared with relevant government stakeholders.	Indicator needs to be revised. It has not been possible for the DI team to access the field to redeploy monitors and tag new animals on an annual basis due to the ongoing issue with security permits. The existing monitors have been recovered and the data downloaded.
	Indicator 2.5. Sudanese staff member regularly liaising with dive operators and collecting DAS results.	Indicator appropriate. One of the dive masters from the local dive operators and a PhD student from the RSU have now been tasked with the responsibility for supporting these activities
	Indicator 2.6. At least 50% of dive operators (5 out of the 10 companies) currently operating in Sudan reporting daily results to Divers Aware of Sharks (DAS) monitoring programme by end of Year 1 and continuing through to Year 3.	Indicator needs to be revised. The most recent DAS data has been retrieved. The DI project team have been liaising with dive operators remotely. Only one of the dive operators have been collecting data during the past year. This is in part due to the problems the DI project team have had in accessing the field. The number of dive operators has also increased drastically in the past year due to a larger number of permits being given to dive operators from Egypt. There are now 8 local boats (down from 10) and 15 Egyptian boats (up from 8) so total 23 liveaboard boats.
	Indicator 2.7. 4 x WCGA Officers / Students trained and qualified SCUBA divers by the end of Year 1 and able to participate in monitoring surveys by the end of the project.	Indicator appropriate. *Evidence provided in section 3.2 of report and Annex 21-019 Output 2.7_01 and 21-019 Output 2.7_02.* 4 WCGA Officers trained in diving, and 3 x RSU students.
	Indicator 2.8. 4 x Sudanese nationals trained and able to implement coral reef monitoring surveys by the end of the project.	Indicator needs to be revised. A needs assessment was completed but it has not been possible to provide the training in coral reef monitoring due to the lack of access to the field.

	Indicator 2.9. Coral reef monitoring data collated and analysed annually (after each field survey) and report summarising results prepared by Year 3 and shared with relevant government stakeholders. Indicator 2.10. Geodatabase populated with existing and new datasets.	Indicator needs to be revised. Compilation and organisation of existing data has been completed and a scientific paper is in preparation. *Evidence provided in section 3.1 & 3.2 of report.* Indicator appropriate. Geodatabase has been compiled and training in QGIS and Marxan software delivered. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 2.10_01 and Output 2.10_02.*
Activity 2.1. Acoustic monitor array deployment inside DMNP and Sanganeb MPA and flagship elasmobranch species tagged.		Acoustic monitors and tags procured. Existing monitors recovered, collected and the data downloaded.
Activity 2.2. Continuous data derived on spatial movements, residency, home-range and migration patterns of focal flagship elasmobranch species through telemetry techniques.		This activity was to be implemented jointly by the DI project in partnership with the Red Sea University staff as per the MOU that was signed on 25th February 2016. It has not been possible to fully implement this activity due to the DI project team not being able to get security permission for access to the field. A total of 33 existing monitors have been recovered, collected and the data downloaded.
Activity 2.3. Training of Sudanese partners in telemetry field methods for elasmobranchs (x 3), telemetry array maintenance and data download and organisation.		As above, the training in telemetry was to be provided to students / staff at the Red Sea University as per the MOU that was signed on 25th February 2016. It has not been possible to implement this activity due to the DI project team not being able to get security permission for access to the field.
Activity 2.4. Data compilation, analysis and reporting of elasmobranch movement data (telemetry).		The data on manta ray movement patterns that were obtained from the satellite tagged mantas has been analysed. The data has been downloaded from the existing bottom monitors and transferred to the University of Windsor for post processing and analysis.
Activity 2.5. Training of Sudanese staff member to liase with regional dive industry over Divers Aware of Sharks monitoring project.		The staff member was identified and employed until May 2015 the contract was suspended pending the resolution of the security issue. Two alternative people have been identified and are working on the project part-time.
Activity 2.6. Data compilation, analysis and reporting of DAS monitoring surveys.		One dive operators has continued to collect data for the DAS monitoring programme this year. Data from 2007 to 2012 was analysed by an MSc student from the University of Cardiff (UK). The data from 2012 to 2017 has been compiled and analysed.
Activity 2.7. Training of WCGA Officers / students in SCUBA diving.		4 x WCGA Officers and 3 x students from the Red Sea University have been trained in SCUBA diving in October 2015. Further training will be delivered in 2017.
Activity 2.8. Training of Sudanese partners in coral reef monitoring survey methods (Cousteau Divers, Reef Check) and field surveys (x 3) to implement		Coral reef monitoring activities are being undertaken by RSU. A training needs assessment was completed. It has not been possible to implement this activity due to the DI project team not being able to get security permission for access to

