

Darwin Initiative for the Sustainable Use of Sea Cucumber in Egypt and the Red Sea

Annual Report 2006

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Darwin Initiative

Annual Report

1. Darwin Project Information

Project Ref. Number	<i>EIDPO8/10-027</i>
Project Title	<i>Darwin Initiative for the Sustainable Use of Sea Cucumber in Egypt and the Red Sea</i>
Country(ies)	<i>Egypt</i>
UK Contractor	<i>University of Hull</i>
Partner Organisation(s)	<i>Suez Canal University, EEAA, GAFR</i>
Darwin Grant Value	£80, 176
Start/End dates	<i>May 2005 to May 2007</i>
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	<i>1 May 2005 to 1 May 2006</i>
Project website	<i>In Development</i>
Author(s), date	<i>Dr A J Lawrence</i>

2. Project Background

This is a follow up project to an original study supported by the Darwin Initiative (Darwin Initiative for the Sustainable Use of Sea Cucumber in Egypt, Reference: 162/10/027). The project is centred in Hurghada, Egypt but based along the whole of the Egyptian coastline. The original project has clearly identified over-fishing of sea cucumber in the Egyptian Red Sea as a significant problem. The management plan developed during the first study makes a number of recommendations which the new project could encourage the relevant agencies to adopt. Most importantly, the management plan recommends the continued ban of a fishery in the Egyptian Red Sea together with the establishment of a Monitoring Programme to assess any recovery in sea cucumber stocks. Ultimately, these should help in stock recovery and the future sustainable use of the resources, the principal goal of the original Darwin Initiative project.

In addition, data from the original Darwin project suggested that environmental factors may alter secondary metabolism in sea cucumbers. This has been reported in other, mostly microbial, systems but it is the first time that this has been reported in sea cucumber. Now, however, there is a clear need to determine, in the case of sea cucumbers, whether the differences in metabolism are triggered by environmental factors or whether there is some genetic basis to the differences. This clearly has important implications on the identification of species and future management of stocks.

3. Project Purpose and Outputs

The purpose of the project are threefold:

- To Encourage the relevant agencies in Egypt to adopt the recommendations from the Sea Cucumber Management and Monitoring Plan by initiating a post-project monitoring programme to assess the recovery

of depleted commercial stocks in Egypt during the period of the continued project. The monitoring to be undertaken primarily by EEAA Rangers (under supervision of the previously trained student) thereby further embedding and transferring skills within the relevant agency.

- Further examine the relationship between some sea cucumbers ability to modify the secondary compounds that they produce in different environments, to establish the relationship between environmental and genetic components of this relationship so that these can be interpreted in relation to taxonomy and any future release of cultured animals (highlighted as an important consideration both by the current project referee and in relation to ex-situ conservation/release of captive animals).
- To begin the process of broadening the project and technology transfer (in relation to species identification, monitoring of stocks, and adoption of sustainable fishery practices at a Red Sea/ East African regional level through the running of two regional workshops).

The main Outputs of the project will be: A Stock Monitoring Report & Modified Management Plan, Updated Field Guide to the Holothuria of the Red Sea, GTA Species Diversity & Population Genetics Final Report, Research Fellow Final Report on Bioactive Substances, Publication of a Status Report and Proposed Strategic Plan for Sustainable Use and Conservation of Sea Cucumber in the Red Sea/ East African Region, Production of a project website (See Logical Framework, Appendix 1).

Following a very successful meeting of the Scientific Committee, together with follow up meetings with USAID and NIOF a number of significant changes were made to the project and the allocation of project budget. These were:

- Money from the budget will be diverted into the establishment of a Marine Biotechnology Laboratory in the Marine Sciences Department at Suez Canal University.
- The money for this will be saved from the Egyptian salaries. After negotiation, all Egyptian partners agreed to release the money set aside for their salaries to help fund the establishment of the Laboratory.
- Only one Regional Meeting will now be held (rather than the originally proposed two). Additional funding for this meeting will be sought from PERSGA
- The Laboratory will be established with an initial £19,000. However, we plan to raise in the region of £30, 000 worth of equipment for the laboratory from this.
- The money set aside for the Monitoring Programme will now be diverted towards development of a mariculture system at the National Institute of Oceanography and Fisheries facility in Hurgada. Dr Soliman (Director of NIOF) has agreed to make the facility and some of his staff available to the project and will help financially in the development of the facility. Dr Soliman will lead the mariculture aspect of the project.
- The SC have invited NIOF to become a project partner and this has been accepted.
- The monitoring of sea cucumber stocks will continue, and be expanded to include additional sites further to the south of Egypt. The funding for this will be provided through the USAID Life Project/ EEAA to a minimum of the equivalent originally outlined in the Darwin project.

