1021620

DARWIN INITIATIVE

FINAL REPORT STRUCTURE

1. **Basic Project Details**

- Project Title Egyptian Sea Turtle Conservation Project
- Contractor Queen Mary, University of London
- Host country collaborating institute(s) Suez Canal University
- Grant Round 1997
- Grant Value £143,632

2. **Project Expenditure**

- Total grant expenditure
- Breakdown of expenditure (using expenditure categories in the original application form)
- Explain any variations in expenditure +/- 10%

See attached last page to this report for these headings.

3. **Project Background/Rationale**

- Why was the project needed? Please explain the project development process.

Turtles are endangered worldwide, and especially so in the Mediterranean Sea. Unlike other Mediterranean countries there was no idea of current status of marine turtle populations in Egypt. High estimates for nesting turtles in a neighbouring country (Libya data from MEDASSET) made Egypt a likely region in which to find important turtle nesting sites.

- How was it related to conservation priorities in the host country?

Egypt is signatory to the CITIES convention, a requirement of this is to inventory all endangered species cited in the IUCN red book that are found in that country. This has now been achieved for Mediterranean turtles in Egypt as a direct result of this project.

- How was the project intended to assist the host country to meet its obligations under the Biodiversity Convention?

To inventory marine turtle nesting populations on the Mediterranean coast of Egypt over a three year period and thus meet CITIES requirements.

- Was there a clear 'end-user' for the project in the host country? Who?

Yes, the Egyptian Environmental Affairs Agency of the Egyptian Government. Recommendations made N0vember/December 2000, see document attached.

4. **Project Objectives**

- What were the objectives of the project (as stated in the original application form)?

a) The protection of Marine Turtles in Egyptian waters by protecting nesting areas, breeding adults, eggs and hatchlings.

b) The provision of justification for central government in Egypt to review current legislation affecting turtles and to issue and enforce new legislation for the protection of marine turtle species.

c) To survey species and genetic diversity, nesting population, nesting areas and abuse of turtles. The diret effects of tourism and pollution on breeding turtles will be evaluated,

d) To research breeding and migratory habits of Egyptian turtles and their role as natural predators of jellyfish which plague Sinai beaches in summer.

e) To train Egyptian turtle rangers who can ensure the future preservation of turtles in conjunction with the proposed non-governmental Egyptian Turtle Conservation Society. They will in turn train others including volunteer assistants.

f) To form an Egyptian Turtle Conservation Society to increase public awareness of biodiversity and conservation issues. To develop links with MEDASSET (Mediterranean Association to save sea turtles).

g) To target Egyptian fishermen, military personnel (who guard many beaches) and fish sellers with information on conservation needs for turtles in the eastern Mediterranean.

h) To develop regional co-operation on turtle conservation with Cyprus, Greece, Turkey and other neighbouring states.

- Were the objectives of the project revised? Yes. If so, how?

d) (part) Jellyfish feeding experiments. Because these could not be run (see below) they were replaced with experiments on the effects of temperature in wild nests during hatching. Temperature controls sex determination in turtles and our successful study of this has contributed to our knowledge of gender balance in turtles in Egypt.

f) Setting up the Egyptian Turtle Conservation Society (see below). We were fortunate to make contact with a small but expanding group of Egyptian Conservation Enthusiasts called "The Friends of the environment of Alexandria". Their chairman, a vet called Dr Mohamed Nada, has taken on the case of turtle conservation in Egypt as a prime issue. He is excited and motivated about this and his group is expanding. We are in regular contact with him. So far I think this group is having more impact on turtle publicity than the originally planned society might have achieved as its committee comprises young and dedicated Egyptians.

- Have the objectives (or revised objectives) been achieved? Yes, in the main.

  If so, how? The main elements of six of the eight objectives agreed with the Darwin Committee have been met by following the proposals laid out in the original application form.

- If relevant, what objectives have not been achieved, or only partially achieved, and why?

d) (part) Jellyfish feeding experiments could not be run because the Egyptian Environmental Affairs Agency would not issue us with the necessary permit to run experiments in captivity on CITES listed endangered species. These permits were absolutely necessary before we could capture turtles and keep them in aquaria. carrying out these experiments without these permits ran the risk of prosecution.

f) Fully establishing the Egyptian Turtle Conservation Society during the lifetime of the project was impossible because the Egyptian Ministry of Social Affairs repeatedly failed to process our application. Without authorization from this ministry clubs and societies cannot be formed legally. This proved difficult ground for aliens to break and our Egyptian partner made no progress either and his enthusiasm began to flag. The established link with the Friends of the Environment of Alexandria is looking very promising as they are young, committed and active.