monitoring.		the field.
Activity 2.9. Data compilation, analysis and reporting of coral reef monitoring surveys.		Archive field data have been compiled and catalogued, including the transfer of old video survey data from tapes into digital formats.
Activity 2.10. Preparation of geodatabase to consolidate existing and new monitoring datasets (e.g. DAS data, telemetry data, coral reef monitoring etc), and satellite derived environmental characteristics (e.g. sea surface temperature, chlorophyll) providing the basis for spatial planning and re-zoning of DMNP.		A geodatabase has been prepared and is being populated with available data. These data and the new data collected through the project will provide the basis for the re-zoning. An introductory training in the freeware software Quantum GIS (QGIS) has been delivered (May 2016) and the data will eventually be shared in a format that can be accessed through this software.
Output 3. Livelihood diversification and improved socio-economic resilience of the communities of Mohammed Qol and Dugonab achieved through providing access to micro-finance to support alternative sustainable IGAs, with a particular focus on IGAs associated with the dive industry, leading to an increased understanding of the economic value and benefits of healthy marine ecosystems.	Indicator 3.1 Two Community-Based Microfinance Committees established for communities living inside DMNP (Dungonab and Mohammed Qol), results in increased self-employment in nature-based livelihood activities and generate revenue in both Dungonab and Mohammed Qol coastal villages.	<u>Indicator needs to be removed.</u> It has not been possible to implement this activity. Livelihood concepts were identified in Year 1. *Evidence provided in section 3.1 and 3.2 of report and Annex 4 21-019 Output 3.1_01*
	Indicator 3.2. Gender-balanced business plans for nature-based ecotourism livelihood opportunities prepared by the end of Year 1.	Indicator appropriate. Business concepts were identified in Year 1, and plans are under development. *Evidence provided in section 3.1 and 3.2 of report and Annex 4 21-019 Output 3.2_01, 21-019 Output 3.2_02 and 21-019 Output 3.2_03*
	Indicator 3.2B Ecotourism training delivered to 10 to 15 Sudanese stakeholders in Year 3.	Indicator appropriate. This is indicator was added during the change request, submitted in March 2016. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 3.2_01, 21-019 Output 3.2_02, 21-019 Output 3.2_03*
	Indicator 3.3. Ecotourism guidelines developed by the end of Year 2, and training provided to 10 x dive operators and 10 x local community representatives by end of Year 3.	Indicator appropriate. Ecotourism guidelines prepared and illustrated. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 Output 3.3_01 and Output 3.3_02*
	Indicator 3.4. Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).	Indicator appropriate. This is a new indicator was added the last change request, submitted in March 2016. *Evidence provided in section 3.1 & 3.2 of report*
	Indicator 3.9. Percentage of dive boat operators and/or number of tourists	Indicator appropriate. The monitoring of dive boat operators and their participation in community based income generating activities has commenced. *Evidence*

	engaging in community-based income generating activities (guided village tour, guided sea tour on a traditional fishing boat, purchasing items from local artisans, camel tour, etc.), increases from 0%(0) baseline in Year 1 through to 20%(XX) the end of Year 3.	*provided in section 3.1 & 3.2 of report*
Activity 3.1 Field visit to refine outcomes from previously completed coastal livelihood assessment in the two villages in DBMP (Mohammed Qol and Dungonab).		Completed.
Activity 3.2 Prepare business plans for nature-based ecotourism livelihood opportunities that are both equitable and gender balanced.		Business concepts developed, business plans in preparation, to be completed by Q3/2017.
Activity 3.2B 4 days training in ecotourism strategy		Training workshop completed March 2016.
Activity 3.3 Develop ecotourism guidelines and deliver training to familiarise WCGA rangers, dive operators and local community representatives with guidelines.		Ecotourism guidelines prepared and illustrated. Training in the use of guidelines to be completed in Q3/2017.
Activity 3.4 Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).		Ecotourism focussed livelihood projects being further developed
Activity 3.9 Monitoring of the economic value of the dive industry (number of boats and tourists) and tourist numbers engaging in IGAs.		Monitoring of the dive tourism sector commenced in Q2/2016 and will continue through to the end of the project.
Output 4. Increased awareness of the globally significant marine biodiversity and flagship species found in Sudan's Red Sea among a broad range of national, regional and international stakeholders	Indicator 4.1. Sudanese Project Coordinator recruited in Year 1, leading day-to-day implementation of project activities through to Year 3. Indicator 4.2. Project Steering Committee (existing), composed of representatives of key partner organisations, support the implementation of the Darwin Initiative project helping to monitor progress and delivery from Year 1 to Year 3. Indicator 4.3. Bi-annual Darwin reports summarising project findings and reporting on progress and delivery of	Indicator appropriate. *Evidence provided in section 3.1 & 3.2 of report* Indicator to be reworded / removed. The Project Steering Committee is no longer needed. Meetings are being held with a stakeholders with regard to the consultation workshop that is being planned. Indicator appropriate. The project is completing and submitting the required reports.