Based on these changes, modified work plans and budgets have been adopted (see Appendices 2 and 3). The changes were approved by the Darwin Secretariat in November 2005, although they have not yet seen the detailed changes to the work plan or budget.

4. Progress

• Brief history of the project

Meetings took place between partners in June 2005 and November 2005, with a follow up meeting with NIOF in February 2006. Based on these a number of changes were made to the project as highlighted above.

The GTA was employed in Hull and underwent training in molecular genetic methods. Samples of

species have been collected from the North and South of Egypt have been collected for the genetic study and further isolation and characterisation of bioactive compounds. Rangers have been trained in identification and monitoring methods and an on-going monitoring programme has been established. The mariculture facility at NIOF in Hurghada is being upgraded as part of a new aquaculture project.

- **Progress over the last year including slippage and additional Outputs**

The Graduate Teaching Assistant (GTA), Mr Mohammed Ismail, was employed by the University of Hull, from September 2006. He has received intensive training in DNA separation, amplification and detection methods in the Molecular Genetics Laboratory at Hull University, using sea cucumber material retained from the first project. In addition, he returned to Egypt in early 2006 to collect a variety of species from the Northern and Southern coastlines of the Egyptian Red Sea.

There has been some slippage in the molecular genetic aspects of the project for a number of reasons. Firstly, in order to follow University human resource procedures, the employment of the GTA took longer than anticipated. Second, it has proven difficult to extract DNA from preserved sea cucumber tissue. A variety of extraction methods have been attempted. These methods have now also been attempted in Egypt using a DMSO extraction method and by freezing freshly collected samples in liquid nitrogen. Third, there have been some slight problems in movement of teams to collect animals, particularly in the Sinai peninsula, following the recent bombing in Dahab.

Whilst in Egypt, the GTA also trained a group of selected EEAA Rangers in the identification of sea cucumber and a monitoring methodology was agreed. This is primarily based on the method adopted in the original study of commercial sea cucumber stocks. The Ranger teams are being led by Mr Wael Hefny, a Senior Ranger, based at the EEAA Offices in Hurghada. Mr Hefny is also coordinating the data collection and synthesis of information from the monitoring surveys.

Again, there has been some slight slippage in the establishment of the monitoring programme. This was partly due to the time needed to establish the teams but also due to changes in the staff at the USAID Life Project.

Following the decision to redirect funding into the establishment of a Biotechnology Laboratory in Suez Canal University, the necessary basic equipment needed to establish the laboratory was agreed and a number of quotes were sought from companies based in the UK. Based on these, an order was agreed and the equipment purchased. This is in the process of being flown to Cairo where it will be picked up by the Egyptian partners. Again, the time taken to negotiate the special deals on equipment that have been achieved has taken some time. In addition, there have been delays in the delivery of equipment by a few suppliers. This has delayed their shipment to Egypt and consequently, the establishment of the laboratory. Despite this, animals have been collected from a number of sites in the northern and southern sectors of the Egyptian Red Sea and preliminary extractions have been taking place. Most of the slippage that has taken place in the project to date is a result of the significant additional activities that have been incorporated into the work plan.

There are a number of significant additional activities currently underway that will lead to additional project outputs. First, the establishment of the biotechnology laboratory at Suez Canal University is a new activity and output. More fundamentally, the laboratory is seen, by the Egyptian partners, as leaving a significant legacy from the project that will allow this work to continue into the future and beyond the funding period.

In addition, whilst a monitoring study was part of the original proposal, it was originally planned to only survey a few sites to assess any recovery in stocks. This aspect of the study is now being supported by the EEAA and USAID Life Project, and may allow the broadening of the scope and number of sites that are being re-surveyed. However, the consequence of this is that it has taken a little longer to agree sites, establish and train teams of Rangers.