5. **Project Outputs (see the attached list of project outputs which we would like you to use in compiling this section of the report)**

- What output targets, if any, were specified for the project? (Please refer to the project schedule agreed with the Department where relevant.)

a) 1997/1998 (6A) Several 1-day courses for between 50 and 100 fishermen, fish wholesalers and fish retailers and military representatives.

(8) Field officer in Egypt for at least 18 weeks of the year.

(8) UK project leader in Egypt for at least 2 weeks of the year.

b) 1998/1999 (6A and 6B) 4 turtle rangers trained in the principles of conservation and marine environmental management, general biology, reproduction, lifecycles and identification of turtles in UK for 3 months.

(6A and 6B) Several 1-day courses for between 50 and 100 fishermen, fish wholesalers and fish retailers and military representatives.

(6A and 6B) Up to 30 members of the Egyptian Turtle Conservation Society trained as volunteer assistants.

(6A and 6B) About three training days involving 30 civil servants from regional govenorates.

(8) Field Officer in Egypt for at least 40 weeks of the year.

(8) UK project leader in Egypt for at least 4 weeks of the year.

c) 1999/2000 (14A) About 20 overseas visitors and 30 Egyptian scientists and civil servants to attend 4-day international workshop.

(17A) New Egyptian society for the conservation of sea turtles established.

(18) Public awareness campaign conducted through the media with a series of turtle bulletins.

(8) Field officer in Egypt for at least 40 weeks of the year.

(8) UK project leader in Egypt for at least 4 weeks of the year.

d) 2000/2001 (16) Quarterly newsletter published in Egypt and in the UK with a circulation of several hundred.

(22) Between 10 and 20 sites identified for protection by legislation.

(9) Recommendations on protected sites delivered to EEAA.

(12) Computer database established.

(11) X number of papers published.

(8) Field officer in Egypt for at least 22 weeks of the year.

(16) Public awareness campaign in Egypt carried out.

- Have these been achieved? Twenty of the twenty two outputs were fully achieved.

- If relevant, what outputs were not achieved, or only partially achieved, and why? The new Egyptian society for the conservation of sea turtles was not established because of difficulties mentioned in 4f) above. However the liason with The Friends of the Environment of Alexandria provided a substitute which is likely to be more effective than the originally planned society.

  It was only possible to publish an English version of newsletter in most cases.

- Were any additional outputs achieved? Yes

  The production of a specialist training manual of 200pp.

  Additional ten day course in Cyprus for 2 trainee turtle rangers paid for by Mediterranean Action Plan/RACSPA.

  The introduction of legislation by the Lebanese Government to protect marine turtles in Lebanon.

  Additional training week for 15 university biology students and government employees from Suez Canal University and the Egyptian Environmental Affairs Agency.

  One British volunteer trained in Egypt.

One additional turtle ranger was trained in Egypt in 1999.

Turtle conservation pamphlet published in English and Arabic, 2000 copies distributed to schools, local authorities, fishermen, holiday makers, womens' groups etc.

Presentation of scientific results and conserevation recommendations at two scientific conferences in El Arish, Sinai, 1998 and 1999.

Attendance at International Turtle Conference in Padre Island, Texas 1999,

Attendance at International Turtle Conference in Orlando, Florida 2000, two

- If output targets were not specified, please state the outputs achieved by the project. As far as possible, we would like you to work through the list of outputs attached to this paper and to report on those which are relevant to your project.

6. **Project Operation/Management**

- Research projects - please provide a **full** account of the scientific work undertaken, outlining the methodology adopted, the staff employed and the research findings. The extent to which research findings have been subject to peer review should be addressed.

A. Turtle Nesting Surveys

Three-year assessment of the spatial and temporal patterns of marine turtle nesting on the Mediterranean coast of Egypt. Surveying of the coastal regions between the Israeli and ~~Lybian~~Libyian borders were surveyed by Dr Michael Clarke and Dr Andrew Campbell (QMW) and a four-person Egyptian support team of trained turtle rangers. An initial survey of the entire coast revealed that a small population of turtles were nesting in the eastern Sinai region of the Mediterranean coast. The methodology of this surveying activity is detailed below:

Methodology:
During the period 1 June to 1 September 1998 (the main marine turtle nesting season in the eastern Mediterranean) 616.5 km of sandy coastline, suitable for marine turtle nesting, was surveyed. Egypt's Mediterranean coast is naturally divided into three regions; the eastern (Sinai) region from Rhafa to Port Said; the central (Delta) region from Port Said to Alexandria; and the western region from Alexandria to El Salum. For the purpose of the survey the coast was divided into 74 beaches of variable length,

usually a stretch of coastline lying between two landmarks, such as villages, resorts etc. Each beach was identified with a unique code consisting of a number and a letter, signifying the order and region in which the beach was surveyed. The coordinates of the beginning and end of each beach were recorded using a Magellen 2000 global positioning system (GPS) and checked against 1:50 000 maps of the area.
Surveys were performed during daylight by two people; this involved walking the length of a beach from east to west, one person on the waterline the other following a parallel path 4-5 m above the high tide mark; newly formed emergence tracks from the previous night and tracks up to 3 weeks old located above the high water line were found. Due to the large distances covered in this study the frequency with which individual beaches were surveyed was initially low (i.e. once in the western and central regions, three times in the eastern region), therefore estimates of nesting populations were minimal. The total number of emergences found on each beach was recorded and the species identified from track morphology. If digging had occurred the nest was investigated to check if eggs had been laid.

In addition to identifying nesting beaches an initial assessment of the potential threats to nesting turtles in each region was made. The species, location, and curved carapace length (CCL) of any adult turtles found stranded on beaches during the survey was also recorded.

In subsequent years from 1999-2000, surveying was restricted to those areas identified during 1998 as supporting marine turtle nesting populations. Frequency of surveying was greatly increased due to the use of a 4x4 beach vehicle and reduction in the area of beaches surveyed. Time was also taken during 1999-2000 to perform basic ecological studies on nesting beaches.

These surveys concluded that a small population of loggerhead and green turtles are nesting on the eastern Mediterranean coast of the Sinai Peninsula close to the border with Israel. These populations probably only consist of 10 to 15 female loggerheads and 2 to 3 green turtles nesting annually in the region. These animals are under intense human pressures from collection of eggs, capture of adults at sea and development of the nesting beaches in the area for tourist development.

These results are summarized in the following peer reviewed article:

Clarke, M. Campbell, A. C., Hameid, W. & Ghoneim, S. (2000). Preliminary report on the status of marine turtle nesting populations on the Mediterranean coast of Egypt. *Biological Conservation*, 94, 363-371.

In addition to surveying activities, base-line ecological studies were performed on the nesting beaches. These included determination of nesting intervals, incubation temperatures, incubation periods, and hatching success rates. Summaries of these results can be found in the following references:

Clarke, M., Campbell, A. C., & Simms, C. (2000). The ecology of marine turtles nesting on the Mediterranean coast of Egypt. *In: Proceedings of the 20th International Conference on Marine Turtle Conservation.* Orlando, Florida, U.S.A. 27/2 – 5/3 2000. (*In press*).

Simms, C., Clarke, M., & Campbell, A. C. (2000). Predation of marine turtle hatchlings by ghost crabs on the Mediterranean Coast of Egypt. *In: Proceedings of the 20th International Conference on Marine Turtle Conservation.* Orlando, Florida, U.S.A. 27/2 – 5/3 2000. (*In press*).

Ghoneim, S, Campbell, A. C., Clarke, M., & Salama, W. (1999). Incidences of marine turtle mortality the Mediterranean coast of Egypt. *In: Proceedings of the nineteenth international conference on Marine turtle conservation.* Padre Island, Texas, U.S.A. March 2-5 1999. (*In press*).

Clarke, M., Campbell, A. C., Ghoneim, S. & Salama, W. (1999). Preliminary study of marine turtle nesting sites on the Mediterranean coast of Egypt. *In: Proceedings of the 19th International Conference on Marine Turtle Conservation.* Padre Island, Texas, U.S.A. March 2-5 1999. (*In press*).

B. ~~B.~~ Ecological Studies

These included a series of measurements on the effects of temperature on wild nests during hatching. These measurements were run successfully during the hatching seasons of 1999 and 2000. The temperature within the nests was monitored by data loggers during the hatching process. The success of hatching was evaluated by post hatch examination of the nests to determine the percentage hatch, the number of infertile eggs, and the percentage of failures in the early, mid and late hatch periods. From the temperatures recorded the sex ratios of hatchlings can be determined. These data are being prepared for publication at present.

The impact of Ghost Crabs as predators of turtle hatchlings was also assessed and the relationship between Ghost Crab population and strand line rubbish assessed.

Training projects - please provide a **full** account of the training provided. This should cover the content of the training, arrangements for selecting trainees, accreditation, etc.