	project outputs.	
	Indicator 4.4. Annual Stakeholder Workshop participant lists and feedback forms (x3).	Indicator appropriate. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 4.4_01, 21-019 Output 4.4_02 and 21-019 Output 4.4_03*
	Indicator 4.5. 500 x Poster about the project produced in Year 2 distributed to tourist establishments, dive operators, schools and other Red Sea State government departments by the end of the project.	Indicator appropriate. 10 copies of a draft poster were printed and distributed to stakeholder. The project poster and leaflet are currently being revised and will be printed for distribution at the workshop. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 4.5_01 and 21-019 Output 4.5_02*
	Indicator 4.6. At least two peer-reviewed paper submitted to a peer-reviewed scientific journal by the end of Year 3; Results presented at one or more international scientific conferences by the end of Year 3;	Indicator appropriate. Two papers already published in scientific journals and one book chapter. Two new papers have been prepared this year, one has been submitted to PlosOne and is accepted pending correction. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 4.6_01 and 21-019 Output 4.6_02*
	Indicator 4.7. Number of press releases to national radio, newspapers and TV in Sudan, UK and internationally in Year 1, 2 and 3.	Indicator appropriate. One press release has been prepared and released and one radio broadcast has been held. A short educational video has been prepared and released on Vimeo and shown at a number of specific events in Sudan. A poster exhibit has been prepared and displayed at a number of events in Sudan. Education and outreach activities have been completed in DMNP. A new communication campaign document has been prepared. *Evidence provided in section 3.1 & 3.2 of report and Annex 4 21-019 Output 4.7_01, 21-019 Output 4.7_02, 21-019 Output 4.7_03, 21-019 Output 4.7_04, 21-019 Output 4.7_05, 21-019 Output 4.7_06 and 21-019 Output 4.7_07).*
	Indicator 4.8. Project website established and accessible online by end of Year 1 with regular updates broadcast through other forms of social media (e.g. Facebook, Twitter) in Year 2 and 3.	Indicator appropriate. Website online in English and Arabic. http://sudanmarineparks.info/?page_id=4&lang=en https://www.facebook.com/sudanmarineparks/
Activity 4.1. Sudanese staff recruited and trained to lead day-to-day project activities and communications with stakeholders.		A Sudanese staff member was contracted as Operations Officer as of January 2015. Two new staff members have been employed to manage the communication campaign.

Activity 4.2. Bi-annual Project Steering Committee meetings for Darwin Project to discuss project progress and monitor delivery.	Meetings between national, regional and international stakeholders and partners are regularly taking place.
Activity 4.3. Preparation of bi-annual Darwin Initiative Project reports.	This report constitutes the projects third end of year report (AR3).
Activity 4.4. Annual Stakeholder Workshops held with a broad group of stakeholders to keep them up to date on Darwin Initiative project findings (x3).	Please see Output 1, Activity 1.1.
Activity 4.5. Prepare a poster summarising key project outcomes for distribution to dive operators and other organisations in Red Sea State of Sudan.	A poster was prepared explaining about the MPAs in Sudan. 10 copies of this poster were printed and distributed to key stakeholders in Sudan. A new poster is being prepared for distribution this year.
Activity 4.6. Prepare scientific paper(s) for submission to peer-reviewed journals and present findings at international conference.	Hussey et al. (2014) Conservation: Sanctions derail wildlife protection, Nature, 514, 305. Hussey et al. (2015) “Aquatic animal telemetry: A panoramic window into the underwater world” Science. 34 (6240) 1255641-1.
Activity 4.7. Prepare media statements and popular articles to communicate interesting findings/actions to national, regional, and international newspapers, radio and TV.	The project has produced and educational video and mobile poster exhibit, which have been shown at a number of different events over the past year. SUDIA has prepared a comprehensive Communication Campaign document which sets out their plans for outreach and awareness raising activities over the coming year.
Activity 4.8. Prepare dedicated project website to disseminate project news/results, and broadcast updates using social media (Twitter, Facebook).	The MPA website is now accessible online at this address: http://sudanmarineparks.info/?page_id=4&lang=en