Thirdly, the financial support provided by the EEAA and USAID Life Project has released limited funds to continue and further support a mariculture study. This is also being financially supported by NIOF which has become and new partner on the project. The initial upgrading of the mariculture facilities in Hurghada,

together with their running costs is being funded by NIOF. The money being provided by the Darwin project will also go to running costs and the employment of one or two technical staff.

A significant achievement of the project in the last year has been its expansion during the planning stage with the subsequent reorganisation of the schedule and workplan. This, together with the additional funding made available to the project both by the EEAA, USAID Life Project and NIOF have significantly expanded the scope of the project.

In relation to species taxonomy and genetics, DNA Barcoding is being used to identify the animal's sequences from a uniform locality on the genome. The GTA has received comprehensive training in the DNA extraction and detection techniques. Mitochondrial protein-genes generally contain more differences than ribosomal genes and thus are more likely to distinguish effectively among closely related species. Sequence comparisons among protein-genes are easier because they generally lack insertions or deletions frequently present in ribosomal genes. Among candidate protein-coding gene regions, the cytochrome c oxidase 1 (CO1) locality contains sequence differences representative of those in other mitochondrial protein coding domains. The CO1 region represents approximately the first half of the gene and is 648 base pairs, a length easy to process in one (grab) with current technology and thus cheap. Results to date indicate that this CO1 barcode is easy to recover from diverse taxa, using a limited set of primers; readily aligned for sequence comparisons and effective in distinguishing among closely related species of sea cucumber.

Initially, DNA extraction from preserved sea cucumber tissue has proven difficult. Consequently, a variety of methods have been attempted in the laboratory and in the field. Results from these to date indicate that:

Preservation in alcohol is not effective. This is unfortunate because it is the method widely adopted in molecular genetics and it is the simplest method of tissue preservation of samples collected in the field.

Preservation of tissue in liquid nitrogen has proven successful. Good result was found using this method of preservation and extraction using the DNA kit. Unfortunately, using liquid nitrogen tanks is not easy or practical in the field.

Tissue samples have also been preserved in DMSO buffer and propylene glycol. DNA preservation in DMSO now been found to be very successful and this will be the method adopted for the study.

In addition, a variety of animal tissue types have been tested for DNA following extraction. Of these, no DNA could be obtained from the skin. The reason for this might be because of interference with the PCR reaction by calcium spicules. DNA has been detected for the internal organs of animals. However, the yield of DNA extracted from the internal organs was not enough. However, using tissue from the base of the tentacles has been successful for DNA extraction and shows good results.

Following training of the EEAA Rangers in species identification and agreement on the survey methodology, the field survey work has been started and is on-going. Three teams of Rangers are working on the survey:

1st Team:

Mr Wael Hefny, Senior EEAA Ranger and Survey Coordinator. He is involved in the survey of the whole area. Mr Tarik Abubakr (EEAA Ranger) is also involved monitoring all of the sites in the northern and southern sectors.

2nd Team:

Mr Mohamed Nigm and Fahim Rizk (EEAA Rangers from Wadi Gamil National Park) (WGPNP) are also involved in the survey of sea cucumber within WGPNP together with the first team.

3rd Team:

Mr Ashraf Sedik (EEAA Ranger) is involved in monitoring the Shalateen area (Southern Egypt) together with monitoring with the first team.

The method adopted principally follows that of the first project with 50m belt transects being surveyed at a variety of depths at each site. In addition, however, and where ever possible, GPS points are

being taken at the beginning and end of each transect for mapping and to provide data that is comparable with standard sea cucumber stock assessment methods that are to be proposed for the Pacific (Kim Friedman, *pers comm.*)

No significant difficulties have been encountered during the year other than delays incurred as a consequence of the expansion of the project and changes in personnel within some of the partners. For example, the Red Sea Governor has recently been replaced and this has consequent effects within most institutions whilst the new Governor has settled in.

