Darwin Initiative
Final Report

*To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/) it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

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 2018 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.
Project leader's name	Tarik Chekchak and Rebecca Klaus
Project website/blog/Twitter	http://sudanmarineparks.info http://www.cousteau.org/projects/protect-sharks-and-rays-of-the-red-sea/ Facebook: @sudanmarineparks Twitter: @sudanmarinepark Instagram: sudan_marineparks Email: info@sudanmarineparks.info Hashtag: #Sudanmarineparks
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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.

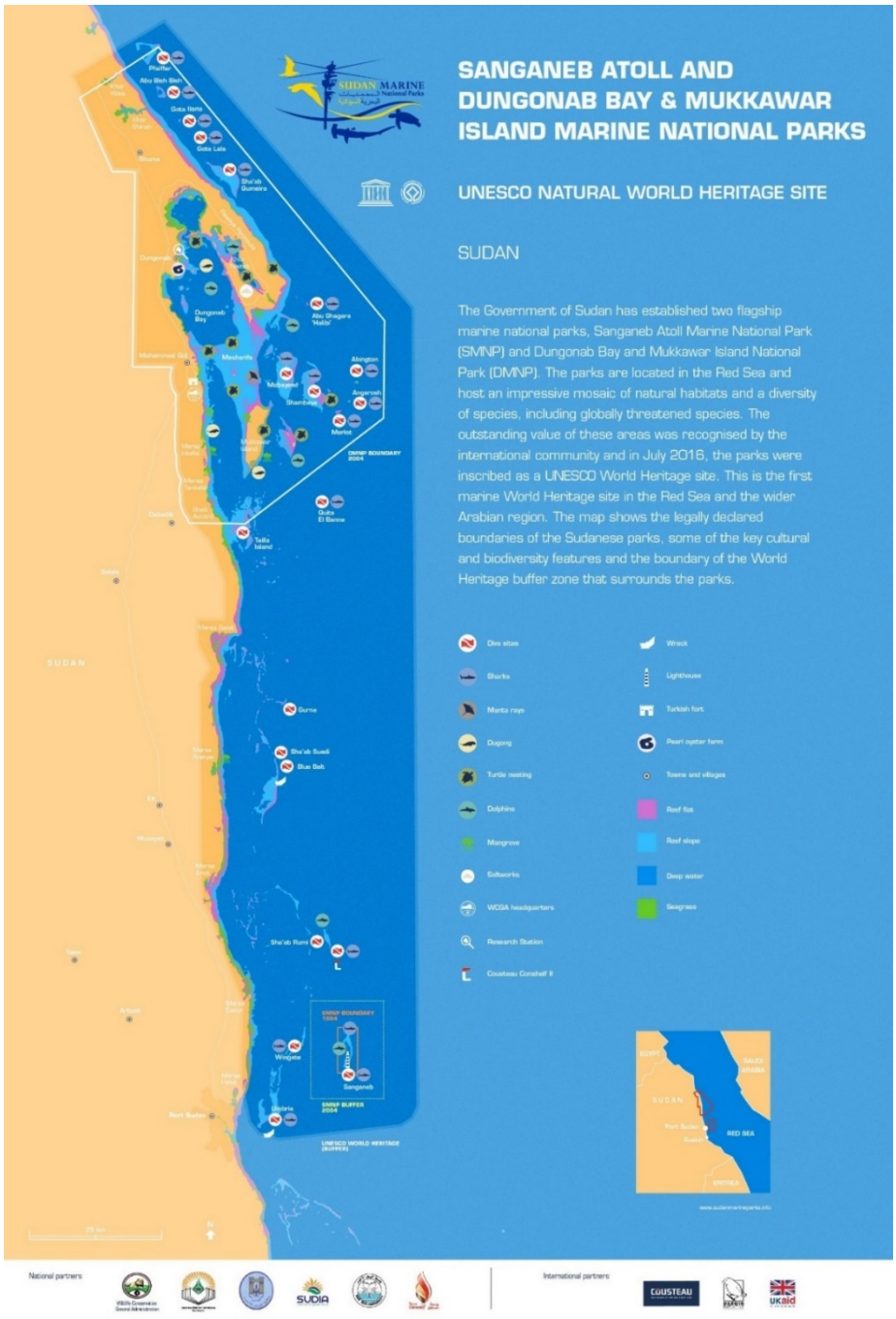

Figure 1: Map showing the location of Sudan's two national parks, Dungonab Bay and Mukkawar Island National Park (DMNP) and Sanganeb Marine National Park (SMNP).

Sudan borders the Red Sea (see Figure 1), 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.

Sharks 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.

2 Project Partnerships

At the outset the project had two international partners, Equipe Cousteau and the University of Windsor Canada and two national partners, which included SUDIA, a Sudanese NGO and the Wildlife Conservation General Administration (WCGA). The role of these and other partners (Red Sea University and the Red Sea State Ministry of Tourism and Environment) and these evolved through the project is described below:

EQUIPE COUSTEAU: Equipe Cousteau was founded by Captain Jacques-Yves Cousteau in France in 1982. It is the sister organisation of the Cousteau Society, which is a not-for-profit organisation that was created in 1973 in the US. Both organisations focus, among other goals, on the equilibrium between humanity and nature on the world's oceans. Cousteau has had a long term involvement in Sudan as it was the location of the film "*The World Without Sun*", and where Cousteau launched the Conshelf II experiment, which aimed to test whether or not humans could live underwater for extended periods of time. Equipe Cousteau conducted a commemorative visit to Sudan in 2004 with the Alcyone. Then in 2007 Equipe Cousteau supported a multidisciplinary survey of the whole coast of Sudan during the ICZM project, which seeded the Sharks and Rays Programme. The team supporting the project were previously directly involved in: the designation of DMNP (PERSGA MPA-SAP, 2001), baseline biodiversity assessments and monitoring of Sudan's coastal and marine ecosystems (African Parks Foundation, 2006; EC ICZM project, 2007) and setting up the citizen science programme to monitor elasmobranchs (Divers Aware of Sharks, 2007-present). In preparation for the Darwin project, and with permission from Sudanese authorities, Cousteau supported preliminary field work in 2012/2013 (seed funding from the Deep Aquarium, UK) to test telemetry tracking of focal elasmobranch species in Sudan, achieving the first surgical implantation of acoustic tags in manta rays and the establishment of an acoustic array within DMNP. Initial DNA analyses, revealed the first reported occurrence of hybridization in manta rays. During the project Equipe Cousteau was responsible for overall project management, including financial management, coordinating activities, reporting and monitoring and evaluation. Equipe Cousteau also supported other specific activities including the preparation of the joint workshop with UNESCO in Paris, organising the participation of Sudanese children in

the Oceans Conference, preparation of the promotional video, ecotourism guidelines, the mobile photographic exhibit, procurement of equipment, the proposal for Sha'ab Rumi among others as explained in the report.

UNIVERSITY OF WINDSOR: The Great Lakes Institute for Environmental Research (GLIER) at the University of Windsor is multidisciplinary faculty with collaborators from many disciplines, including biology, geology, chemistry, engineering, marine biology, molecular biology, genetics and ecology. Researchers at GLIER address cross disciplinary boundaries such as the effects of multiple environmental stressors on marine and freshwater environments. During the project the GLIER scientists, Dr Nigel Hussey and Dr Steve Kessel were responsible for executing the field research and training in relation to telemetry methods for tracking large megafauna, liaising with the dive operators for the DAS surveys, analysis of the data. Both are linked to the Ocean Tracking Network and have extensive experience of tracking species in a range of environments and undertaking advanced statistical analysis of derived data sets. Dr Nigel Hussey and Dr Steve Kessel have also maintained regular face-to-face meetings with Sudanese stakeholders during preliminary field phases in 2012/2013 and the plan was for them to continue the on the ground communication to facilitate project success. Problems encountered during the project meant that they were unable to complete all activities planned.

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. SUDIA was proposed as a potential partner in the project at the design stage by Brigadier Mohammed Younis, who was a retired former high ranking official within the WCGA that had worked freelance as a consultant to the World Bank and UNDP since retirement. Mohammed Younis had been the main champion for the MPAs in Sudan. He had collaborated closely with Equipe Cousteau on other projects since 2004 and facilitated field access in Sudan including obtaining the various security permissions and clearances. SUDIA took the lead on designing the livelihood activities included in the project during the Stage 2 Application. SUDIA's role in the project was to coordinate activities in country, which would include employing local staff, organising national Steering Committee meetings, providing logistical support to facilitate field work, and supporting the implementation of livelihoods and communication activities and the animation of workshops and training sessions. Mohammed Younis died in the first year of the project, which was a huge loss to his family and friends but also had implications for the project particularly with regards gaining the necessary permissions to have access to the field site. Like many other NGOs working in Sudan, SUDIA also faced political challenges and had their official registration status removed during the project, which prevented them from being able to operate freely in the Red Sea State (RSS). It was for this reason that the project sought other partners in the project to support the implementation of field activities.

The Wildlife Conservation General Administration (WCGA): The WCGA is the Sudanese Federal government authority legally mandated with the responsibility for the management of nationally declared terrestrial and marine protected areas in Sudan. There are state level branches including a branch in the Red Sea State which is responsible for Dungonab Bay and Mukkawar Island National Park and Sanganeb Atoll Marine National Park. WCGA MPA Department was a key partner in the project from the outset and involved from the design stage. WCGAs role in the project was considered essential for securing the long-term legacy and sustainability of the impact beyond the lifetime of the project. As such, WCGA were also the main project beneficiary for capacity building and capital investments that the project was to make in the MPAs. Previously the role of a Federal authority such as the WCGA in the management of the MPAs had been disputed by the State level authorities. This lack of clarity in part stemmed from the Eastern Sudan Peace Agreement. This issue which had been ongoing since 2007 was finally resolved in 2016 following a legal review that was completed by the PERGA Strategic Ecosystem Based Management (SEM) project. The Government of Sudan and Federal level WCGA began increasing the resources available to the MPA Department in the Red Sea State WCGA. These additional resources allowed the MPA Department to employ more rangers and recover equipment that had been deployed to other State Ministries. The WCGA MPA Department still had very limited resources, and existing infrastructure and equipment were in a state of disrepair, which meant patrolling activities were

minimal. So the additional support provided by the DI Project in terms of equipment (e.g. boats, safety, and surveillance equipment) and training (e.g. boat handling, navigation, safety at sea, SCUBA diving) has made a crucial contribution towards increasing their management capacity.

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 specified the arrangements related to training of RSU students / staff (e.g. coral reefs, elasmobranchs, ecotourism), equipment, data sharing, and publishing of scientific results. Despite this MOU the RSU was unable to overcome issues that the project faced in terms of being able to provide the project team with access the field sites.

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 defined 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 was not signed, the reasons for which remain unknown.

It is anticipated that the project partners will continue to work together in the future to continue to support the management of the MPAs in Sudan.

3 Project Achievements

3.1 Outputs

The project faced many challenges during implementation which had not been anticipated. The first challenge was the death of Mohammed Younis, our key national partner, in the first year of the project, which was a huge loss to his family and friends but also for the project. The second challenge was that SUDIA, like other civil society organisations in Sudan, faced challenges. SUDIA lost their official registration status, which prevented them from being able to operate freely in the Red Sea State (RSS) where the project is based. The project adapted and sought new partnerships with other organisations based in the RSS to help provide the logistical support and facilitate the fieldwork. The third challenge was the changes in key government officials which happened during the project (e.g. Governor of the Red Sea State, Red Sea State Minister for Tourism and Environment, and Director of WCGA at the Federal level). Despite these challenges, the project completed many of the activities planned under each of the Outputs. A summary of the projects achievements are presented below and the evidence is provided as outputs supplied as separate documents, as listed in **Annex 7**.

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 considers that it has supported a substantial increase in the national capacity of Sudan to manage their MPAs. Although it has not been possible to implement all the activities as planned, the project has adapted and implemented alternative activities that have collectively made a substantial contribution towards Output 1 within the project timeframe.

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

Change from Baseline: At the start of the project, there was no overarching vision for the future management of the MPAs in Sudan. By the end of the project Sudan's MPA had a new logo / brand, both MPAs were inscribed as a serial World Heritage site, and national stakeholders were actively collaborating in communication and outreach activities.

Evidence for Change: In the Stage 2 Application, the DI project planned to hold a facilitated visioning workshop early in the project to help bring government, civil society and community representatives together to discuss and develop a common vision for the future management of the Sudanese MPAs. The SUDIA Director, Abdel-Rahman El Mahdi and a senior staff member Ahmed Hanafi held Steering Committee meetings with relevant stakeholders to discuss the

organisation of the conference. An outline concept for a visioning workshop was prepared (**21-019 Output 1.1_01**) and a Steering Committee formed to agree on the content and format for the workshop (**21-019 Output 1.1_02**). SUDIA was unable to eventually deliver this workshop due to the political challenges. The DI project nonetheless supported other activities that directly contributed towards the development of a collective vision for the MPAs in Sudan, including the workshops and extensive social media and marketing campaign as reported under Output 4 (e.g. **21-019 Output 4.4_01, 21-019 Output 4.4_02**, **21-019 Output 4.4_03** and **21-019 Output 4.7_08**).