In preparation for the 1998 field season, four Egyptian biologists (Wahid Salama Hemeid, Mohamed Mahmond Methwally, Magdy Abdel-Meguid El Alwany and Yousri Mahmoud Mohamed Ahmed) spent 10 weeks at the University of London being trained in all aspects of marine turtle conservation and biology. The curriculum included instruction in:

survey techniques

field studies
turtle identification
threats to marine turtles
status of marine turtle populations globally
case studies of other conservation projects
turtle physiology
life cycles

Two trainees were nominated by Suez Canal University and two by the Egyptian Ministry of State for Environmental Affairs, the Egyptian Environmental Affairs Agency (EEAA).

A training manual was produced, a copy of which is enclosed with this report.

Mohamed Mahmond Methwally and Yousri Mahmoud Mohamed Ahmed later attended a 10 day practical training course at the Lara marine turtle station in Cyprus conducted by Dr Andreas Demetropulous. This course included instruction on all practical aspects of marine turtle conservation, and was sponsored by the Mediterranean Action Plan in Tunis.

The trainees identified above conducted a 5-day marine turtle conservation workshop at Zaranik protected area in northern Sinai from 6-11 November 1998. During this workshop they passed on various skills to 15 biology students and government workers from Suez Canal University and the Egyptian Environmental Affairs Agency.

- Did any issues or difficulties arise in running and managing this project?

Yes. Egypt is in some ways a rewarding environment for a project like this because of the natural friendliness and willingness of the people to be helpful. There is also a genuine desire amongst many Egyptians to be better informed about their environment. It was easy to find people who appeared to be interested in helping the project. The negative side of this however was that once local people were recruited to act in a voluntary capacity they immediately expected money for their efforts and this rapidly became an issue with some people. We overcame it to an extent by the use of project T-shirts and momentos like Ramadan prayer schedules and telephone booklets inscribed with project logos and project aims. There were however several volunteers who refused to help unless they were paid a salary for which we had no budget.

7. **Project Impact**

- To what extent has the project assisted the host country to meet its obligations under the Biodiversity Convention, or to what extent is it likely to do so in the future? Please take account of the following in preparing this section of the report:

  - The way in which research findings have been **used** to address biodiversity objectives. What actions have been taken, or are expected to be taken, as a result of the project? How will these contribute towards the conservation of biodiversity in the host country concerned?

The project has assisted the host country to meet its obligations under the Biodiversity Convention by identifying 1) the species of marine turtle currently nesting on the Mediterranean shores of Egypt 2) by identifying those beaches that are used for turtle nesting and 3) by identifying the threats to those beaches and the turtles which use them.

The research findings have been used to address the biodiversity objectives of the project by 1) the public awareness programme, especially in relation to the fishing and coastal communities of north Sinai 2) the enthusiastic involvement of the Friends of the Environment of Alexandria who now have an ongoing programme of conservation activities and 3 by the presentation of the research findings to the Egyptian Environmental Affairs Agency of the Egyptian Government along with the preparation of detailed recommendations for legislation prepared in collaboration with two of the great international turtle conservation experts, Dr Jack Frazier and Dr Karen Eckert.

As a result of the project national government is expected to confer special protected status on the nesting beaches of north Sinai, especially beaches 7E, 10E and 14E. X, Y and Z. The risks from development will particularly be addressed through the local government of the Govenorate of north Sinai. These will make a major contribution to the conservation of biodiversity in Egypt and the eastern Mediterranean as a whole because they are some of the few remaining nesting beaches in the region.

  - The extent to which training provision has improved the capacity of the host country to conserve biodiversity in the future, and the extent

to which the training has addressed real skill needs. Information should be provided on what **each** student/trainee is now doing (or what they expect to be doing in the longer term), and the extent to which their skills are being used in a positive way to promote biodiversity conservation in the host country.

Wahid Salama Hemeid is now in middle management with the EEAA taking considerable reesponsibility for Egypt's turtle conservation programmes. He is a knowledgable field biologist and in a strong position to influence conservation policies of both central and regional government. He is very committed to turtle conservation and really holds a key position in this area. His skills are being used in a very positive way.

Mohamed Mahmond Methwally is in full employment with the EEAA in charge of a conservation area on the western Mediterranean coastal sector. He is in a position to influence local government coastal communities. His skills are being used in a very positive way.

Magdy Abdel-Meguid El Alwany is trying to complete his M.Sc at Suez Canal University. His skills are currently not being used although I believe they may be in the future as he is quite well motivated by environmental issues.

Yousri Mahmoud Mohamed Ahmed is now employed in the private fishery sector where he is in regular contact with fishermen and fish wholesalers and retailers and is in a position to influence them on conservation matters. His skills are being used in a fairly positive way.