The design of the project has been enhanced as previously described. In addition, we are liaising with Dr Kim Friedman, who is trying to encourage researchers to adopt standard survey methods for sea cucumber. We are hoping to, at least in part, adopt his proposed strategy in order to make the results of our survey work more directly comparable with that done elsewhere in the world. In addition Mrs Veronica Toral from the Darwin Research Station, Galapagos, has recently received funding from the UNFAO to produce a field guide to sea cucumber. We are collaborating with Veronica on the production of this manual. In relation to the exit strategy, we are currently preparing applications for the Leverhume Trust and UNFAO to further support aspects of the study

The modified project timetable is shown in Appendix 2.

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

- Not Applicable

6. Partnerships

The project partners continue to work together extremely well towards the goals of the project. This is evidenced by the fact that the individual Egyptian partners have agreed to release their salaries from the project budget to allow the funding to be redirected into the development of a biotechnology laboratory. This, the partners believe will leave a far greater lasting legacy from the project. In addition, the National Institute of Oceanography and Fisheries has joined as a partner and is investing in the redevelopment of its Hurghada facilities to support the project through the establishment of an invertebrate mariculture system.

Furthermore, collaboration with the USAID Life Project, notably through the links with Dr Hanafy, have further enhanced the project through the financial support that they are providing to continue the monitoring programme. The EEAA continue to make staff and facilities available for the project.

Continued links and collaboration includes that with Dr Yves Samyn (CBD Assistant National Focal Point, Belgium Royal Institute of Natural Sciences) re: taxonomy of Indian Ocean and East African Holothuroidea. We also established good links with Dr Kim Friedman and colleagues from and Veronica Toral (Darwin Research Foundation, Galapagos) re: species ID & Trade. We also have contact with a researcher from Oman who is trying to develop a mariculture system here for sea cucumber.

There has been less focus on the promotion of the project during the last year, more on the planning and delivery. Having said this, the continuance of the sea cucumber fishing ban in the Red Sea Governorate has raised the profile of the project in Egypt itself. A further plan, in development at this stage, is that the biotechnology laboratory will have an official opening, which will hopefully be undertaken by the Egyptian Minister for the Environment. If successful, this will gain media attention within the host country.

Progress has been made towards the exit strategy. This includes the drafting of an application to the Leverhume Trust to continue the work on the taxonomy and secondary compounds produced by sea cucumber. The new biotechnology laboratory will provide the focal point to this application. Discussion is also ongoing with NIOF in relation to an application to UNFAO to support the development of an invertebrate mariculture facility on the Red Sea. In relation to this, it is recognised first, there has never been a successful mariculture facility developed on the Red Sea coast of Egypt and second, given the difficulties identified with sea cucumber in the original project, that success would be more likely if broadened out to

include other, better studied but equally important, invertebrates. Progress towards a GEF application has not been made at this stage.

7. Outputs, Outcomes and Dissemination

Most outputs related to the work of the project have been achieved, including the training of Rangers, GTA and Research Fellow. Those not achieved at this stage relate to the establishment of the dissemination network (17), the running of the first Regional Workshop (14) and the production of a manual for this event (10). These aspects of the project have been deferred following the agreement to only hold a single, regional event. In addition, as previously noted, no press releases (15 a-d) or radio interviews (19) have been achieved. Finally, three additional outputs have been achieved. First, physical assets have been presented to the host country with an estimated cost of £30, 000 (20). Second, funding has been provided by USAID towards the monitoring programme. Third, NIOF are providing initial funds up to £10, 000 to begin the upgrading of their Hurghada facility.

Dissemination activities have been limited in the host country during the first year of the project. Dissemination of information beyond the time of the project has not been discussed by the Scientific Committee at this stage.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
5	5 Rangers trained in Sea cucumber ID	5				5
4c	GTA received training in molecular techniques	1				1
4d	GTA received 22 weeks training	1				1
4c & 4d	Research Fellow received training in project goals and methods over 12 weeks	1				1
12b & 13b	Species reference collection and database established	1 + 1				2
8	Two UK staff spent total of 4 weeks in Egypt	2				2
20	Physical Assets to a value of £30, 000 provided	1				1
23	£5, 376 provided by USAID for monitoring	1				1
23	£10,000 provided by NIOF to develop mariculture system	1				1

- In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database. Mark (*) all publications and other material that you have included with this report.

Table 2: Publications

No publications or material has been produced during the first year of the follow up project.

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
NONE				

8. Project Expenditure

- Please expand and complete Table 3.

Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)

Item	Original Budget (from Application)	Modified Budget (Appendix 3)	Expenditure	Balance
Rent, rates, heating, overheads etc				
Office costs (e.g. postage, telephone, stationery)				
Travel and subsistence				
Printing				
Conferences, seminars, etc				
Capital items/equipment				
Others (consumables Audit				
Aquaculture Development at NIOF				
Salaries (Egyptian Partner)				
GTA Salary				
EEAA Ranger per diem				
TOTAL	80, 176	80, 176	30, 314.51	49, 861.49

- The most significant change in expenditure has been in the transfer of funds out of salaries for the Egyptian partners and towards the cost of equipment for the Biotechnology

9. Monitoring, Evaluation and Lessons

Results from the monitoring survey, taxonomic study and bioactivity study will be provided in reports which will, themselves be the indicators of achievement. Similarly, the establishment of the new Biotechnology Laboratory will itself become the indicator of achievement.

The success of the monitoring project will be determined through the Red Sea Governorate's adoption of the recommendations made in the Monitoring Report. The success of the taxonomic study will be determined through the internal assessment of the GTA's first year report at Hull University. This will be examined by viva with two examiners. Ultimately, the success of the bioactive study will be determined through the submission of scientific articles and, hopefully, the success of the Leverhume application.

The main lesson learned from the first year of the study is that everything takes longer than anticipated and so realistic goals need to be considered over a longer timeframe. However, this is compensated for through the additional outcomes likely to be gained through the positive support and enthusiasm of partners.

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

■ I agree for ECTF and the Darwin Secretariat to publish the content of this section

I believe that the outstanding achievement of this project during its first year has been in the proactive management of the project by the Scientific Committee and support of the project partners. Most notably this is illustrated through the agreement of Egyptian partners to release their budgeted salaries back to the project to allow the establishment of a Biotechnology Laboratory at Suez Canal. This will clearly leave a significant lasting legacy in the country on completion of the project. It also highlights the selfless participation of the partners in the project, the strength of the partnership, and the desire by all involved to maximise the achievements of the project. This, together with additional support provided by NIOF, the EEAA and USAID Project also highlights the value the Egyptian Partners place on the work of the project.

Appendix 1

LOGICAL FRAMEWORK

<i>Project summary</i>	<i>Measurable indicators</i>	<i>Means of verification</i>	<i>Important assumptions</i>
<p>Goal:</p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <ul style="list-style-type: none"> • To monitor recovery of sea cucumber stocks in Egypt and move towards a sustainable fishery in Egypt and Regionally in the Red Sea and East coast of Africa 	<ul style="list-style-type: none"> • Updated Species List and GIS Database • Updated Species Reference Collection • Darwin Project 6 month, Annual & Final Report. • Stock Monitoring Final Report • GTA Final Report • Research Fellow Final Report • Regional Workshop Reports • Production of Project Website 	<ul style="list-style-type: none"> • Additional information included in NBU's NBS • Updated Fieldguide to Holothuria of the Red Sea Region • Updated Computer database and GIS system • Final Report of project Scientific Committee • Final Reports from the Monitoring, Bioactive Substances & Regional Workshop groups • Publications in scientific literature • Minutes and reports of all progress meetings 	<ul style="list-style-type: none"> • Recommendations from the original Management Plan are adopted in part or in full by the relevant agencies in Egypt • That stock recovery is detectable with a 2 year period • That Agencies in neighbouring countries show a commitment to the project • That enough additional funding can be found to support the attendance at workshops of those with insufficient funding to cover own expenses.
<p>Outputs</p> <ul style="list-style-type: none"> • Stock Monitoring Final Report & Modified Management Plan • Field Guide to the Holothuria of the Red Sea and East African Region • GTA Species Diversity & Population Genetics Final Report • Research Fellow Final Report on Bioactive Substances • Publication of a Status Reports and Proposed Strategic Plan for Sustainable Use and Conservation of Sea Cucumber in the Red Sea/ East African Region • Production of a project website • Further training of 	<ul style="list-style-type: none"> • Annual and Final report from the monitoring Team • GTA project report and a minimum of two Scientific papers • GTA research report on species diversity and population genetic structuring • Research Fellow report and publication of a minimum of 4 scientific papers • Workshop reports • Workshop final report and recommendations • Strategic Plan for Regional Cooperation in the Sustainable Use and Conservation of Sea Cucumber 	<ul style="list-style-type: none"> • Final Reports from the Monitoring, Bioactive Substances & Regional Workshop groups • Publications in scientific literature • Minutes and reports of all progress meetings • Final report of project scientific committee • Press releases/ newsletter articles • A Representative from the Darwin Initiative Secretariat and/or Monitoring Team given access to the Merlin internet management system • Copies of all Publications sent to Darwin Initiative 	<ul style="list-style-type: none"> • That a publisher for the modified field guide can be found • That a publisher for the Regional Status Report and Strategic Plan can be found. • That publishable data can be generated quickly enough to allow publication of scientific papers within the time-frame of the project • That Agencies in neighbouring countries show a commitment to the project • That, if required, enough additional funding can be found to allow participants from other countries to collect or provide a level of baseline information or