The foundation for the Communication Campaign was the creation of a new logo that could be used as the brand identity for the Sudanese Marine National Parks (**21-019 Output 1.1_03**). The DI Project launched an online design competition to create a new official logo for Sudan's Marine National Parks through the platform freelancer.com, with the technical support from Selection Committee composed of SUDIA, WCGA, Ministry of Tourism, Antiquities and Wildlife. Previously, there was no logo for Sudan's MPAs. The winning logo provided the WCGA and the Sudanese MPAs with a new brand identity that could be used on all the publications and promotional materials, including online, print, and merchandise, used to help promote the park and its conservation to people all over Sudan and the world.

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

Change from Baseline: At the start of the project the management authority existing infrastructure and equipment had fallen into a state of disrepair. By the end of the project, the renovated park buildings were equipped and 26 new location signs installed in DMNP and designs for new entrance and information signs prepared. Poster exhibit ready to be installed in Visitors Centre when opened.

Evidence for Change: The DI project planned to undertake renovation works to the old parks buildings in Mohammed Qol that were constructed in 2008 and had since fallen into a state of disrepair. Following the field visit reported in AR1, a project committee comprised of SUDIA, WCGA and an engineer from the Ministry of Interior reviewed proposals for the renovation of the WCGA headquarters in Mohammed Qol and selected the winning bid for this work. A contract was drawn up and the work scheduled (**21-019 Output 1.2_01**). The work was put on hold pending the resolution of the security issues.

In the meantime, WCGA secured 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). The PERSGA SEM project provided additional funding to complete the works. The WCGA HQs in Mohammed Qol are now fully renovated and functional and can comfortably accommodate two WCGA Officers and 10 WCGA rangers on a two-week rotation. The PERSGA SEM project also funded the construction of 5 new outpost buildings for rangers in DMNP and started the renovation of an old school in Mohammed Qol to act as a visitors centre.

In October 2016, the project manager Tarik Chekchak met the Director of WCGA to discuss what to do with the remaining funds allocated to this activity. The Director requested that the DI project consider reallocating the budget to cover capital investment cost in surveillance, safety and communication equipment for the boats and park buildings (e.g. life jackets, first aid kit, boat box with basic tools and flares, VHF radios, GPS) (see Indicator 1.3 below). This issue was also discussed with WCGA and PERSGA at the coordination meeting at the ARC-WH in Bahrain. During that meeting, it was recognised that the WCGA needed assistance in the design and construction of signage for the parks, including locational signage (place names), entrance signage (welcome signs) and informational signage (posters with maps and information about key features). The DI project provided support for these activities as described below:

Locational Signage: Cousteau and SUDIA supported the re-design the 26 locational signs which included the new Sudan Marine Parks Logo created through the project. The signs were reprinted and installed in DMNP by WCGA (See **21-019 Ouptut 1.2_02**).

Entrance Signs: SUDIA requested Iskan Architecture Design to develop four designs for use as entrance signs for the marine national parks See **21-019 Ouptut 1.2_03**). The architecture

firm prepared four sign designs and provided full costing for the construction of these signs. The DI Project team are seeking co-financing to support construction of the signs.

Information Signboards: The DI project team prepared two posters and various fact cards that were used online and printed on foam board for use in the communication campaign. The most recent poster (**21-019 Output 4.5_03**), includes a map and key facts about the characteristics of the parks, which can be used as the basis for the information sign boards.

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.

Change from Baseline: At the start of the project, WCGA had two small boats and two engines, both of which were broken. By the end of the project, WCGA had one new patrol boat purchased by DI Project and a second boat provided by PERSGA. Both boats are equipped with life-jackets and other safety and surveillance equipment. 10 WCGA staff and ranger have been provided with training in maritime skills and safety at sea and English language training.

Evidence for Change: SUDIA requested quotes for the purchase of two (2) semi-rigid inflatable boats equipped with outboard engines (**21-019 Output 1.3_01**) and an Egyptian vendor was selected. A purchase order was issued with delivery of the boats scheduled for Q2/2015, but the order was temporarily placed on hold due to the security issue. In the interim, the WCGA requested a change in the specifications of the boats, as they preferred to receive a fibre-glass boat with outboard engines, which can be made and maintained in Sudan. SUDIA requested a new quote (**21-019 Output 1.3_02**), but as the new quote was more expensive, it was only possible to purchase one of the two boats and an engine within budget. This boat was delivered to the WCGA in Port Sudan in March 2016 (**21-019 Output 1.3_03**). The PERSGA SEM project ordered a second boat for the WCGA which was delivered in March 2018.

As reported above under Indicator 1.2, in October 2016, the project manager Tarik Chekchak met the new director of WCGA to discuss equipment. The DI project team prepared a fully costed and detailed list of equipment, and the list was discussed and agreed with the Director at WCGA and the General Manager for MPAs. The equipment list was also discussed with PERSGA SEM, the Director for WCGA in Khartoum and the General Managers for MPAs during the partnership meeting in Bahrain.

The equipment was procured in two tranches (**21-019 Output 1.3_04**). The heavy and hazardous equipment was procured through a local company based in Port Sudan, that placed the order through contacts he works with in Dubai. The heavy equipment was delivered to WCGA on 23rd October 2017. The smaller items and electronic equipment that were not readily available in Sudan, or were likely to be substantially more expensive, were procured in France. Multiple quotes were obtained from different companies to ensure that the best prices were obtained. Full details about the equipment purchased is provided in **21-019 Output 1.3_05**.

With regards training, both SUDIA and Cousteau prepared costings for additional training courses. Cousteau prepared a draft term of reference for an intensive formal MPA ranger training course, and received quotes form specialised organisations with the experience to be able to deliver formal ranger training courses **21-019 Output 1.3_06.** The project did not proceed as it was beyond the scope of the budget (**21-019 Output 1.3_07**). Furthermore, there was a change in the Director of WCGA in 2017 and the new Director did not respond to correspondence about the proposed training. SUDIA then organised for 10 WCGA staff to attend English language training courses in Port Sudan and for 10 WCGA rangers to be trained at the Navy School in Port Sudan in maritime skills and safety at sea (**21-019 Output 1.3_08).**

Moreover, following the Navy School Training delivered to the WCGA rangers and their acquisition of the boat procured through the DI project, WCGA rangers patrolling Sanganeb have begun to collect data on the number of boats and divers visiting the site. Three computers that were purchased through the project are being used to enter and maintain the data collected.

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.

Change from Baseline: The zoning plan prepared for Dungonab Bay and Mukkawar Island National Park (DMNP) in the 2004 Site Specific Master Plan was updated in consultation with local community and; a new zoning plan for World Heritage Site is in preparation. Proposal to include Sha'ab Rumi as Sudan's third MPA submitted for consideration by national authorities, presented at 42nd World Heritage Committee meeting.

Evidence for Change: The existing 2004 zoning plan for DMNP was discussed with the local communities in 2015, and additional participatory mapping was completed to map out resource use patterns and local knowledge about the distribution of critical habitats, such as the location of grouper spawning sites and a new draft zoning plan for DMNP was prepared. The draft zoning plan for DMNP is in the process of being revised to integrate the new scientific data (e.g. data recovered from the VR2W monitors and from studies recently completed by the RSU). This zoning plan will form part of the new Integrated management plan for the World Heritage site. It is not included as an output here as it is not yet publicly available as further national consultation is needed before it can be publicly released. These additional consultation processes will be supported through the PERSGA SEM project.

When the Sudanese Marine National Parks were inscribed as a serial World Heritage Site in July 2016, the DI project prepared a new map showing the World Heritage site (see Figure 1). This map was used on pop up banners and in a poster for use in the communication campaign to increase awareness of the site boundaries. In 2017, WCGA asked the 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 within 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**).

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.

Change from Baseline: At the start of the DI Project, the WCGA were not using any form of management effectiveness assessments. MPA management effectiveness assessment score was 21% in January 2015 and 52% in February 2017, an increase of 30% during the project.

Evidence for Change: The staff were trained in how to complete the WWF-GEF MPA Scorecard assessment for management effectiveness (Staub and Hatziolus, 2004) and completed the MPA Scorecard for DMNP and SMNP in January 2015. 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 **21-019 Output 1.5_01**. The results of the MPA management effectiveness assessment show an 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. 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 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.

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.

Many of the activities originally proposed under Output 2 were not implemented due to the team not being able to access the field site. Despite this, activities that were completed have contributed towards achieving the intended Output. Scientific knowledge about the marine biodiversity and flagship species in the Sudanese Red Sea has increased because of the project. The data collected during the project have been used to produce three scientific papers and used in updating the management plans for DMNP and the World Heritage site. So the data generated is being directly used in biodiversity planning and management for the focal species of conservation concern. The project has not delivered the planned scientific 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.

Change from Baseline: Tags and monitors were procured and shipped to Sudan.

Evidence for Change: Additional acoustic telemetry equipment and tags were procured and shipped to Sudan. The project planned to conduct annual field surveys to recover, service and re-deploy the existing VR2W monitors and tag more animals. During the field phase, DI project staff from the University of Windsor, Cousteau, The Deep Aquarium were to work with and train students and staff from the RSU in tagging techniques and how to maintain the monitors (as well as other activities such as coral reef monitoring). Neither the local NGO nor the RSU could obtain the permissions needed for the University of Windsor scientists to continue the field surveys, despite the new MOU (**21-019 Output 2.1_01**). The existing monitors were recovered, the data downloaded and transferred to the University of Windsor team for analysis. The equipment purchased under the project was transferred to the RSU as per the MOU and has remained in storage. Training in the use of these equipment has not yet been delivered.

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

Change from Baseline: No data on the spatial movement patterns of key elasmobranch species. Data on key elasmobranch species derived from satellite tags and acoustic monitors.

Evidence for Change: As described under 2.1, the activities that were to contribute to this delivery of this indicator were to be completed by the DI project in partnership with the RSU as per the MOU (**21-019 Output 2.1_01**). As field access was not possible, efforts were focussed on publishing papers from the existing data and recovering new data from the VR2W monitors deployed inside the parks and offshore reefs (see **21-019 Output 4.6_01, 4.6_02 and 4.6_3**). Data was successfully recovered from 34 monitors and the analysis of the full dataset is ongoing by University of Windsor staff. The remaining monitors and tags were left at the RSU as per the MOU agreement (except 10 monitors which needed to be sent for repair). Notable initial observations from these data suggest a northwards movement of all tagged animals. There was repeated detection of hammerhead sharks 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, 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. The data will be shared within 2 years of the project closing.

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.

Change from Baseline: No Sudanese students trained and participating in telemetry field work. Basic training provided to 3 RSU staff (male).

Evidence for Change: As explained under 2.1 and 2.2 above, it was not possible for the DI project team to deliver the training in acoustic telemetry techniques to students / staff at the RSU as agreed in the MOU (**21-019 Output 2.1_01**). A short (½ day) training was provided to RSU staff in April 2017 by Dr Rebecca Klaus covering basics maintenance (e.g. how to replace batteries and download the data from the VR2W monitors). More in-depth training would be required if the RSU staff are to be able to make proper use of the equipment.

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.

Change from Baseline: No elasmobranch telemetry data being collated and analysed annually. Available data recovered, collated and analysed.

Evidence for Change: The data collected on sharks and manta ray movement patterns was collated and analysed and to date three papers have been published, including a new paper published in PlosOne (see **21-019 Output 4.6_01, 4.6_02 and 4.6_3**). The analysis of the data from the VR2W bottom monitors is ongoing by scientists at the University of Windsor.

Indicator 2.5. Sudanese staff member regularly liaising with dive operators and collecting DAS results.

Change from Baseline: No Sudanese staff member regularly liaising with the dive operators collected DAS data on a regular basis.

Evidence for Change: The local NGO employed an Operations Officer who was to be based in Port Sudan and was to serve as the local contact point that would liaise with the dive operators and collected the Divers Aware of Sharks (DAS) data. When it was no longer possible for SUDIA to have a staff member based in Port Sudan, a dive master and PhD student were identified and tasked with the responsibility of liaising with the dive operators. The dive master had family issues and was unable to return to Sudan and the PhD student has since gotten married.

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.

Change from Baseline: One dive operator regularly collecting data using the DAS surveys.

Evidence for Change: Only one of the dive operators has continued to collect data for the DAS surveys. This is certainly partly due to the DI project not being able to deploy their staff to provide the dive operators and new dive masters with the training and support needed. In the meantime, the number of local dive boat operators working in Sudan has decreased while the total number of boats has increased, and most now originate from Egypt. A Masters student from the University of Cardiff (UK) compiled and analysed the existing DAS data from 2008 to 2012 as part of his MSc thesis submitted in 2015. The data from 2012 to 2017 was obtained in February 2017 and the data have now been organised and analysed (**21-019 Output 2.6_01**).

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.

Change from Baseline: At the start of the project none of the WCGA Officers were qualified as SCUBA divers. 4 WCGA Officers and 3 RSU students (male) were qualified SCUBA divers.

Evidence for Change: SCUBA dive 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**.

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

Change from Baseline: 4 RSU staff (male) in coral reef monitoring team

Evidence for Change: A skills assessment completed early into the project identified the need for additional 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. But due to issues with field access this training was not delivered.

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.

Change from Baseline: Data from previous surveys not accessible to others. Archive data now catalogued and ready to be shared with national partners.