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Outcome: To strengthen Sudan's MPA management capacity, increase knowledge and awareness of marine biodiversity and flagship species, and assist two local communities to realise biodiversity benefits through sustainable nature-based livelihoods.	0.1 National capacity to effectively manage MPAs, as measured using a standard MPA Management Effectiveness Assessment method (e.g. WWF-World-Bank MPA scorecard or GEF METT equivalent) increases from the baseline score achieved in Year 1 by at least 20% by Year 3. 0.2 Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is improved during the course of the project from Year 1 to Year 3.	1.1 Progress updates reported in Darwin Initiative bi-annual reports (x 6) and minutes of Project Steering Committee Meetings (x 3); 1.2-1.3 Photographs documenting renovation works and new vessels and equipment; National press release about the opening of the Ranger/Visitor Information Centre; 1.4 New biodiversity hotspots identified and updated zoning plan for DMNP; 1.5. MPA Management Effectiveness Assessment in Year 1 and Year 3. 2.1 and 2.2. Invoices from the procurement of acoustic tags and monitors; 2.3 and 2.4 Elasmobranch Survey/Telemetry Training Report (incl. training log); Video and photographic records; 2.5. Data collected from dive operators participating in Divers Aware of Sharks programme entered in database; 2.7 Dive certificates of trainees; 2.9. Coral Reef Monitoring Report (incl. training log); Video and photographic records;	• Relationships between Red Sea State government and WCGA remain stable; • Experienced facilitator that is able to manage a broad range of stakeholders and bring them to a common vision; • The park building is in suitable condition for renovation and there is sufficient commitment from WCGA to undertake required work; • Results of the scientific and monitoring surveys collated into a geodatabase and available for use in re-zoning DMNP; • WCGA are interested to learn about MPA Management Effectiveness Assessment methods and to monitor progress. • No problems encountered in transporting acoustic telemetry equipment to Sudan; • No significant natural or man-made impacts occur in the study region during the project that impacts the environment and /or prevents the team from undertaking required field work and training; • No significant equipment failures or losses; • Suitable trainees are identified and remain in the same institution at least for the duration of the project;

		2.10 Geodatabases with results of all monitoring and scientific surveys (e.g. derived telemetry data/coral reef surveys), existing habitat maps and other satellite derived environment variables (temperature, chlorophyll etc);	• Commitment and consistency of dive operators participating in DAS surveys and assisting fieldwork operations; • Continued support by WCGA for all fieldwork operations. • Community based livelihood assessment identifies viable gender balanced livelihood options; • Socio-cultural and economic environment flexible enough to accommodate change; • Resilience of the local communities considered (capacity to scope with abrupt changes - no more tourism coming because of extreme events). • Suitable local project coordinator with relevant skill base and expertise can be found and employed person is committed to the overall goals of the project; • Results of sufficient quality to be of interest to scientific community; • Interesting results and scientific findings from the Darwin Initiative project are clearly communicated to the media and scientific community.
	0.3 Percentage of the 250 households in Dungonab and Mohammed Qol who take up the community-based microfinance initiative reporting improvements in livelihood diversification and income generating capacity as a result, increases from a target of 15% of all households in Year 2 to a target of 30% of all households by Year 3.	3.1 Updated Community Based Livelihood Assessment Report; 3.2 Business plans; 3.2B Tourism training workshop report training 3.3. Ecotourism guidelines and training workshop report. 3.4 Report on development of community-based initiatives that deliver new livelihood and income generating activities 3.9 Report on dive boat operator survey	
	0.4 Awareness of the globally significant importance and value of marine biodiversity and flagship species in Sudan increased at the local, national, regional and international level by Year 3.	4.1. Staff contract 4.2. Report from Project Steering Committee 4.3. DI project reports 4.4. 3 x Annual Stakeholder Workshop Reports; Workshop participant lists and feedback forms; 4.5. Poster showing project objectives, results and biodiversity hotspots in Sudan Red Sea; 4.6. Scientific papers submitted to peer-reviewed journals; Proceedings of international conferences;	