<p>EAAA Rangers in Stock Monitoring.</p> <ul style="list-style-type: none"> GTA trained in appropriate Molecular Genetic Methods 			<p>samples from their countries.</p>																																																																																																																					
<p>Activities</p> <ul style="list-style-type: none"> To initiate and embed a monitoring programme for sea cucumber in Egypt To elucidate the genetic/ environmental drivers of modified metabolite production between species populations To run regional workshops and move toward a Red Sea/ East African Regional Strategy for the Sustainable use of Sea Cucumber To train additional EAAA Rangers in sea cucumber monitoring and embed these skills into the individuals through an on-going monitoring programme To train the GTA in molecular genetic techniques and for the Darwin Research Fellow to pass on current training to others in Egypt To update the Merlin system and develop a Project Website 		<p>Activity Milestones (Summary of Project Implementation Timetable)</p> <table border="1"> <thead> <tr> <th></th> <th colspan="4">Year 1</th> <th colspan="4">Year 2</th> </tr> <tr> <th>Yr Quarters from May</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Scientific Cttee Meets</td> <td>■</td> <td></td> <td></td> <td>■</td> <td></td> <td>■</td> <td></td> <td>■</td> </tr> <tr> <td>Monitoring Project</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>Genetic Study</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>Bioactivity study</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>Project Progress Repts</td> <td></td> <td>■</td> <td></td> <td>■</td> <td></td> <td>■</td> <td></td> <td>■</td> </tr> <tr> <td>Website launched</td> <td></td> <td></td> <td>■</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Regional Workshops</td> <td></td> <td></td> <td></td> <td>■</td> <td></td> <td></td> <td></td> <td>■</td> </tr> <tr> <td>Draft & Final reports</td> <td></td> <td></td> <td></td> <td>■</td> <td></td> <td></td> <td></td> <td>■</td> </tr> <tr> <td>GIS/ collection update</td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>Scientific submissions</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>■</td> </tr> <tr> <td>Darwin Reports</td> <td></td> <td>■</td> <td></td> <td>■</td> <td></td> <td>■</td> <td></td> <td>■</td> </tr> </tbody> </table>			Year 1				Year 2				Yr Quarters from May	1	2	3	4	1	2	3	4	Scientific Cttee Meets	■			■		■		■	Monitoring Project	■	■	■	■	■	■	■	■	Genetic Study	■	■	■	■	■	■	■	■	Bioactivity study	■	■	■	■	■	■	■	■	Project Progress Repts		■		■		■		■	Website launched			■						Regional Workshops				■				■	Draft & Final reports				■				■	GIS/ collection update			■	■	■	■	■	■	Scientific submissions								■	Darwin Reports		■		■		■		■
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Appendix 2: Modified Work Plan and Timetable agreed at the November 2005 Meeting of Scientific Committee

	Year 1						Year 2					
Yr from November 2005	Nov 05	Jan 06	Mar 06	May 06	July 06	Sept 06	Nov 06	Jan 07	Mar 07	May 07	July 07	Sept 07
Scientific Cttee Meets	■				■				■		■	
Monitoring Project (funded by LIFE project)			■	■	■				■	■	■	
Monitoring Progress Report Submitted by M. Hanafy & M. Kotb					■						■	
Genetic Study	■	■	■	■	■	■	■	■	■	■	■	■