Evidence for Change: Archive field data have been compiled and catalogued and a scientific paper is in preparation. Data will be shared within 2 years of the project closing.

Indicator 2.10. Geodatabase populated with existing and new datasets.

Change from Baseline: At the start of the project there was a geodatabase with some existing data. The geodatabase has been updated and will be made available to national authorities. GIS training was delivered to 14 students / staff. Training in MARXAN systematic conservation planning software delivered to 16 Sudanese students / staff.

Evidence for Change: A geodatabase has been updated and populated with the spatial datasets and will be shared within 2 years of the project closing. These datasets were used in the preparation of the Final Draft Management Plan for Dungonab Bay and Mukkawar Island National Park completed in 2016 (Klaus 2016) and in updating the zoning plan for the integrated management plan for the World Heritage site in 2018. An introductory training

course in the freeware software QGIS was delivered at 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, with joint funding from IGAD (**21-019 Output 2.10_02**). Both the QGIS and Marxan training courses were well received (see post-course evaluation questionnaires).

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.

The projects livelihood related work has focussed on supporting alternative livelihoods options that relieve pressure on the use of natural resources and that may be supported through small revolving loans to individual community members. It also probed sustainable ecotourism potential, improving our understanding about the tourism sector and possible mechanisms through which the local communities can benefit from both domestic and international tourism, particularly with regards to the dive sector.

SUDIA undertook a study to identify effective opportunities and approaches for the diversification and improvement of livelihood for community's resident in the two villages, Mohammed Qol and Dungonab in the MPA. The study provided suggestions for alternative income generating activities (IGA) that can be offered to communities through micro-finance and that would strengthen the livelihoods and socio-economic resilience of the resident communities, but that would at the same time serve to reduce pressure on marine resources (see **21-019 Output 3.4_01)**.

SUDIA was unable to continue its livelihoods activities, but having now regained their registration these activities. At the close of the project the local NGO SUDIA was in the final stages of delivering these activities in the communities.

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

Change from Baseline: Before the project, there were no gender balanced business plans for nature-based ecotourism livelihood activities. Now there are three business plans for nature-based ecotourism livelihood activities available.

Evidence for Change: The ecotourism consultant (Dominique Verdugo) visited DMNP between 24th November and 14th December 2017. She provided recommendations on the next steps and the report includes various initial business concepts and three outline business plans for nature-based ecotourism, focussing on the domestic market (**21-019 Output 3.2_01**).

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

Change from Baseline: Before the project, there had been no ecotourism training delivered in Sudan. The project delivered a sustainable ecotourism training to 24 participants in Port Sudan.

Evidence for Change: This activity was added during the change request, submitted in March 2016. The ecotourism 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, course materials delivered are presented in **21-019 Output 3.2_03a-g**.

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.

Change from Baseline: Before the project there were no ecotourism guidelines available. Ecotourism guidelines have been delivered to dive operators; training of local community members in these guidelines is ongoing.

Evidence for Change: Cousteau developed draft ecotourism guidelines for manta rays, sharks, dugongs, sea turtles, which were discussed with two of the locally based dive operators in February 2017. The dive operators expressed their interest in the guidelines and said that they would be useful. The DI project team delivered the final guidelines (**21-019 Output**

3.3_01) and has maintained communications with the dive operators over the past year and discussed the need for them to form a dive operators association. Feedback from the dive operators is that the guides are useful and they use them in dive briefings and ask their clients to read them. In the meantime, the PERSGA SEM project purchased two glass bottomed boats that were delivered in May 2018. The PERSGA SEM project also installed a new jetty in Dungonab to compliment the existing jetty in Mohammed Qol, so the glass bottomed boat can be accessed at low tide. At project close our local partner SUDIA was in the process of planning for the delivery of a training course in the ecotourism guidelines to the local communities that will be using these boats with visiting tourists.

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

Change from Baseline: No new community based initiatives that deliver collaborative livelihoods and income generating activities. SUDIA to support livelihood work.

Evidence for Change: This was a new indicator was added the last change request, submitted in March 2016. SUDIA visited the site in Jan-Feb 2015 and prepared a document summarising livelihood options discussed with local communities (**21-019 Output 3.4_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.

In the last six months of the project, the project team decided to adapt and seek an alternative approach to support the livelihoods and socio-economic resilience of the communities in DMNP by building on previous or existing interventions that existed through the PERSGA project. Livelihoods of male community members would be supported through developing their understanding and capacity of eco-tourism such that they would use that knowledge with tourists who would be visiting the area and paying for trips on the glass bottom boats provided by the PERSGA project. Women livelihoods would be supported through an upgrade to an existing baking and confectionary operation (that was initially supported through the PERSGA) which would allow a greater number of women to acquire skills and produce biscuits and other baked products to be sold in both the villages as well as neighbouring areas. This approach would not require the full-time presence of a staff member from SUDIA and could easily be delivered as a one-off activity. At the close of the project the local NGO SUDIA was in the final stages of delivering these two activities in the communities.

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.

Change from Baseline: No dive operators working with the local communities. One out of five locally based dive operator working with local communities.

Evidence for Change: One of the locally based dive boats, Maria Cristina who operates La Dolce Vita, ran her first sea/land safari in February 2017. The DI project team worked with her remotely to help support the development of this activity. Then Maria Cristina then decided to stop operating in Sudan in response to the Red Sea State Ministry of Tourism and Environment decision to issue a larger number of permits to Egyptian safari operators. This situation poses a serious threat to the future sustainability of the dive sector in Sudan's marine World Heritage site. The Sudanese-based boats tend to anchor away from the dive sites and deploy divers to the sites by small tenders. The Egyptian dive operators tend to anchor directly on top of the dive sites and deploy divers from the back of the boats. This means more anchor damage to the reefs and disturbance to the megafauna caused by the anchor noise. Cousteau prepared a departure survey for divers to collect more data on the situation (**21-019 Output 3.9_01**). The surveys have not been completed as PhD student from the RSU that was tasked with the responsibility has since gotten. The project intends to follow up on this activity.

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

Progress towards Output 4 has been very good. The recognition by the CBD of the EBSAs within Sudanese waters and the inscription of Sudan's MPAs as a UNESCO World Heritage site in July 2016 and the Communication Campaign about the site, and parallel education and outreach activities have all contributed towards increased awareness of the globally significant marine biodiversity and flagship species found in Sudan's Red Sea at the local, national, regional and international level.

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

Change from Baseline: No Project Coordinator. SUDIA employed 2 new staff in the past year to lead the Communication Campaign.

Evidence for Change: SUDIA initially employed a staff member who was based in Port Sudan. After SUDIA lost their registration this position was no longer tenable. SUDIA employed two new members of staff to work on the Communication Campaign. One staff member left and a new staff member was recruited to assist on 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.

Change from Baseline: Project Steering Committee composed of representatives of key partners. Informal meetings of key project partners in country and committees focussed on specific activities (e.g. Multi-stakeholder Committee for the Communication Campaign).

Evidence for Change: The pre-existing Project Steering Committee was formed under the previous Sharks and Rays Programme. After death of our key partner Mohammed Younis, the project started to have problems and certain members of the committee wanted to get paid for serving on the committee and for facilitating field access. Given this attitude towards the project, the team decided to stop the meetings. The DI project team and partners otherwise proceeded to garner support for the project through individual consultations and meetings with national stakeholders, and in particular through the individual members who served as part of the advisory committee to the Communication Campaign. See Indicator 1.1 and 4.4**.**

Smaller committees were formed to support specific activities. For example, SUDIA established a Multi-Sector Advisory Committee to act as a consultative body for the Communication Campaign. The Committee's purpose was to ensure that key messages, delivery mechanisms, audiences and awareness material of the Campaign were accurate and effective (**21-019 Output 4.2_01)**. The Advisory Committee was comprised of 17 individuals from a range of sectors and expertise including, representatives from the Wildlife Conservation General Administration (WCGA), Sudanese National Commission for UNESCO, Marine Environment Protection Society Sudan (MEPSS), Sudanese Environment Conservation Society (SECS), UNESCO Chair of Marine Biology and Oceanography (MBAOUC), Red Sea University, Environment Initiative (EnvI), Ministry of Tourism, UN Environment, Equipe Cousteau, Fisheries Research Centre and the Ministry of Environment (**21-019 Output 4.2_02**).

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

Change from Baseline: Annual and half year reports submitted.

Evidence for Change: HY1, AR1, HY2, AR2, HY3, AY3, HY4, Final Report

Indicator 4.4. Technical Workshop to assess how Darwin Initiative project findings could contribute to the enlisting of the MPAs as a UNESCO World Heritage site..

Change from Baseline: No Annual Stakeholder Workshops about the Sudanese MPAs. Project has supported or participated in annual meetings to coordinate activities.

Evidence for Change: This was a new indicator was added the last change request, submitted in March 2016, which replaced the indicator, "Annual Stakeholder Workshop participant lists and feedback forms (x3)". The DI project team and partners requested this change because it anticipated not being able to hold these workshops. While the project did not manage to hold workshops at the national level it did manage to have formal annual meetings outside Sudan

with national, regional and international partners to coordinate and support collaboration on project activities (see **21-019 Output 1.1_02, 21-019 Output 4.4_01, 21-019 Output 4.4_02, 21-019 Output 4.4_03, 21-019 Output 4.2_03**, and **21-019 Output 4.7_08**). These included the proposed technical meeting to assess how the project could support the nomination process for UNESCO World Heritage and three other meetings as follows:

- *"CBD Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) in the North-West Indian Ocean and Adjacent Gulf Areas"*, 19th to 25th April 2015, Dubai, United Arab Emirates (attended by Tarik Chekchak, and remote support provided by Rebecca Klaus and Nigel Hussey).
- *"Sanganeb Atoll and Dungonab Bay-Mukkawar Island National Parks in Sudan: Strengthening scientific partnerships to support the listing of both Marine Protected Areas as a UNESCO World Heritage Site"*, 25th February 2016, UNESCO Headquarters, Paris, France (whole project team plus additional Sudanese representatives).
- *"Coordination Meeting for Sanganeb Marine National Park and Dungonab Bay - Mukkawar Island Marine National Park"*, 9th and 10th of May 2017 Arab Regional Centre for World Heritage, Manama, Bahrain (attended by Tarik Chekchak and Rebecca Klaus, WCGA Director and General Manager of MPAs, Sudanese UNESCO NATCOM).
- *"How scientific knowledge on oceans can contribute to the implementation of national action plans on climate and human-induced changes"*, 5th June 2017, United Nations Headquarters, Conference Room 6, UN Headquarters, Oceans (Rebecca Klaus).

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.

***Change from Baseline*:** No recent posters or education outreach activities about the Sudanese MPAs or World Heritage site. Two posters produced, 10 copies of the first poster printed and distributed; 200 copies of the second poster printed and distributed.

Evidence for Change: At the start of the project, a new poster was prepared explaining about the MPAs in Sudan (**21-019 Output 4.5_01**). 10 copies of this poster printed and distributed to key stakeholders in Sudan, including British Embassy representatives in Sudan in October 2015. Cousteau prepared a new map of the World Heritage site as part of a new mobile poster exhibit (**21-019 Output 4.5_02**), which was then used to create a new poster about the World Heritage site (**21-019 Output 4.5_03**). SUDIA printed 200 copies of this new poster and by the close of the project was liaising with various government ministries and authorities on their distribution both inside Sudan as well as at Sudanese embassies in foreign countries.

In parallel with these activities, and as part of the planned Communication Campaign, the Sudanese Environment Conservation Society (SECS) implemented their first education and outreach activity to increase awareness of the new World Heritage status among the local communities within DMNP in December 2016 (**21-019 Output 4.5_04**). To increase awareness of the new World Heritage status among the local communities within DMNP, SECS with additional support and training from SUDIA, then implemented their second education and outreach activity in January-February 2017 in parallel with the 'Sudan Red Sea Did You Know' campaign (**21-019 Output 4.5_05**) (linked to 4.7 and 4.8 below).

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;

Change from Baseline: At the start of the project there were no recent scientific papers about the marine biodiversity and focal species in Sudan. Three scientific papers published and one book chapter; two papers in preparation and; two presentations at international conferences.

Evidence for Change: The project has published three scientific papers, and a book chapter. 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 WCGA 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 paper in PlosONE presents the findings from the manta ray tagging studies within DMNP (**21-**

019 Output 4.6_03), this paper was also presented at Joint Meeting of Ichthyologists and Herpetologists held in New Orleans USA in 2016. The fourth paper which explains the history of the Sudanese MPAs and management planning processes, leading up to WH inscription was presented at European Coral Reef Conference, held in Oxford UK in 2017. The fifth paper in preparation is on other data on sharks and rays generated from the project.

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

Change from Baseline: Lack of awareness and communication materials about the marine biodiversity found in the Sudanese Red Sea, the MPAs and the new international World Heritage status. Increased awareness of the marine biodiversity in Sudan's Red Sea achieved at the national, regional and international level, and new communication materials available. Over 5000 people engaged through exhibits, seminars and events.