		4.7. All media (newspaper, radio and TV) coverage documented and summarised; 4.8 Project webpage hosted on Cousteau website and updates to website broadcast through newsfeeds on project partners facebook pages.	
Outputs: **1**. National capacity to effectively manage two existing MPAs in Sudan strengthened through building a common future vision among a wide range of stakeholders, renovating existing infrastructure, procuring new equipment and using the scientific results to update the DMNP zoning plan.	1.1 Common vision for the future of the MPAs agreed among a broad number of stakeholders by end of Year 3. 1.2 DMNP Management Headquarters and Visitors Centre renovated and functional by end of project. 1.3. 2 x vessels and other equipment needed for monitoring, control and surveillance procured and operating in DMNP by end of Year 2. 1.4 Zoning plan for DMNP updated to include additional biodiversity hotspots identified using the results of scientific elasmobranch telemetry work (Output 2) by the end of the project. 1.5 MPA Management Effectiveness Assessment scores completed using standard scorecard method in Year 1 and repeated in Year 2, Year 3, with results showing an increase by 20% from the baseline.	1.1 Progress updates reported in Darwin Initiative bi-annual reports (x 6) and minutes of Project Steering Committee Meetings (x 3); 1.2-1.3 Photographs documenting renovation works and new vessels and equipment; National press release about the opening of the Ranger/Visitor Information Centre; 1.4. New biodiversity hotspots identified and updated zoning plan for DMNP; 1.5 MPA Management Effectiveness Assessment in Year 1 and Year 3.	• Relationships between Red Sea State government and WCGA remain stable; • Experienced facilitator that is able to manage a broad range of stakeholders and bring them to a common vision; • The park building is in suitable condition for renovation and there is sufficient commitment from WCGA to undertake required work and ensure that the renovated building is maintained and the running costs covered; • Results of the scientific and monitoring surveys collated into a geodatabase and available for use in re-zoning DMNP; • WCGA are interested to learn about MPA Management Effectiveness Assessment methods and to monitor progress.
2. Scientific knowledge about marine biodiversity and flagship species is increased and national capacity for monitoring is strengthened by training in scientific and participatory monitoring methods, generating data for use in biodiversity planning and management.	2.1 Acoustic monitors procured and shipped to Sudan and deployed in-water in Year 1 and maintained to project end. Focal species tagged in Year 2 and 3. 2.2 Data derived on spatial movement patterns of key elasmobranch species.	2.1 and 2.2. Invoices from the procurement of acoustic tags and monitors;	• No problems encountered in transporting acoustic telemetry equipment to Sudan; • No significant natural or man-made impacts occur in the study region during the project that impacts the environment and /or prevents the

	2.3. 3 x Sudanese students trained and participating in telemetry fieldwork to generate data on the spatial ecology of focal elasmobranchs in Year 3. 2.4 Elasmobranch telemetry data collated and analysed annually (after each field survey) and report summarising results prepared in Year 3, and shared with relevant government stakeholders. 2.5 At least 50% of dive operators (5 out of the 10 companies) currently operating in Sudan reporting daily results to Divers Aware of Sharks (DAS) monitoring programme by end of Year 1 and continuing through to Year 3. 2.6 Sudanese staff member regularly liaising with dive operators and collecting DAS results. 2.7. 4 x WCGA Officers / Students trained and qualified SCUBA divers by the end of Year 1 and able to participate in monitoring surveys by the end of the project. 2.8. 4 x Sudanese nationals trained and able to implement coral reef monitoring surveys by the end of the project. 2.9. Coral reef monitoring data collated and analysed annually (after each field survey) and report summarising results prepared by Year 3 and shared with relevant government stakeholders. 2.10. Geodatabase populated with existing and new datasets.	2.3 and 2.4 Elasmobranch Survey/Telemetry Training Report (incl. training log); Video and photographic records; 2.5. Data collected from dive operators participating in Divers Aware of Sharks programme entered in database; 2.7 Dive certificates of trainees; 2.8 and 2.9. Coral Reef Monitoring Report (incl. training log); Video and photographic records; 2.10 Geodatabases with results of all monitoring and scientific surveys (e.g. derived telemetry data/coral reef	team from undertaking required field work and training; • No significant equipment failures or losses; • Suitable trainees are identified and remain in the same institution at least for the duration of the project; • Commitment and consistency of dive operators participating in DAS surveys and assisting fieldwork operations; • Continued support by WCGA for all fieldwork operations.