Genetic Study Progress Report Submitted by M. Ahmed												
Bioactivity study												
Bioactive Study Progress Report Submitted by R. Khattab												
Application for Additional Funding for Bioactive Studies (AJL, TP, RK, K)												
Aquaculture Study												
Aquaculture Progress Reports Submitted by FS & HG												
Application for Funding for Aquaculture (AJL, MH, Sol, HG, FS)												
Website launched												
Darwin Initiative half year and Annual/ Final Reports (A Lawrence)												
Chase Support for Regional Workshop (FAO, PERSCA) AJL, TP, MH, AI												
Regional Workshop												

Appendix 3. Modified Project Budget

Table 1. Modified Salaries Table from original proposal showing the savings made From salaries and made available to the project

Total savings to the project are Salaries = £19,000 = This goes to Capital Items

Total savings to Ranger per diems = £ 5,376 = This goes to Consumables

Table 2. Modified project costings showing the addition of budget into Capital Items Project Consumables and out of Salaries

Appendix 4. Capital Items Purchased with the savings from Original Budget

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2005/2006

Project summary	Measurable Indicators	Progress and Achievements April 2005-Mar 2006	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>To monitor recovery of sea cucumber stocks in Egypt and move towards a sustainable fishery in Egypt and Regionally in the Red Sea and East coast of Africa</p>	<ul style="list-style-type: none"> • Updated Species List and GIS Database • Updated Species Reference Collection • Darwin Project 6 month, Annual & Final Report. • Stock Monitoring Final Report • GTA Final Report • Research Fellow Final Report • Regional Workshop Reports • Production of Project Website 	<ul style="list-style-type: none"> • No new species identified at this stage • 6 month & annual reports submitted • Stock monitoring has been initiated • Work of GTA in progress • Work of RF in progress • Preparation of Regional Workshop to be progressed • Website is in development 	<ul style="list-style-type: none"> • Work on each element will be on-going • Completion of website and progression of regional workshop are key actions
<p>Outputs</p>			
<p>Stock Monitoring Final Report & Modified Management Plan</p>	<ul style="list-style-type: none"> • The updated Stock Monitoring and Management Plan 	<ul style="list-style-type: none"> • None at this stage 	<ul style="list-style-type: none"> • It takes time to organise the work from distance, setting up teams etc.
<p>Field Guide to the Holothuria of the Red Sea and East African Region</p>	<ul style="list-style-type: none"> • The Field Guide 	<ul style="list-style-type: none"> • None at this stage 	<ul style="list-style-type: none"> • None

GTA trained in appropriate Molecular Genetic Methods	<ul style="list-style-type: none"> The GTA's Final Report 	<ul style="list-style-type: none"> Training in molecular methods has been undertaken and is on-going 	<ul style="list-style-type: none"> Initial preservation problems due to the nature of the species, work is on-going
GTA Species Diversity & Population Genetics Final Report	<ul style="list-style-type: none"> GTA First Year Report GTA Final Report 	<ul style="list-style-type: none"> Work is progressing toward First Year Report due in September 06 	<ul style="list-style-type: none"> None
Research Fellow Final Report on Bioactive Substances	<ul style="list-style-type: none"> The Final Report 	<ul style="list-style-type: none"> Work is progressing 	<ul style="list-style-type: none"> Decision to set up laboratory in Egypt has delayed the work, now waiting delivery of equipment
Publication of a Status Reports and Proposed Strategic Plan for Sustainable Use and Conservation of Sea Cucumber in the Red Sea/ East African Region	<ul style="list-style-type: none"> The Status Report and Strategic Plan 	<ul style="list-style-type: none"> Work has not yet progressed in this area 	<ul style="list-style-type: none"> None
Production of a project website	<ul style="list-style-type: none"> The Website 	<ul style="list-style-type: none"> Work is progressing in this 	<ul style="list-style-type: none"> No funding means that we are doing this ourselves around other commitments
Further training of EEAA Rangers in Stock Monitoring.	<ul style="list-style-type: none"> The updated Stock Monitoring Report 	<ul style="list-style-type: none"> Preliminary training has been given, this needs to be supported and quality of data collection monitored 	<ul style="list-style-type: none"> Setting up of Ranger teams took some time

Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.