Evidence for Change: At the start of the project, a press release was prepared and shared with key media, and a radio interview was organized with one of the local FM Radio channels in Khartoum State. The BBC and Aljazeera, and the BBC Natural History Unit expressed interest in covering the fieldwork. A leaflet presenting the project in English and Arabic was prepared and distributed to key stakeholders (**21-019 Output 4.7_01**).

The Cousteau Society prepared a short educational video (**21-019 Output 4.7_02**) and poster exhibit entitled "*The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site"* (**21-019 Output 4.7_03)**, to highlight the important marine biodiversity found in Sudan, the MPAs and the new international World Heritage status. The poster exhibit included photographs from the Cousteau Society archives, from dive operators working in Sudan, and photographs by Sudanese photographers.

SUDIA organised the display of the poster exhibit and video screenings at 6 different events / venues (see Table 1) starting with a scientific event organised by UNESCO in Khartoum, Sudan (**21-019 Output 4.7_04, 21-019 Output 4.7_05** and **21-019 Output 4.7_06**). Nearly 2000 people visited the photographic exhibits between February and April 2017 (Table 1). SUDIA also prepared a Communication Campaign Plan to consolidate existing efforts and set out their plans for activities to be completed during the final year (**21-019 Output 4.7_07**).

Table 1: Summary of the number of visitors attending the photographic Exhibit "The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site

Event and Venue	Dates	Days	Total
IAP Science Education Programme event, Corinthia Hotel, Khartoum, Sudan	6th-9th Feb 2017	3	1000
World Wildlife Day, Dal Group's Excellence Center in Bahri, Khartoum North	7th Mar 2017	1	200
UNESCO's International Programmes for MAB and IGGP Seminar, Ministry of Tourism, Antiquities and Wildlife in Khartoum	15th Mar 2017	1	50
Women's Roles in Environmental and Climate Change Action in Sudan, Al Sharja Hall, Khartoum University	21st Mar 2017	1	300
Science Fair, Khartoum American School, Khartoum, Sudan	5th-6th Apr 2017	2	250
Video Screenings, SUDIA office during civil society and press freedom focus group discussions.	4th-5th Apr 2017	2	16
Total		**10**	**1816**

Two children from the local community living in Dungonab village were invited to represent Sudan's Marine World Heritage Site during 'The Ocean Pledge', a high-level special event organised by UNESCO World Heritage held on June 8 2017, at the United Nations General Assembly to celebrate World Oceans Day in New York, USA. Sudan's participation at this event was made possible through the financial support provided by Cousteau Society and the coordinated efforts of the DI project team including Equipe Cousteau, Red Sea University, local community leaders (Omda), SUDIA, UNESCO Khartoum, NATCOM/MAB National Committee, and UNESCO World Heritage Centre (**21-019 Output_4.7_08**) The two videos of the ocean pledges made by the boys from Dungonab, before the conference can be viewed here:

- https://www.youtube.com/watch?v=man2rmFxSOI
- https://www.youtube.com/watch?v=5fxGefsZG0Q
- A compiled video about the "The Ocean Pledge" was released by UNESCO World Heritage and can be viewed here: http://whc.unesco.org/en/myoceanpledge/

During the final year, SUDIA expanded the original poster exhibit to include preserved specimens of marine life, additional pictures of local communities, interactive component (sounds of marine mammals), and a responsible diving display with the support and contributions of newly formed partnerships with Bahri University and the Sudanese Wildlife Society and from dive tour operators and Sudanese photographers from Port Sudan. SUDIA organised the display this larger exhibit entitled the Sudan Red Sea DID YOU KNOW? Exhibit at 6 events including Port Sudan International Travel and Tourism Fair (see Table 2), which spanned 35 days and reached an estimated 3700 people in total (**21-019 Output 4.8_01**).

Table 2: Summary of the number of visitors attending the expanded "Sudan Red Sea DID YOU KNOW? Exhibit:

Mobile Exhibit "Sudan Did you Know "	Dates	Days	Total
Sudan Did you Know Exhibit, French Cultural Institute, Khartoum, Sudan (150 opening night 900 in total)	17th Sept to 11th Oct 2017	25	1050
Sudan Did you Know Exhibit, Alneelain University	1st-2nd Nov 2017	2	500
89th Eco-sustainability forum entitled Marine Biodiversity in Sudan, Future University, Khartoum, Sudan	4th Nov 2017	1	25
Omdurman Ahliya University, Faculty of Environmental Sciences	12th-14th Nov 2017	3	500
University of Bahri, College of Natural Resources and Environmental Studies, Fisheries Department	20th Nov 2017	1	300
Port Sudan International Travel and Tourism Fair	7th-10th Feb 2018	3	1335
Total		**45**	**3710**

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.

Change from Baseline: Before the project started there was no website for the Sudanese MPAs and no other forms of social media in use. There is now a website for the Sudanese MPAs and social media platforms (Facebook, Twitter and Instagram), which were used to launch the coordinate online "Sudan Red Sea Did you know?" Communication Campaign which reached over 100,000 people online, and an estimated 2,000,000 people through other means.

Evidence for Change: The project established a website (**Output 21-019 4.8_01 and Output 21-019 4.8_02**) and new social media accounts on Facebook, Twitter and Instagram. The website for the Sudanese Marine National Parks was finalised following a review by national stakeholders (WCGA, Red Sea State, NATCOM / MAB Committee and RSU).

- http://sudanmarineparks.info
- http://www.cousteau.org/projects/protect-sharks-and-rays-of-the-red-sea/
- https://www.facebook.com/sudanmarineparks/
- Facebook: @sudanmarineparks
- Twitter: @sudanmarinepark
- Instagram: sudan_marineparks
- Email: info@sudanmarineparks.info
- Hashtag: #Sudanmarineparks

The promotional 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. By October 2017, there were 485 followers on Facebook (See **21-019 Output 4.8_03**). SUDIA also began building the Sudan Marine Parks mailing list which now has 1200 contacts. The project then ran an online campaign in parallel with The Sudan Red Sea 'Did You Know?' exhibits (see **21-019 Output 4.8_04**). The online component of the Sudan Red Sea 'Did You Know? campaign included a '30 Facts 30 Days'. The campaign developed "Key Messages" for different stakeholders and 30 "Key facts" highlighting key values of the MPAs and the UNESCO World Heritage site (see Figure 2 and 3). These were developed by the Multistakeholder Committee (**see 21-019 Output 4.2_01 and 4.2_02**). Key Messages and Key Facts were produced in both English and Arabic to reach wider audiences. The materials were simultaneously released via Facebook, Twitter, Instagram and shared via WhatsApp and MailChimp over a 30 day campaign that ran in January-February 2018.

The Communication Campaign reached over 100,000 people online, complimenting the 5000 people engaged through exhibits, seminars and events. The campaign had a significant impact translating to approximately 2,000,000 people receiving campaign messages through radio ads and hundreds more through mobile information sharing and email marketing. As of March 2018, there were 3,431 followers on Facebook (up from 485 before). The '30 Facts 30 Days' Online Campaign Facebook Post Stats showed that 47,600 people were reached with just the first fact on Day 1 with 524 likes and 107 shares. Hashtag analytics on Twitter showed that the #sudanmarineparks reached 1474 accounts and made 1894 impressions. There was a significant increase in traffic on the website during the campaign and to date, with 71,745 total visits, with an average of 2.17 min spent on each page (from Sudan, Russia, America, Ukraine, France, Germany, India, Netherlands, Canada and the United Kingdom). One of the most significant impacts of the campaign, was improving the digital content of Sudan and enhancing search engine results and ranking of Sudan's Marine Parks online (Figure 5 and Figure 6).

Figure 2 Sudan Red Sea 'Did You Know?' online 30 Facts 30 Days Campaign Fact Cards

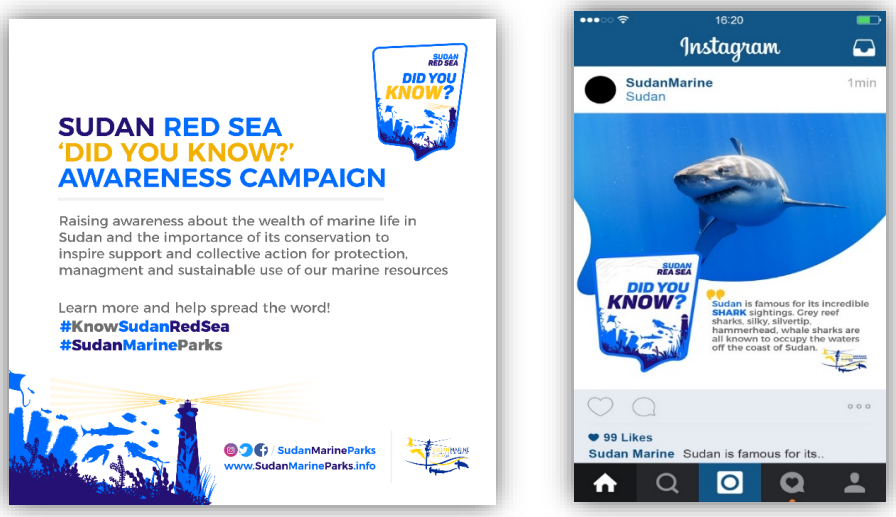

Figure 3 Sudan Red Sea 'Did You Know?' Online Campaign '30 Facts 30 Days '

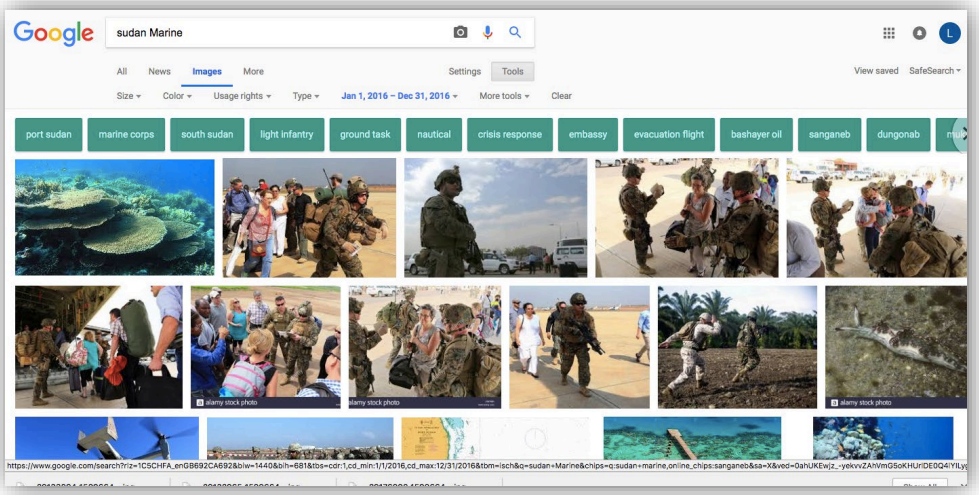

Figure 4 Sudan Marine search engine results prior to 30 Facts 30 Days online campaign (SUDIA 2018)

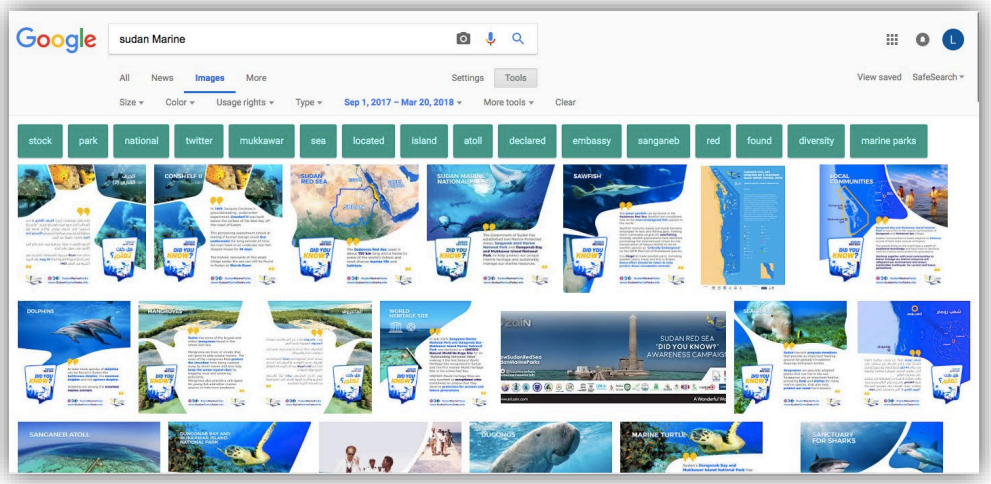

Figure 5 Sudan Marine search engine results after 30 Facts 30 Days online campaign (SUDIA 2018)

3.2 Outcome

The project made substantial progress towards the project 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".* Progress was made despite the obstacles the project faced. The project team adapted to the lack of access to the project site through providing support remotely or through third parties that could access the project site. Changing the activities and adapting to this situation required more time, which was the reason the project asked for a final 6 month no-cost extension. Having been granted the 6 month extension, the DI Project team were confident they could achieve the Outcome by the end of the project. This was however overly ambitious as some activities were not delivered and others were ongoing at project close. Progress on 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.