		surveys), existing habitat maps and other satellite derived environment variables (temperature, chlorophyll etc);	
3. Livelihood diversification and improved socio-economic resilience of the communities of Mohammed Qol and Dugonab achieved through providing access to micro-finance to support alternative sustainable IGAs, with a particular focus on IGAs associated with the dive industry, leading to an increased understanding of the economic value and benefits of healthy marine ecosystems.	3.1 Two Community-Based Microfinance Committees established for communities living inside DMNP (Dungonab and Mohammed Qol), results in increased self-employment in nature-based livelihood activities and generate revenue in both Dungonab and Mohammed Qol coastal villages. 3.2 Gender-balanced business plans for nature-based ecotourism livelihood opportunities prepared by the end of Year 1. 3.2B. Ecotourism training delivered to 10 to 15 Sudanese stakeholders in Year 3. 3.3 Ecotourism guidelines developed by the end of Year 2, and training provided to 10 x dive operators and 10 x local community representatives by end of Year 3. 3.4 Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance). 3.9. Percentage of dive boat operators and/or number of tourists engaging in community-based income generating activities (guided village tour, guided sea tour on a traditional fishing boat, purchasing items from local artisans, camel tour, etc.), increases from 0%(0) baseline in Year 1 through to 20%(XX) the end of Year 3.	3.1 Updated Community Based Livelihood Assessment Report; 3.2 Business plans; 3.2B Tourism training workshop report training 3.3. Ecotourism guidelines and training workshop report. 3.4 Report on development of community-based initiatives that deliver new livelihood and income generating activities 3.9 Report on dive boat operator survey	• Community based livelihood assessment identifies viable gender balanced livelihood options; • Interest of local community in the proposed CB-MFC and trust established; • Access to loan capital from local banks and/or MFIs operational in Red Sea State successfully facilitated; • Local acceptance of gender equity in the composition of trainees within CB-MFC; • Training and support provided to CB-MFC is sufficient to ensure that participants are able to meet repayment and reporting conditions; • Commitment of dive operators to engage their clients with local community based organisation; • Political situation in Red Sea State remains sufficiently stable and tourist visitor numbers remains stable (or increases); • Socio-cultural and economic environment flexible enough to accommodate change; • Resilience of the local communities considered (capacity to scope with abrupt changes - no more tourism coming because of extreme events).

4. Increased awareness of the globally significant marine biodiversity and flagship species found in Sudan's Red Sea among a broad range of national, regional and international stakeholders	4.1 Sudanese Project Coordinator recruited in Year 1, leading day-to-day implementation of project activities through to Year 3.	4.1. Staff contract	• Suitable local project coordinator with relevant skill base and expertise can be found and employed person is committed to the overall goals of the project; • Project Steering Committee (existing) continues to provide guidance and support for the successful implementation of Darwin Initiative project; • Adequate support provided to ensure that a local community representatives and other key stakeholders can all participate in Annual Stakeholder Workshops; • Results of sufficient quality to be of interest to scientific community; • Interesting results and scientific findings from the Darwin Initiative project are clearly communicated to the media and scientific community.
	4.2 Project Steering Committee (existing), composed of representatives of key partner organisations, support the implementation of the Darwin Initiative project helping to monitor progress and delivery from Year 1 to Year 3.	4.2. Report from Project Steering Committee	
	4.3 Bi-annual Darwin reports summarising project findings and reporting on progress and delivery of project outputs.	4.3. DI project reports	
	4.4 Annual Stakeholder Workshop participant lists and feedback forms (x3).	4.4. 3 x Annual Stakeholder Workshop Reports; Workshop participant lists and feedback forms;	
	4.5 500 x Poster about the project produced in Year 2 distributed to tourist establishments, dive operators, schools and other Red Sea State government departments by the end of the project.	4.5. Poster showing project objectives, results and biodiversity hotspots in Sudan Red Sea;	
	4.6 At least two peer-reviewed paper submitted to a peer-reviewed scientific journal by the end of Year 3; Results presented at one or more international scientific conferences by the end of Year 3;	4.6. Scientific papers submitted to peer-reviewed journals; Proceedings of international conferences;	
	4.7 Number of press releases to national radio, newspapers and TV in Sudan, UK and internationally in Year 1, 2 and 3.	4.7. All media (newspaper, radio and TV) coverage documented and summarised;	
	4.8 Project website established and accessible online by end of Year 1 with regular updates broadcast through other forms of social media (e.g. Facebook,	4.8 Project webpage hosted on Cousteau website and updates to website broadcast through newsfeeds on project partners facebook pages.	