The MPA management effectiveness score for SMNP and DMNP has continued to increase from the baseline of 21% in January 2015 to 43% in January 2016 to 52% in February 2017. There has been an overall increase of 30% in management effectiveness score during the project (21-019 Output 1.5_01). The project has directly contributed towards an increase in the

national management capacity through providing the WCGA staff and rangers with training in SCUBA diving, maritime skills and safety at sea, English language, equipment, including a boat and safety and surveillance equipment. Following the training three computers were given to WCGA and these have been used to start collecting data about the number of dive boats visiting the SMNP. The project has also supported management capacity through the meetings and workshops that have helped build the vision and brand for the MPAs and the preparation of signage using the new park logo. The project has also indirectly supported management capacity through the provision of data that has been used to update the zoning plans and the management plans for the MPAs and the integrated plan for the World Heritage site.

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.

As project staff were not able to access the project to complete further field work (tag new animals and replace and recover the monitors) since 2015. Data derived from the project has been published in three scientific papers (21-019 Output 4.6_01, 02 and 03) and presented at two international conferences. Existing data has been organised and catalogued into a geodatabase and used to update the zoning and management plan for DMNP and for the World Heritage site. A large amount of new data was recovered in 2017 from the 34 acoustic monitors. The analysis of this data is ongoing and it will also be used to inform the management of focal species in the Red Sea of Sudan. The project has not been able to deliver the training in the scientific monitoring techniques as planned. WCGA rangers and RSU staff were trained in SCUBA diving (21-019 Output 2.7_01) and RSU staff were trained in GIS and systematic conservation planning software Marxan (21-019 Output 2.10_01 and 2.10_02).

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.

A request to amend this indicator should have been submitted last year, as mentioned in AR3. A coastal livelihood assessment was completed in early 2015 (21-019 Output 3.4_01), but our local NGO was not able continue due to lack of field access. A training in sustainable tourism was delivered (21-019 Output 3.2_02 and 21-019 Output 3.2_03). Outline business plans have been prepared for nature-based ecotourism (21-019 Output 3.2_01). In addition, the ecotourism guidelines (21-019 Output 3.3_01) prepared were delivered to the dive operators. Our local partner has now regained their official status, and is working with the Red Sea State and WCGA to progress on the delivery of the livelihood activities.

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 supported Sudan through international processes that have helped increase both global awareness and international recognition of the project site MPAs and associated biodiversity. The project team organised and were invited to attend and participated in various workshops related to the conservation of biodiversity. With support from the project, the Sudanese MPAs have been formally recognised by the CBD as EBSA and in July 2016 the sites were inscribed as a UNESCO World Heritage site (Output 4.4_01, 4.4_02). World Heritage status is the highest achievable international status for any protected globally and this status has already helped attract increased attention to the site. Scientific papers have been produced, which has increased awareness among the international scientific community (Output 4.6_01, Output 4.6_02, Output 4.6_03). The project team supported the attendance of two children from the World Heritage site at a high level event at the world's first "Ocean" Conference held at UN Headquarters in New York (21-019 Output 4.7_08). At the regional level, the DI project team been coordinating with the Arab Regional Centre for World Heritage (ARC-WH) in Bahrain and PERSGA (The Regional Organisation for the Protection of the Red Sea and Gulf of Aden) in Jeddah, Kingdom of Saudi Arabia, to help Sudan plan and support the effective management of the World Heritage site (21-019 Output 4.4_04). At the local and national level, the DI project has supported a comprehensive communication campaign that included a wide range of social marketing and outreach activities (21-019 Output 4.8_04).

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

Impact statement from logframe: 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.

The DI project has helped to strengthen the management effectiveness of the MPAs in Sudan and helped rebrand Sudan as a global marine biodiversity hotspot and ecotourism destination. The project has achieved this through providing technical input and support to international processes that helped ensure that Sudan's MPAs were officially recognised at the highest international level both by the CBD (Ecologically or Biologically Significant Areas, EBSA) and by UNESCO World Heritage, the highest international status attainable by a protected area. The legacy of the project has also been secured through the Communication Campaign and parallel education activities to raise local, national, regional and global awareness about the MPAs and World Heritage site.

At the start of the project DMNP was recognised as a BirdLife International Important Bird Area, and both SMNP and DMNP were recognised as RAMSAR sites. Both MPAs had achieved regional status as they are both part of the official PERSGA regional MPA network. SMNP had been on the World Heritage tentative list since the early 1990s but the nomination process had not been concluded. The project provided technical support, guidance and inputs to both the CBD led Ecologically or Biologically Significant Areas (EBSA) process (21-019 Output 4.4_02) and World Heritage nomination process (21-019 Output 4.4_01). By the end of the project both SMNP and DMNP were recognised as EBSAs, and both MPAs were inscribed as a serial site on the World Heritage list, which is the first natural World Heritage site in Sudan and the first marine World Heritage site in the whole of the Red Sea. The inscription process increased Sudan's protected area estate to 10.24% of the Exclusive Economic Zone, thereby meeting the CBD recommended 10% marine protected coverage to be achieved by parties by 2020.

The MPAs are the core zones in the World Heritage site that are encompassed by a large buffer zone surrounding MPAs (see Figure 1). In 2017, Government asked the Cousteau to prepare a new proposal to justify the inclusion of Sha'ab Rumi as the third MPA in Sudan (21-019 Output 1.4_01). This reef is the location of the Cousteau ConShelf II experiment and it lies within the buffer area of the World Heritage property. The proposal was submitted to the WCGA for consideration, and if accepted it would result in Sha'ab Rumi becoming Sudan's third MPA and the third core zone within the World Heritage serial site.

The Communication Campaign and parallel education and outreach activities helped create and promote the new brand for the MPAs and increase awareness of the new World Heritage status at the local, national, regional and international level (21-019 Output 4.5_01 and 4.5_02, and 21-019 Output 4.8_04). One of the two coordinators for the communication campaign and a former employee of SECS who is now working for SUDIA (Reem Gasim) was nominated to attend the 42nd World Heritage Young Professionals Forum 2018, entitled 'Protecting Heritage in an Ever-Changing World' being held 17 to 26 June 2018 in Manama (Bahrain) (http://whc.unesco.org/en/news/1790/), which further demonstrates the sustainability and legacy built through the campaign. The ecotourism training, the guidelines and outline business plans provide the basis for the sustainable development of the sector along the coast of Sudan (21-019 Output 3.2_01, 21-019 Output 3.2_02, 21-019 Output 3.2_03, 21-019 Output 3.3_01).

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

The project has contributed to the following Sustainable Development Goal (SDGs):

SGD14: As the project focus is on strengthening the MPAs of Sudan, which are situated within the central Red Sea, a recognised biodiversity hotspot, the project has directly contributed to SDG14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development). The project has helped to build the capacity of the national management authority and strengthen the management effectiveness of the MPAs (21-019 Output 1.5_01).

SDG13: The project has also contributed to the improved management of the coastal and marine environment, which will support climate change adaptation and resilience in support of SDG13 (Take urgent action to combat climate change and its impacts).

SDG8: The project has supported the development of sustainable ecotourism, which contributes towards SDG8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all);

The project intended support for the development of alternative income generating activities, would have supported SDG1 (End poverty in all its forms everywhere), SDG3 (Ensure healthy lives and promote well-being for all at all ages) and SDG5 (Achieve gender equality and empower all women and girls). The contribution to these SDGs has been limited due to the delayed implementation, and at project close SUDIA was part way through these activities.

4.2 Project support to the Conventions or Treaties (CBD, CMS, CITES, Nagoya Protocol, ITPGRFA)

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 start of the project it was expected that the activities 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 has helped Sudan to make progress towards all of the aforementioned targets. The primary targets that the project has contributed towards are Targets: 11, 12, 19, 6 and 1.

The project team organised and were invited to attend and participated in various workshops related to the conservation of biodiversity in the Red Sea and Gulf of Aden Region and the Sudanese MPAs. This included providing direct support for CBD hosted workshop in Dubaï between the 19-25 April 2015, which aimed 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. The EBSA process resulted from a decision at COP10 which 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.

The support the project has provided for the MPAs to be recognised as a EBSA and their inscription as a UNESCO World Heritage site has supported Aichi Target 10 and 11. Target 11 requires that by 2020 "*at least 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems, of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes*". This target was also reflected in Sustainable Development Goal 14 (SDG14) Target 14.5 of the 2030 Agenda for Sustainable Development agreed in September 2015.

Both MPAs are now recognised as core zones within the World Heritage site, encompassed within a buffer zone that expanded the total protected area coverage to 7949 km^2 (marine = 6800 km^2 land = 1149.43km^2), which is 10.24% of the Exclusive Economic Zone of Sudan (66,411.91 km^2). This means that Sudan has now met Aichi Target 11 in terms of coverage. In addition to the percentage coverage target, Aichi Target 11 indicates the three other key elements of a successful protected area network including: (a) effective and equitable management, (b) ecological representativeness, and (c) adequate connectedness and integration into the wider ecosystems to ensure their viability. The increase in the size of the MPA estate has increased both ecological representativeness and connectedness with regards to the wider ecosystems. The project has also helped Sudan increase their management capacity as demonstrated by the MPA Scorecard results.

The expansion of the protected area estate and the new data about the spatial movement ecology of sharks and rays has also contributed to Target 12 and Target 6. The Communication Campaign and associated outreach and education related activities supported by the project

have contributed to Target 1. The data generated about the focal species has been used to update the management plans has been incorporated in the management plans thereby contributing towards Target 2.

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. The Communication Campaign and associated education and outreach activities have supported increased awareness at the local, national, regional and international level. The project data will also be fed back to the CITES coordinator in Khartoum.

CMS: There is a paucity of data on the residency and movement patterns of large elasmobranchs in the Red Sea region. The project focus species are designated as vulnerable and endangered on the IUCN Red list and are considered to be migratory. The project has generated knowledge of relevance to the MOU on Migratory Sharks. This spatial movement data has been used in the spatial management planning for these migratory species. While Sudan has signed the CMS MOU on Sharks, MOU on Dugong, and Birds of prey / raptors, they have not yet signed the CMS. During the CBD led EBSA workshop, the CMS secretariat requested the support of the project leader to convince Sudan to sign the CMS. This message has been conveyed to the Federal authorities.

4.3 Project support to poverty alleviation

Our DI Initiative project at the Stage 2 Application planned to directly alleviate poverty among the communities living within DMNP through establishing micro-finance initiatives to fund projects identified by community members. The coastal livelihoods assessment completed in early 2015 was the first step towards addressing poverty alleviation (Output 21-019 3.4_01). SUDIA staff met with the two village communities (Mohammed Qol and Dungonab) and their traditional leaders to discuss the challenges and alternative income generating activities. The discussions identified several areas where the project may be supportive.

In parallel with this, the project developed other mechanisms through which poverty could be alleviated through supporting the development of sustainable ecotourism activities. The project sub-contracted an ecotourism consultant to assess the MPAs as a tourism destination (Output 21-019 3.2_01). The consultant also ran a workshop to introduce the concept of sustainable tourism including eco-tourism to key stakeholders from government and the local community in Port Sudan (Output 21-019 3.2_02 and Output 21-019 3.4_03).

Equipe Cousteau developed ecotourism guidelines, to inform liveaboard dive boats bringing international tourists to the area in how to operate safely with the focal species of conservation concern, but also in how they can support and work with the local communities (Output 21-019 3.3_01). The plan was to deliver training to the WCGA and dive operators in the proper use of these guidelines but also to deliver a specific training to the local communities to better prepare them in how to receive the international and national tourists. While local communities have been engaged in education and awareness raising activities (21-019 Output 4.5_04 and 21-019 Output 4.5_05), at project close SUDIA was in the final stages of planning this training.

4.4 Gender equality

Our local NGO partner SUDIA 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 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. M&E systems were designed to capture data disaggregated by sex for all workshops and activities delivered by the project. Such systems included event registration forms administered to participants at the eco-tourism workshops, the Conference committees, visitors at events organized as part of the communication campaign as well as the awareness raising campaign carried out in the two villages in the MPA.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

The projects interactions with the local communities has been constrained by a lack of access. The interventions that were achieved helped to build the capacity of the local community and increase their awareness about the biodiversity found within the site (21-019 Output 4.5_04 and 4.5_05). The newly prepared integrated management plan for the World Heritage site includes the governance framework and specific structures that would permit greater representation of local poor people in the management of biodiversity. WCGA and the local authorities including the National Committee for the Management of the World Heritage site will be responsible for ensuring that these structures are supported and maintained. These bodies may also be interested to allow SUDIA and SECS to support capacity building for these structures.

- **Were any management plans for biodiversity developed?**

The data collected through the project has been used in the preparation of the updated management plan for DMNP, and the newly integrated management plan for Sanganeb Marine National Park and Dungonab Bay-Mukkawar Island Marine National Park, World Heritage Site.

- **Were these formally accepted?**

Yes the managements plans were formally accepted.

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

Yes the management plans were prepared in participation with stakeholders from the local community and state level authorities.

- **Were there any positive gains in household (HH) income as a result of this project?**

By project closure no positive gains in household income can be reported. Nonetheless positive gains are anticipated following the completion of the delivery of livelihoods activities.

- **How many HHs saw an increase in their HH income?**

None to date, however completion of the delivery of livelihoods activities is anticipated to impact HH incomes of at least 80 households of communities resident in the MPA

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Not Applicable. The livelihood component of the project was not completed.

4.6 Transfer of knowledge

The DI project team has delivered knowledge about the wealth of marine biodiversity found in the Sudanese Red Sea, the importance of the MPAs and the significance of the newly inscribed World Heritage site through several different mechanisms that included:

- **Practical training workshops / courses**: Marine skills training and safety at sea (21-019 Output 1.3_08), SCUBA diving (21-019 Output 2.7_01), GIS and Marxan software (Output 21-019 2.10_01, Output 21-019 2.10_02) and sustainable ecotourism (Output 21-019 3.2_02, Output 21-019 3.2_03);
- **Technical reports, geodatabase, and guidelines** (e.g. Output 21-019 3.2_01, 21-019 Output 3.3_01)
- **Scientific publications** (e.g. Output 21-019 4.6_01, 02 and 03)
- **Promotional video** (e.g. Output 21-019 4.8_02)
- **Photographic exhibit** (e.g. Output 21-019 4.8_03, Output 21-019 4.8_04, Output 21-019 4.8_05, Output 21-019 4.8_06)
- **Classroom based activities, community theatre, drawing competitions, mural painting during the Phase I and II Education awareness raising** (e.g. Output 21-019 4.4_04 and 4.4_05);
- **Social media '30 Facts in 30 Days', newspaper articles, radio and tv broadcasts during the 'Sudan Red Sea Did You Know?' Communication Campaign** (Output 21-019 4.8_04)

In addition to the above, Equipe Cousteau is in the process of preparing a brochure summarising the key findings from the project that will be made available online.

Did the project result in any formal qualifications?

No formal qualifications were achieved through the project. Certificates were issued for training courses delivered in SCUBA diving, Maritime skills, English language, QGIS and Marxan.

4.7 Capacity building

Training was delivered on the following topics: SCUBA diving (7 trainees); sustainable tourism (24 trainees); QGIS (14 trainees); Marxan (16 trainees); maritime skills training (10 trainees) and; English language training (10 trainees); Two staff were employed by SUDIA to support the implementation of the communication campaign and through the campaign they trained numerous volunteers to act as guides for the exhibits / seminars / events. The 12 events reached a further 5000 people. The SECS education outreach campaign reached 277 adults and children in Phase I and 811 in Phase II in the two villages in DMNP. WCGA staff have already attended specific additional training related to the World Heritage site, which will further help build their management capacity. One of the two coordinators for the communication campaign and a former employee of SECS who is now working for SUDIA (Reem Gasim) was nominated to attend the 42nd World Heritage Young Professionals Forum 2018, entitled 'Protecting Heritage in an Ever-Changing World' being held 17 to 26 June 2018 in Manama (Bahrain) (http://whc.unesco.org/en/news/1790/). Her involvement in this Forum will also further build the capacity of our local partner NGO and wider national capacity to support WCGA.

5 Sustainability and Legacy

The DI project has aimed to build legacy through each of the project outputs. The biggest cumulative legacy impact the project has helped to achieve is the increased global recognition of Sudan's significant marine biodiversity wealth, including healthy populations of shark and ray species and the international status Sudan's Marine National Parks.

By the end of the project both SMNP and DMNP were recognised by the CBD as EBSAs and both MPAs were inscribed on the UNESCO World Heritage list as a serial site, the first natural World Heritage site in Sudan and the first marine World Heritage site in the whole of the Red Sea. The project team has helped build the national capacity to manage the MPAs and World Heritage site, by creating a new brand, delivering training, equipment and other resources. While there is still much more work to be done, the enhanced international status is already attracting other donors willing to support the national management authority to further progress.

The data collected through the project has helped identify biodiversity hotspots inside and outside the existing MPAs. These data have been used to rezone the existing MPAs and to identify new areas for the government of Sudan to consider including in the MPA network. The DI project, at the request of government also supported the preparation of a proposal to gazette Sha'ab Rumi as Sudan's third MPA. The proposal, if accepted would result in Sha'ab Rumi becoming Sudan's third MPA and the third core zone within the World Heritage serial site. The projects contribution in this regard is mentioned in the communications leading up to the 42nd World Heritage Committee meeting in Bahrain.

The project increased awareness of the marine biodiversity in Sudan and greater stakeholder commitment and engagement (e.g. co-funding from Zain). The local NGO SUDIA in its efforts to overcome the difficulties the project faced, was able to establish relationships with a wide range of stakeholders across different sectors (government, private sector, international NGOs, and universities), and garner their respect and recognition as the lead national NGO committed to the long-term sustainability and conservation of marine resources in the Red Sea State. As also demonstrated by one of the two coordinators for the communication campaign being nominated to attend the 42nd World Heritage Young Professionals Forum 2018, entitled 'Protecting Heritage in an Ever-Changing World' being held 17 to 26 June 2018 in Manama (Bahrain) (http://whc.unesco.org/en/news/1790/).

The project has delivered training in sustainable tourism, provided ecotourism guidelines and outline business plans for nature based tourism which can be further developed. The photographic exhibit prepared by the project as part of the Communication Campaign to raise awareness about Sudan's marine wealth and the World Heritage site will stay in the country and will be loaned to the Aquarium in Port Sudan and then handed over to the Visitors Centre in DMNP once it is officially opened.

The in-country project staff were all employees of SUDIA and will continue to work for the organisation on other projects now that the DI project has ended. SUDIA and Equipe Cousteau have been discussing how the organisations can continue to work together to continue to support the development of Sudanese MPAs in the future. This will involve providing continued support to livelihoods of resident communities, promoting and pursuing eco-tourism initiatives identified through the DI project, and continuing to implement outreach and communication activities, acting either on the behalf of the WCGA and or the Sudanese National Committee for the World Heritage site.

6 Lessons learned

What worked well?: (i) Using remote telemetry techniques which continued to collect data about the focal species even in the absence of field access; (ii) Providing background technical support to national authorities in international processes (e.g. EBSA and UNESCO World Heritage nomination). The scientific partnerships workshop held at the UNESCO Headquarters in Paris in February 2016 made an important and timely contribution to support the national nomination process for the site, which was inscribed in July 2016. (iii) The mobile exhibits (photographic 'Outstanding Values' exhibit and expanded 'Sudan Red Sea Did you know?') and online communications campaigns supported by SUDIA both worked well in terms increasing awareness in country about the wealth of biodiversity hosted within the Red Sea of Sudan. The multi-stakeholder campaign committee established for this communication campaign also worked well, with actors from different organisation coming together to build consensus and refine the key messages and key facts to be used during the campaign. (iv) The support SUDIA provided to assist in building SECS in the second phase of the education and outreach campaign, which reached more people and was better documented.

What did not work well? The project suffered numerous significant set-backs that had not been anticipated in the logframe. The first major set-back was the death of one of our key team members, Brigadier Mohammed Younis, during the first year of the project. He was the champion of the MPAs in Sudan and had previously represented Equipe Cousteau's and been the lynchpin in Sudan in terms of facilitating field access, coordinating and networking national partners. The loss of Mohammed Younis had resounding impacts on project progress.

Soon after the project started, the project experienced their second major set-back related to the shrinking civic space in the country which impacted several independent civil society organizations including the local NGO partner, SUDIA. Difficulties in getting their registration renewed impeded the ability of the project team and staff from gaining access to the field site. When SUDIA tried to implement activities in the Red Sea State they were physically stopped by the security, and their staff asked to immediately leave the State.

In the meantime, the project adapted some activities and sought alternative organisations that may be able to help the project team gain access to the project site. For example, to support the scientific field work, the project signed a new MOU with the Red Sea University (RSU) as it was believed they would be able to help the team obtain the security permits, however the RSU was also unable to help the team gain access to the site.

For the implementation of the ecotourism fieldwork SUDIA contracted an independent consulting firm to facilitate the permissions necessary to deploy the international consultant to the field site. SUDIA also worked closely with another local partner organization to deliver education outreach activities that were part of the communication campaign in the two villages. Cousteau identified two potential alternative NGOs to deliver the livelihood component of the work. SUDIA also tried to outsource the livelihood activities to another local organization in Red Sea State that had specific/relevant experience on microfinance. However due to the remoteness of the area where the activities were to be delivered and their limited capacity, they declined to take on the responsibility for these activities.

Given the limited availability of other local NGO providers with sufficient capacity on livelihoods programming, progress on the delivery of the livelihood activities was dependant on SUDIA acquiring access to the field site and the communities. SUDIA was finally awarded their registration certificate in May 2018, after the project closed.

What we would do differently? Were the project to have been able to re-instate the previous Project Steering Committee at the Red Sea State level on a sounder basis and principles, it is likely that the project would have made more progress. There were various reasons that it was not possible to do this, so the project adapted and formed smaller more focussed committees to support the activities, although this required more time.

Were the project to have been able to maintain a full-time project manager in Port Sudan, to backstop and trouble shoot issues, the project would have made more progress.

The project could have maintained better documentation about important decisions and agreements made by government in relation to the project. Certain key agreements with the former Director for WCGA were insufficiently documented, and this documentation would have been useful to support and facilitate discussions with the new Director.

The project should have requested more changes in the log frame as soon as it became apparent that field access was going to continue to be blocked. While the project team found ways to adapt to this eventuality for most activities it required more time. And the project did not adapt sufficiently quickly to the issue that limited site access caused for the livelihood activities.

The project team may have invested more time during the project conceptualisation stage to restructure the pre-existing Steering Committee, to clarify the roles and formalise the arrangements with project partners and enhance the sense of ownership of national actors.

Advice for other projects: (i) Be prepared to expect the unexpected and expect anything that requires official paperwork to take three times as long to process. (ii) Promise less and deliver more and be prepared to adapt as the project progresses. (iii) If the project does get stuck, get creative and to work with project partners to find alternative solutions. (iv) Take the opportunity to support national authorities in high level processes if the opportunity arises. (v) If the political situation changes, or key civil servants change, do not assume that there will be a proper handover of the project between staff. (vi) Debrief any new staff about the project as soon as possible to help the project maintain momentum. (vii) Be sure to minute and share meeting notes for all communications with civil servants with regards the project.(viii) Allow for a good deal of time during the project inception stages to secure the necessary permissions, update a risk and risk mitigation strategy, build ownership and fine tune or adjust project activities to contextual changes that may have taken place.

6.1 Monitoring and evaluation

There were no major changes to the project impact or outcome indicators. There was a change request submitted in March 2016 in response to the first Annual Review. Changes were requested both to simplify the M&E framework and to help with the rescheduling of project activities due to delays with implementation, including changes to the following Indicators: 1.1, 1.2, 1.4, 1.5, 2.1, 2.3, 2.7, 2.8, 3.2, 3.3, 3.4, 3.9 and 4.4. When it became clear that field access was not going to be possible another change request should have been submitted. Further suggested changes were indicated in AR3 but it appears that an official request to make the changes was not submitted. This may have been related to the main PI leaving the Cousteau Society before the project closed. Otherwise the DI project team found the M&E system prescribed for the DI project to be practical and helpful. There has not been any internal or external evaluation of the work, beyond the reporting requirements of Darwin, nor are there any perceived needs to do this in the imminent future. There has been a recent training provided in management effectiveness evaluations using the toolkit provided by the World Heritage. The General Manager for MPAs was trained in this method in Bahrain in 2018 and it is anticipated that he will continue to use this method alongside the MPA Scorecard to continue to monitor management effectiveness of the MPAs and whole World Heritage site.

6.2 Actions taken in response to annual report reviews

The project has tried to address all the comments in the annual reviews. In response to the comments received on AR1, the project submitted a change request in March 2016 to simplify some of the indicators and to help with re-scheduling of the project given implementation delays. In response to the comments received on AR2, the six specific comments provided were addressed in AR3. The team notes that they did not request a change to Indicator 4.2 as suggested by the reviewer.

Comments received in the last review for AR3 have been addressed in the previous Half Year report or in this report. The project would however like to offer some further clarifications.

The reviewer suggested that the project work directly through PERSGA. The project has been coordinating activities with both the ARC-WH and PERSGA. It is not possible for the project to work directly with PERSGA, as they only work directly with governments, through their National Focal points, and rarely works with NGOs, unless at the specific request of government.

We would like to provide further explanation for closing the Project Steering Committee. The reason behind this was two-fold, first of which was due to the loss of Mohammed Younis who had acted as the lynchpin between the partner organisations and brokered the establishment of the committee. The second reason is because the project team were being asked to pay certain members of the steering committee for their attendance at these meetings, which the project team were unwilling to do.

We would kindly request that DI removes / edits the above paragraph from the report before the report is made public so as to not jeopardise our relations in country moving forward. The individuals involved have progressed and now hold high level government positions

There were more formal coordination meetings at the regional level, and informal meetings continued at the national level, the project team recognise that this was problematic and hindered project progress. But the way the project handled this was to convene small informal committees to support specific activities (e.g. Multi-stakeholder Communication Campaign).

In response to the comment about the women's societies, SUDIA was the organisation responsible for leading the livelihood activities. This work was put on hold due to a lack of access to the project site. Since then the ecotourism consultant has visited the site and had discussions with the women's societies as well as fishers societies. SUDIA is in the process of following up on the business plans and will continue to work with these communities.