	Twitter) in Year 2 and 3.		

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

Activity 1.1. Community Visioning Workshop (x1) held with a broad group of stakeholders (local community members, businessmen, state and federal government officials), and communications on progress maintained through Output 4.

Activity 1.2. Existing park building in DMNP renovated to act as both a Ranger Station (an office, accommodation, and basic research facilities) and a Visitors Centre to act as the hub for nature-based ecotourism activities.

Activity 1.3. Procure two small vessels and other equipment needed for monitoring, control and surveillance in existing 2 MPAs, and facilitate related trainings (skipper licence and permits).

Activity 1.4. Update zoning plan for DMNP on the basis of the community visioning workshop and scientific surveys and identify key biodiversity hotspots for consideration as new MPAs for inclusion in MPA Network.

Activity 1.5. Meeting with WCGA Officers at the start and end of the project to complete MPA Management Effectiveness Assessments (using WWF-World Bank Scorecard method or equivalent).

Activity 2.1. Acoustic monitors array deployment inside DMNP and Sanganeb MPA and flagship elasmobranch species tagged.

Activity 2.2. Continuous data derived on spatial movements, residency, home-range and migration patterns of focal flagship elasmobranch species through telemetry techniques.

Activity 2.3. Training of Sudanese partners in telemetry field methods for elasmobranchs (x 3), telemetry array maintenance and data download and organisation

Activity 2.4. Data compilation, analysis and reporting of elasmobranch movement data (telemetry).

Activity 2.5. Training of Sudanese staff member to liase with regional dive industry over Divers Aware of Sharks monitoring project

Activity 2.6. Data compilation, analysis and reporting of DAS monitoring surveys.

Activity 2.7. Training of WCGA Officers / students in SCUBA diving

Activity 2.8. Training of Sudanese partners in coral reef monitoring survey methods (Cousteau Divers, Reef Check) and field surveys (x 3) to implement monitoring.

Activity 2.9. Data compilation, analysis and reporting of coral reef monitoring surveys.

Activity 2.10. Preparation of geodatabase to consolidate existing and new monitoring datasets (e.g. DAS data, telemetry data, coral reef monitoring etc), and satellite derived environmental characteristics (e.g. sea surface temperature, chlorophyll) providing the basis for spatial planning and re-zoning of DMNP.

Activity 3.1. Field visit to refine outcomes from previously completed coastal livelihood assessment in the two villages in DBMP (Mohammed Qol and Dungonab).

Activity 3.2. Prepare business plans for nature-based ecotourism livelihood opportunities that are both equitable and gender balanced.

Activity 3.2B. 4 day ecotourism workshop.

Activity 3.3. Develop ecotourism guidelines and deliver training to familiarise WCGA rangers, dive operators and local community representatives with guidelines.

Activity 3.4. Establish 2 x Community-based Microfinance Committees (CB-MFCs), one in Dungonab and the other in Mohammed Qol.

Activity 3.5. 2 x CB-MFC trained in business skills (book-keeping, planning and financial management, marketing and quality control, legal issues) in Year 2.

Activity 3.6. Establish and maintain linkages with local banks and MF providers to support self-employment and income generation activities among park population for Dungonab and Mohammed Qol

Activity 3.7. Provision of support to the 2 x CB-MFCs and monitoring of performance, to ensure repayment and reporting conditions are met.

Activity 3.8. Livelihood impact Assessment in the two communities of Dungonab and Mohamed Qol

Activity 3.9. Monitoring of the economic value of the dive industry and tourist numbers engaging in IGAs.

Activity 4.1. Sudanese staff recruited and trained to lead day-to-day project activities and communications with stakeholders.

Activity 4.2. Bi-annual Project Steering Committee meetings for Darwin Project to discuss project progress and monitor delivery.

Activity 4.3. Preparation of bi-annual Darwin Initiative Project reports.

Activity 4.4. Annual Stakeholder Workshops held with a broad group of stakeholders to keep them up to date on Darwin Initiative project findings (x3)

Activity 4.5. Prepare a poster summarising key project outcomes for distribution to dive operators and other organisations in Red Sea State of Sudan.

Activity 4.6. Prepare scientific paper(s) for submission to peer-reviewed journals and present findings at international conference.

Activity 4.7. Prepare media statements and popular articles to communicate interesting findings/actions to national, regional, and international newspapers and TV.