7 Darwin identity

After the project started and national stakeholders had been familiarised with the project, the project team has consistently referred to the project as the Darwin Initiative project in communications with government and non-government partners in Sudan. Both the Darwin

Initiative and UK Aid logos have been used in all online and print materials produced by the project including: all project reports, ecotourism guidelines, two posters, website, Twitter, Facebook, Instagram, other materials produced for use in the communication campaign and presentations given by staff at meetings and workshops at the national, regional and international level. During the Sudan Red Sea 'Did you know?' Communication Campaign, the logos were used on social media headers (e.g. Twitter, Instagram and Facebook) and on the banner's that accompanied the mobile exhibits and associated education and outreach activities. The financial support received from the Darwin Initiative and UK Aid project was mentioned in the acknowledgements included in the scientific papers produced as a result of the project. Some of the venues outside Sudan, where the support of the Darwin Initiative programme and UKAid were referred to and logos displayed during presentations given by the project team include:

- *"Regional MPA Management Planning Workshop"*, 22nd-24th February 2015, PERSGA Headquarters, Jeddah, Kingdom of Saudi Arabia.
- *"CBD Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) in the North-West Indian Ocean and Adjacent Gulf Areas"*, 19th to 25th April 2015, Dubai, United Arab Emirates.
- *"Sanganeb Atoll and Dungonab Bay-Mukkawar Island National Parks in Sudan: Strengthening scientific partnerships to support the listing of both Marine Protected Areas as a UNESCO World Heritage Site"*, 25th February 2016, UNESCO Headquarters, Paris, France.
- *Kessel ST, Alhasan N, Yurkowski DJ, Walter RP, Klaus R, Chekchak T, Hill G, Hussey NE (2016) Spatial use of coastal manta rays (Manta alfredi) in Sudan relative to marine reserve boundaries, and proximity to a proposed coastal development. Joint Meeting of Ichthyologists and Herpetologists. New Orleans, LA, USA.*
- *"Coordination Meeting for Sanganeb Marine National Park and Dungonab Bay - Mukkawar Island Marine National Park"*, 9th and 10th of May 2017 Arab World Heritage Centre, Manama, Bahrain.
- *"How scientific knowledge on oceans can contribute to the implementation of national action plans on climate and human-induced changes"*, 5th June 2017, United Nations Headquarters, Conference Room 6, UN Headquarters, Oceans.
- *Klaus, R. (2017)* "*Sudan's Marine Protected Areas and Red Sea's first UNESCO Marine World Heritage site: Tale of perseverance, patience and lateral thinking*" European Coral Reef Symposium, 13th-15th December, 2017, Oxford, United Kingdom.

8 Finance and administration

8.1 Project expenditure

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				

TOTAL				

Staff employed **(Name and position)**	**Cost** **(£)**
TOTAL	

Capital items – description	**Capital items – cost (£)**
TOTAL	

Other items – description	**Other items – cost (£)**
TOTAL	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	**Total** **(£)**

TOTAL	

Source of funding for additional work after project lifetime	**Total (£)**
TOTAL	

8.3 Value for Money

The lack of field access meant that certain project costs increased as a result of needing to subcontract work out to other organisations that could access the project site. This meant that certain activities were more expensive than if they had been implemented by project staff. The majority of the international project team costs were to be provided in-kind, but the lack of field access meant that these staff could not be deployed. The lack of field access also meant that the project did not benefit as much as it could have done from the strong working relationships project team members have established with WCGA and local dive operators through the Divers Aware of Sharks programme. As well as benefiting from local knowledge, these relationships have previously translated into lower dive boat rental costs and logistical support and special access to resources locally. The project did benefit from using telemetry survey protocols which are highly cost-effective, as passive acoustic telemetry helps to control field costs, as the data is recorded continuously even while the team is not in the field. The project also benefited the participatory citizen science methods employed through the 'Divers Aware of Sharks' which only require some initial training to facilitate long-term monitoring of biodiversity and capacity legacy. Both these methods would have generated more data and been better value for money if it had been possible to deploy field staff. Both the photographic 'Outstanding Values' and 'Sudan Red Sea Did You Know?' exhibits were good value and reached over 5000 people. The website and online communication campaign were also good value for money as they reached a large number of people and helped support the overall impact of the project.

Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
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.			
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	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	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

biodiversity planning and management.	patterns of key elasmobranch species. 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.	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; • Commitment and consistency of dive operators participating in DAS surveys and assisting fieldwork operations; • Continued support by WCGA for all fieldwork operations.

		derived telemetry data/coral reef 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. 4.2 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. 4.3 Bi-annual Darwin reports summarising project findings and reporting on progress and delivery of project outputs. 4.4 Annual Stakeholder Workshop participant lists and feedback forms (x3). 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. 4.6 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; 4.7 Number of press releases to national radio, newspapers and TV in Sudan, UK and internationally in Year 1, 2 and 3. 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.	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.	• 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.

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 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
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.		The DI project has helped to strengthen the management effectiveness of the MPAs in Sudan and helped rebrand Sudan as a global marine biodiversity hotspot and ecotourism destination. The project has achieved this through providing technical input and support to international processes that helped ensure that Sudan's MPAs were officially recognised at the highest international level both by the CBD (Ecologically or Biologically Significant Areas, EBSA) and by UNESCO World Heritage, which is the highest international status attainable by a protected area. The planning processes to prepare the integrated management plan for the site have been participatory, and the management framework includes structures to permit the increased involvement of local communities in decision making.
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. 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. 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	The 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 a total overall increase of 30% in management effectiveness score during the course of the project. Further support provided to WCGA staff during the final year included the provision of additional equipment to support monitoring, control and surveillance of MPA, training in maritime skills and safety at sea, English language, preparation and installation of locational signage, using the new logo,. The project has faced ongoing difficulties in the implementation of the field work that was planned to collect new scientific data and provide training to students and staff in the use of acoustic telemetry techniques, and to refine/improve coral reef monitoring. The existing scientific data has been compiled and organised and a geodatabase prepared. The acoustic monitors have been recovered and the data downloaded, and transferred to the University of Windsor for post-processing and analysis, the data analysis is ongoing. Three scientific papers have been published, and another two are in preparation. A coastal livelihood assessment was completed in the first year of the project to assist in the identification of AIG, a sustainable tourism training workshop was held and business plans prepared following our ecotourism consultants visit to assess DMNP. The outline business plans have not yet been. The local partner has now had their official status reinstated and they have established a small committee in Red Sea State to support the implementation of livelihood activities.

	households in Year 2 to a target of 30% of all households by Year 3. 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 contributed towards a significant increase in the global awareness and status of the project site MPAs and the associated biodiversity these areas support. The project supported Sudan's participation in important international processes and events, including the participation of two children from the World Heritage site in the UN's first Oceans Conference in 2017. The project helped the Sudanese authorities to get the sites formally recognised by the CBD as EBSA and provided technical support to authorities preparing the nomination dossier for World Heritage. In July 2016 the sites were awarded the international status of a UNESCO marine World Heritage, the highest achievable status for any MPA globally. The new status has attracted regional and international attention to the project site, which may attract additional support from other donors. The DI project team has also 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 prepare to the support the effective management of the World Heritage site. The project has also supported an extensive communication campaign to further raise awareness of the MPAs, and new UNESCO World Heritage status at the local, national, regional and international level. The project produced a leaflet, promotional video posters, and a photographic exhibit as well as other digital content including 30 key facts. At the national level the project supported 12 exhibitions / seminars / events reaching 5000 people. The online component reached over 100,000 people online, while approximately 2,000,000 people received campaign messages through radio ads and mobile information sharing and email marketing At the local level the project has delivered two education and outreach campaigns, involving community theatre, workshops, drawing competitions.
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 1.2. DMNP Management Headquarters and Visitors Centre renovated and functional by end of project.	The local NGO partner organised a logo competition to create a brand for the MPAs and established a steering committee for the communication campaign. A campaign committee worked together to produce the materials used in the communication campaign. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 1.1_01, 21-019 Output 1.1_02, 21-019 Output 1.1_03 and 21-019 Output 4.4_01, 21-019 Output 4.4_02, 21-019 and Output 4.4_03..* Planned works were revised following discussions with the staff at WCGA and PERSGA SEM project staff. The project supported the re-design of the location signs and prepared designs for the entrance and information signs. The project reallocated the budget for the renovation work to purchasing essential safety and surveillance equipment. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 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.	The type of boat WCGA requested was revised. 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 purchased one boat and remaining funds were reallocated to the purchase of equipment for the MPAs. Training provided in maritime skills and safety at sea and English language training. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 1.3_01 to 21-019 Output 1.3_09.*
	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.	Participatory mapping work for DMNP was completed. The zoning plan for DMNP was updated. The data is being used to revise the zoning plan the World Heritage site. The draft plan is available but there is further consultation work on this plan that is now needed. Government requested assistance to prepare a proposal for Sha'ab Rumi as Sudan's third MPA. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 1.4_01.*
	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.	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. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 1.5_01.*
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. Coordination meeting held with regional partners in the MPA. A logo was created for Sudan's Marine National Parks, which can be used as the new brand.
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.		Contract for the renovation works was prepared but the works were postponed. The works were then cancelled as WCGA commissioned some of the work, with funds from central government and the PERSGA SEM. The new logo was used in the preparation of new location signs. 4 alternative entrance sign designs.
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 security situations. 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. Training delivered in maritime skills and safety at sea and English language training.
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. The zoning plan has now been updated to cover the whole World Heritage site. During this year,

		governments requested the support of Cousteau in preparing a new proposal to justify the inclusion of Sha'ab Rumi as the third MPA.
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 were 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 in scientific and participatory monitoring methods, generating data for use in biodiversity planning and management	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.	The equipment was procured and shipped to Sudan. It has not been possible to redeploy the monitors or tag more animals due to the ongoing issue with security permits. *Evidence provided in section 3.1 & 3.2 of report.*
	Indicator 2.2. Data derived on spatial movement patterns of key elasmobranch species.	It was not possible to redeploy the monitors or tag more animals due to the ongoing issue with security permits. The existing monitors were recovered, the data downloaded and transferred to the University of Windsor for post-processing and analysis. As reported in AR3, a total of 14 monitors were recovered from two of the dive operators and kept in storage on their boats in Port Sudan (Don Questo and MY Elegante). The monitors were collected from the dive boats in February 2017, the data was downloaded, and transferred to the University of Windsor for post-processing and analysis. The recovered monitors were deposited at the RSU. The DI project team then sub-contracted the RSU to recover the monitors from the 'manta array' in DMNP. 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. The 20 monitors were collected from the RSU. The data downloaded correctly 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 were packed in preparation for shipping to Canada for repair. The monitors were shipped and received by University of Windsor staff on 18th October 2017. The University of Windsor staff sent monitors for repair. Data was recovered and analysis is ongoing. *Evidence provided in section 3.1 & 3.2 of report.*
	Indicator 2.3. 3 x Sudanese students trained and participating in telemetry fieldwork to generate data on the	It has not been possible for the DI team to access the field to provide this training due to the ongoing issue with access to the project site. *The project team acknowledges that request to modify this indicator should have been submitted*.

	spatial ecology of focal elasmobranchs in Year 3.	
	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.	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. *The project team acknowledges that a request to modify this indicator should have been submitted*.
	Indicator 2.5. Sudanese staff member regularly liaising with dive operators and collecting DAS results.	A dive master from the local dive operators and a PhD student from the RSU were identified and tasked with the responsibility for supporting these activities. Without field access there was no way for the project team to provide them with the support needed. *The project team acknowledges that a request to modify this indicator should have been submitted*.
	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.	The DAS data was retrieved and the DI project team have been liaising with dive operators remotely. Only one of the dive operators has 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 5 local boats (down from 10) and 16 Egyptian boats (up from 8) so total 21 liveaboard boats. *The project team acknowledges that a request to modify this indicator should have been submitted*..
	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.	4 WCGA Officers trained in diving, and 3 x RSU students. *Evidence provided in section 3.2 of report and Annex 21-019 Output 2.7_01 and 21-019 Output 2.7_02.*
	Indicator 2.8. 4 x Sudanese nationals trained and able to implement coral reef monitoring surveys by the end of the project.	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. *The project team acknowledges that a request to modify this indicator should have been submitted*.
	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.	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. The project team acknowledges that a request to modify this indicator should have been submitted*.

	Indicator 2.10. Geodatabase populated with existing and new datasets.	Geodatabase has been compiled and training in QGIS and Marxan software delivered. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 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.		Completed.
Activity 2.2. Continuous data derived on spatial movements, residency, home-range and migration patterns of focal flagship elasmobranch species through telemetry techniques.		A total of 34 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.		Part completed in project timeframe. 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).		Data on manta ray movement patterns that were obtained from the satellite tagged mantas has been analysed and paper produced. Data from the existing bottom monitors transferred to the University of Windsor for post processing and analysis (ongoing).
Activity 2.5. Training of Sudanese staff member to liase with regional dive industry over Divers Aware of Sharks monitoring project.		Part completed. Started then stopped.
Activity 2.6. Data compilation, analysis and reporting of DAS monitoring surveys.		Completed.
Activity 2.7. Training of WCGA Officers / students in SCUBA diving.		Completed.
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 training needs assessment was completed. Training not completed.
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 populated with available data. Data provided the basis for the preparation of a new zoning plan. Training in the freeware software Quantum GIS (QGIS) (14 student May 2016) Training in the freeware software Marxan (16 students March 2017).
Output 3. Livelihood diversification and improved socio-economic resilience of the communities of Mohammed Qol and	Indicator 3.2. Gender-balanced business plans for nature-based ecotourism livelihood opportunities prepared by the end of Year 1.	Three business plans have been prepared following the field visit by our ecotourism consultant (24th November and 14th December 2017). Recommendations provided and various other initial business concepts for nature-based ecotourism, focussing on the domestic market. *Evidence provided*

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.		*in section 3.1 and 3.2 of report and Annex 7 21-019 Output 3.2_01*
	Indicator 3.2B Ecotourism training delivered to 10 to 15 Sudanese stakeholders in Year 3.	This is indicator was added during the change request, submitted in March 2016. Sustainable tourism training was delivered to 24 stakeholders. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 3.2_02 and 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.	"Guidelines for Marine Ecotourism in Areas of Outstanding Value" prepared and delivered to dive operators and WCGA. Training in the ecotourism guidelines is outstanding due to field access but now our local partner has field access it will be completed this year. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 3.3_01.*
	Indicator 3.4. Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).	This is a new indicator was added the last change request, submitted in March 2016. Livelihood assessment was completed and business concepts were identified in Year 1. Activities were put on hold due to lack of access to the project site. At project close work is ongoing with the local communities, by SUDIA and Red Sea State Ministry of Tourism and Environment. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 3.4_01. The project team acknowledges that request to modify this indicator should have been submitted*
	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.	The monitoring of dive boat operators and their participation in community based income generating activities commenced. Only one boat has been engaging in these types of activities and she since stopped operations due to the increase in the Egyptian boats. She has since restarted. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 3.9_01.*
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 (January-February 2015).
Activity 3.2 Prepare business plans for nature-based ecotourism livelihood opportunities that are both equitable and gender balanced.		Completed (November-December 2017).
Activity 3.2B 4 days training in ecotourism strategy		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 printed and delivered (February 2018). Training in the use of guidelines to be completed.

Activity 3.4 Support the development of community-based initiatives that deliver collaborative livelihoods and income generating activities (through access to microfinance).		Community-based initiatives to be completed.
Activity 3.9 Monitoring of the economic value of the dive industry (number of boats and tourists) and tourist numbers engaging in IGAs.		Commenced in Q2/2016, part complete.
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.	Completed. *Evidence provided in section 3.1 & 3.2 of report*
	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.	The Project Steering Committee meetings were stopped. Smaller informal meetings continued focussed on specific activities, outputs e.g. multi-stakeholder committee for the communication campaign. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 4.2_01, 21-019 Output 4.2_02..*
	Indicator 4.3. Bi-annual Darwin reports summarising project findings and reporting on progress and delivery of project outputs.	Completed.
	Indicator 4.4. Annual Stakeholder Workshop participant lists and feedback forms (x3).	The DI project team and partners have organised and participated in annual meetings / workshops with national, regional and international partners to coordinate and support collaboration on project activities. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 4.4_01, 21-019 Output 4.4_02, 21-019 Output 4.4_03, 21-019.*
	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.	10 copies of a first poster were printed and distributed to stakeholder. After the World Heritage site was inscribed, a new map was prepared and printed, which was then used as the basis for the new poster. 200 copies of which were printed and distributed. In addition to this Phase I and II of the education and outreach activities were completed in DMNP. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 4.5_01 and 21-019 Output 4.5_02, 21-019 Output 4.5_03, 21-019 Output 4.5_04* and *21-019 Output 4.5_05..*
	Indicator 4.6. At least two peer-reviewed paper submitted to a peer-reviewed scientific journal by the end of	Three scientific papers published and one book chapter. Papers presented at two international science conferences, plus at UN Headquarters during Oceans conference. Two new papers are in preparation this year. *Evidence provided in*

	Year 3; Results presented at one or more international scientific conferences by the end of Year 3; 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 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.	*section 3.1 & 3.2 of report and Annex 7 21-019 Output 4.6_01, 21-019 Output 4.6_02, 21-019 Output 4.6_03.* At the start press release was prepared and one radio broadcast was held. A leaflet and a short promotional video was prepared and released on Vimeo and shown at events in Sudan, and a full communication campaign plan prepared (see 4.8). A photographic exhibit was entitled "*The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site"*. was displayed at 6 events in Sudan reaching nearly 2000 people. The exhibit was expanded and the 'Sudanese Red Sea Did You Know?' exhibit was shown at another 6 events, reaching a further 3000 people. Two boys from DMNP visited New York to attend a high level event during the Oceans Conference. *Evidence provided in section 3.1 & 3.2 of report and Annex 7 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, 21-019 Output 4.7_08).* Website online in English and Arabic. • http://sudanmarineparks.info • http://www.cousteau.org/projects/protect-sharks-and-rays-of-the-red-sea/ • https://www.facebook.com/sudanmarineparks/ • Facebook: @sudanmarineparks • Twitter: @sudanmarinepark • Instagram: sudan_marineparks • Email: info@sudanmarineparks.info • Hashtag: #Sudanmarineparks The project ran an online campaign in parallel with 'The Sudan Red Sea 'Did You Know?' exhibits. The online component of the Sudan Red Sea 'Did You Know? campaign included a '30 Facts 30 Days'. A series of "Key Messages" were developed for key stakeholders and 30 "Key facts" highlighting key values of the MPAs and the UNESCO World Heritage site. Key Messages and Key Facts were produced in both English and Arabic to reach wider audiences (see Figure 2 and 3). *Evidence provided in section 3.1 & 3.2 of report and Annex 7 21-019 Output 4.8_01, 21-019 Output 4.8_02, 21-019 Output 4.8_03, 21-019 Output 4.8_04).*
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 were employed by SUDIA to manage the communication campaign.
Activity 4.2. Bi-annual Project Steering Committee meetings for Darwin Project to		Completed informal meetings between national partners.

discuss project progress and monitor delivery.	Completed formal meetings with regional and international stakeholders.
Activity 4.3. Preparation of bi-annual Darwin Initiative Project reports.	Completed.
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).	Completed. In final year SUDIA developed a Multi-Sector Advisory Committee to act as a consultative body for the Communications and Awareness Campaign, to ensure that delivery mechanisms, key messages, audiences and awareness material of the Campaign are accurate and effective. The Advisory Committee is comprised of 17 individuals from a wide range of sectors and expertise including , representatives from the Wildlife Conservation General Administration (WCGA), Sudanese National Commission for UNESCO, Marine Environment Protection Society Sudan (MEPSS), Sudanese Environment Conservation Society (SECS), UNESCO Chair of Marine Biology and Oceanography (MBAOUC), Red Sea University, Environment Initiative (EnvI), Ministry of Tourism , UN Environment, Equipe Cousteau, Fisheries Research Centre and the Ministry of Environment (see Output 4.2_01 and 4.2_02 for Advisory Committee Members list).
Activity 4.5. Prepare a poster summarising key project outcomes for distribution to dive operators and other organisations in Red Sea State of Sudan.	Completed. Two posters produced.
Activity 4.6. Prepare scientific paper(s) for submission to peer-reviewed journals and present findings at international conference.	Completed. Three papers and one booked chapter published.
Activity 4.7. Prepare media statements and popular articles to communicate interesting findings/actions to national, regional, and international newspapers, radio and TV.	Completed.
Activity 4.8. Prepare dedicated project website to disseminate project news/results, and broadcast updates using social media (Twitter, Facebook).	Completed.

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis	0					
1b	Number of PhD qualifications obtained	0					
2	Number of Masters qualifications obtained	0					
3	Number of other qualifications obtained	0					
4a	Number of undergraduate students receiving training	0					
4b	Number of training weeks provided to undergraduate students	0					
4c	Number of postgraduate students receiving training (not 1-3 above)	0					
4d	Number of training weeks for postgraduate students	0					
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)	10	Sudanese	Male		English / Arabic	10 English
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	47	Sudanese	Male		English / Arabic	7 SCUBA 16 Marxan 14 GIS 10 Maritime
6b	Number of training weeks not leading to formal qualification	8					
7	Number of types of training materials produced for use by host country(s) (describe training materials)	1					Ecotourism guidelines
Research Measures		**Total**	**Nationality**	**Gender**	**Title**	**Language**	**Comments/ Weblink if available**

9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	2	British	Female		English	Participatory process? Yes
10	Number of formal documents produced to assist work related to species identification, classification and recording.	0					
11a	Number of papers published or accepted for publication in peer reviewed journals	3	British	Male (Lead author)	Conservation: Sanctions derail wildlife protection* Aquatic animal telemetry: A panoramic window into the underwater world* Conservation of reef manta rays (Manta alfredi) in a UNESCO World Heritage Site: Large-scale island development or sustainable tourism?*	English	See Annex 5.
11b	Number of papers published or accepted for publication elsewhere	0					Location?
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	0					

12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	1					
13a	Number of species reference collections established and handed over to host country(s)	0					
13b	Number of species reference collections enhanced and handed over to host country(s)	0					

Dissemination Measures		**Total**	**Nationality**	**Gender**	**Theme**	**Language**	**Comments**
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	12	French, Sudanese, British	Male / Female	Scientific partnership meeting Communication /outreach	English / Arabic	1 x Scientific Partnership meeting; 6 x Outstanding Values Exhibits; 5 x Sudan Red Sea "Did you Know Exhibits" 2 x Education Outreach Phases (with additional seminars, etc)
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be	6	Multinational	Male / Female	CBD regional EBSA	English	

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
	presented/ disseminated.				workshop Joint meeting of Ichthyologists and Herpetologist ARC-WH Coordination meeting UN Oceans Conference Coral reef Symposium Port Sudan International Tourism Fair World Heritage Committee Meeting	 English English / Arabic English English English / Arabic English / Arabic	

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		
21	Number of permanent educational, training, research facilities or organisation established	0	
22	Number of permanent field plots established	0	Please describe

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	£4210 (100,000 SDP)	Sudan	Female	Communication Campaign	Arabic	From Zain (mobile company)

Annex 4 Aichi Targets

Please note which of the Aichi targets your project has contributed to.

Please record only the **main targets** to which your project has contributed. It is recognised that most Darwin projects make a smaller contribution to many other targets in their work. You will not be evaluated more favourably if you tick multiple boxes.

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	✓
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	✓
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	✓
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	✓
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	✓
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	✓

13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	✓
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	✓
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
Sharks and Rays of Sudan. A conservation and management programme benefiting local communities*	Noémie Stroh, Nigel Hussey, Abdel Rahman El Mahdi, Rebecca Klaus. 2015	French	French	Female	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*	Dirar Nasr, Tarik Chekchak, Rebecca Klaus, Nigel Hussey. 2015	Sudanese	Sudanese	Male	Technical report to the CBD	http://www.cbd.int/ebsa/
EBSA area N° 24 : Dungonab Bay/Mukawar Island Area*	Dirar Nasr, Tarik Chekchak, Rebecca Klaus, Nigel Hussey. 2015	Sudanese	Sudanese	Male	Technical report to the CBD	http://www.cbd.int/ebsa/
Final Draft Management Plan for Dungonab Bay and Mukkawar Island National Park 2016-2021	Klaus 2016	British	French	Female	PERSGA, Jeddah, Kingdom of Saudi Arabia	Not available online.
The Outstanding Universal Value of the Red Sea Coast of Sudan: Celebrating a Newly Declared UNESCO Natural World Heritage Site, Photographic Exibit*	Cousteau Society	French	French	Male	Cousteau Society	Not available online
Conservation: Sanctions derail	Hussey, N. (2014)	British	Canada	Male	Nature	Nature, 514, 305.

wildlife protection*						
Aquatic animal telemetry: A panoramic window into the underwater world*	Hussey et al. (2015)	British	Canada	Male	Science	Science. 34 (6240) 1255641-1.
Conservation of reef manta rays (Manta alfredi) in a UNESCO World Heritage Site: Large-scale island development or sustainable tourism?*	Steven Kessel, Nasreldin Alhasan, David Yurkowski, Tarik Chekchak, Ryan Patrick Walker, Rebecca Klaus, Graham Hill, Nigel Hussey	British	USA	Male	PlosOne	PLoS ONE 12(10): e0185419 https://doi.org/10.1371/journal.pone.0185419
Ecotourism in Marine Areas of Outstanding Value in the Red Sea and Indian Ocean	Cousteau Society	British	French	Female	Cousteau Society	Not available online (yet).

Annex 6 Darwin Contacts

Ref No	21-019
Project Title	Strengthening marine protected areas and marine ecotourism benefits in Sudan.
Project Leader Details	
Name	Tarik Chekchak / Rebecca Klaus
Role within Darwin Project	Co-Project Investigator
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Fax/Skype	
Email	
Partner 1	
Name	Abdel Rahman
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Role within Darwin Project	Director of local NGO
Address	
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Partner 2 etc.	
Name	Dr Nigel Hussey
Organisation	University of Windsor
Role within Darwin Project	Lead shark scientist
Address	
Fax/Skype	
Email	
Partner 3 etc.	
Name	Nasereldin Elamin
Organisation	Wildlife Conservation General Administration
Role within Darwin Project	General Manager Marine Protected Areas
Address	
Fax/Skype/WhatsApp	
Email	