Activity 4.8. Prepare dedicated project website to disseminate project news/results, and broadcast updates using social media (Twitter, Facebook)

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
TRAINING MEASURES								
2	Number of people to attain Masters qualification (MSc, MPhil etc.)	Male	UK	1	0	0	1	1
3	Number of people to attain other qualifications (e.g. Not standard measures 1 or 2 above) *	Male Male / Female	Sudan Other	0	0	10 13	10 13	4
4A	Number of undergraduate students to receive training *			0	5	0	5	4
4B	Number of training weeks to be provided				2	0	3	1
4C	Number of postgraduate students to receive training *				5	1	6	5
4D	Number of training weeks to be provided				2	1	3	1
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) *	Male and Female		0	24 7	2	1	20
6B	Number of training weeks to be provided				2	1	3	2
7	Number of (e.g., different types - not volume - of material produced) training materials to be produced for use by host country			2	2	8	10	4
RESEARCH MEASURES								
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country			1	1	1	3	2
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording			2	2	1	5	2
11A	Number of papers to be published in peer reviewed journals			0	2	1	3	2
11B	Number of papers to be submitted to peer reviewed			0	0	2	2	0

	journals							
12 A	Number of computer based databases to be **established** and handed over to the host country			0	0	0	0	1
12B	Number of computer based databases to be **enhanced** and handed over to the host country			0	0	0	0	1
13 A	Number of species reference collections to be **established** and handed over to the host country(ies)			0	0	0	0	1
13 B	Number of species reference collections to be **enhanced** and handed over to the host country(ies)			0	0	0	0	1
DISSEMINATION MEASURES								
14A	Number of conferences/seminars/ workshops to be **organised** to present/disseminate findings			0	1	4	5	4
14B	Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated.			1	2	8	11	3
PHYSICAL MEASURES								
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)			17 578	2 285			74 690 (45 520 from Co-financing)
21	Number of permanent educational/training/research facilities, structures, or organisations to be established and then continued after Darwin funding has ceased			0	0	0		1
22	Number of permanent field plots and sites to be established during the project and continued after Darwin funding has ceased			0	0	0		20
FINANCIAL MEASURES								
23	Value of resources raised from other sources (e.g., in addition to Darwin funding) for project work			56 525	36 032	32 582	92 557	125 139

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Sharks and Rays of Sudan. A conservation and management programme benefiting local communities*	Leaflet in Arabic and English	Noémie Stroh, Nigel Hussey, Abdel Rahman El Mahdi, Rebecca Klaus. 2015	Female	French	Pixels Advertising (Abu Dhabi)	http://www.cousteau.org/fr/wp-content/uploads/2014/06/flyer-english.pdf http://www.cousteau.org/fr/wp-content/uploads/2014/06/flyer-arabic.pdf
EBSA area N°23: Area No. 23: Sanganeb Atoll/Sha'ab Rumi*	Report to CBD / CMS	Dirar Nasr, Tarik Chekchak, Rebecca Klaus, Nigel Hussey. 2015	Male	Sudanese	Technical report to the CBD	http://www.cbd.int/ebsa/
EBSA area N° 24 : Dungonab Bay/Mukawar Island Area*	Report to CBD / CMS	Dirar Nasr, Tarik Chekchak, Rebecca Klaus, Nigel Hussey. 2015	Male	Sudanese	Technical report to the CBD	http://www.cbd.int/ebsa/
Final Draft Management Plan for Dungonab Bay and Mukkawar Island National Park 2016-2021	Management Plan	Klaus 2016	Female	British	PERSGA	Not available online.
The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site	Poster exhibit	Cousteau Society	Male	Tarik Chekchak	Cousteai Society	Not available online
Conservation: Sanctions derail wildlife protection,	Scientific paper	Hussey et al. (2014)	Male	Nigel Hussey	Nature	Nature, 514, 305.
Aquatic animal telemetry: A panoramic window into the underwater	Scientific paper	Hussey et al. (2015)	Male	Nigel Hussey	Science	Science. 34 (6240) 1255641-1.

world						
Conservation of reef manta rays (Manta alfredi) in a UNESCO World Heritage Site: Large-scale island development or sustainable tourism?	Scientific paper	Steven Kessel, Nasreldin Alhasan, David Yurkowski, Tarik Chekchak, Ryan Patrick Walker, Rebecca Klaus, Graham Hill, Nigel Hussey	Male	British	PlosOne	Not available online (yet).

Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

See the link provided in the submission email.

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Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	Y
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	N
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	N
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	