The wider impacts of the project in terms of the level of collaboration achieved between UK and host country institutions, and the prospects for greater joint working/information exchange in the future. To what extent has good collaboration been achieved?

A good spirit of collaboration has been established between Queen mary, Unibversity of London, and the Egyptian Environmental Affairs Agency.

A memorandum of collaboration was signed by Queen Mary, University of London and Suez Canal University.

8. **Sustainability**

Did the host country institute(s) contribute resources to this project (these may have been provided in-kind, for example staff, materials etc)?

It provided some accomodation when field work was taking place in eastern Sinai.

- If so, what is the monetary value of the resources committed to the project by the host country institute(s)?

Estimated at the equivalent of £500

To what extent was Darwin funding a catalyst for attracting resources (including in-kind contributions) from other sources? Please provide details on the other sources from which resources were secured for this project.

The Darwin funding was a catalyst.

Loan of 4wd drive vehicle by AGIP petroleum estimated at £2000 per annum for three years.

Mediterranean Action Plan/RACSPA £1200 for two trainees to spend an extra 10 days at Lara Station in Cyprus

British Gas Egypt gave US$2000 towards conservation publicity.

AMOCO Egypt gave £1000 towards the costs of the beach signs and a prize for the best student paper at the Concluding cairo Workshop US$500.

Marathon Oil offered an additional 4wd vehicle for the project but our Egyptian collaborator was unable to get the necessary tax free documentation passed through Suez Canal University.

BP Egypt sponsored entertainment and a student prize US$500 for the Concluding Cairo Workshop.

- What is the monetary value of resources generated for the project from other sources (please provide an estimate for each funding source)?

See above

- To what extent is work begun by the project likely to be continued in the future (if this is relevant - some projects may come to a natural end at completion)? This is more likely to be relevant for research-based projects.

The Friends of the Environment of Alexandria are very likely to continue to apply pressure on the Egyptian Government to continue work in the field of Marine Turtle Conservation in Egypt. This is especially true in the fields of

illegal catches and sales of turtles in fishmarkets and conservation of nesting beaches.

- Has the project acted as a catalyst for other projects/initiatives in the host country? Is it likely to do so in the future?

Not yet as far as we are aware

9. **Outcomes in the Absence of Darwin Funding**

- Had Darwin funding been unavailable for the project, what would have been the most likely outcome:

  . The project would have proceeded with other funding? From whom?
  . The project would have proceeded at a reduced scale? Please explain.
  . The project would have been delayed? Please explain.
  . The project would not have proceeded?

It is unlikely that the project would have proceeded.

- Had this project not been undertaken, how would the users/beneficiaries of the project have met their requirements? Would other organisations/ initiatives have been able to meet their needs (at least to some extent)?

The Friends of the Environment of Alexandria would have taken some steps to prevent the illegal catching and sales of marine turtles in fish markets.

10. **Key Points**

- What would you identify as the key success factors of this project?

The current status of marine turtle nesting populations in Egypt is now known. The level of public awareness of turtle conservation issues has been increased. The Egyptian Environmental Affairs Agency now has trained staff actively involved in administering turtle conservation.

- What were the main problems/difficulties encountered by the project?

The Egyptians' reluctance to act as volunteers and the cumbersome and inpenetrable administrative mechanisms for setting up clubs and societies. Also the ingrained culture of getting family and friends involved with projects rather than securing the services of the best qualified and most able people. This

seemed to be more of a problem in the university than in the government departments.

- What are the key lessons to be drawn from the experience of this project? Please try to provide as much information on this point as you can so that others can learn from the experiences of your project.

Not to work in Egyptian universities if government agencies are available as

That public awareness campaigns can generate considerable enthusiasm in Egypt, especially in young people and minority groups.

developing and managing projects funded as part of this Initiative?

amount of plannng will guarantee

To assist future evaluation work, please provide contact details (name, current address, tel/fax number, e-mail address), for the following:

- UK project leader (and other key UK staff involved in the project)

Dr Andrew Campbell, School of Biological Sciences, Queen Mary University of London, Mile End Road, London, E1 4NS;

- Host country project leader/co-ordinator (and other key people involved in the project at the host country collaborating institute)

Prof Samir Ghoneim, Fish research centre, Suez Canal University, Ismailia, Egypt; telephone

- 'End users' for the output produced by the project in the host country (ie. government departments, agencies, universities, local communities etc)

Egyptian Environmental Affairs Agency, Natural Conservation Sector. Dr Moustafa M.Fouda. 23A Ismail Mohamed Str. 8th floor, Apt 92, Zamalek, Cairo;

- Project trainees/students

  Wahid Salama Hemeid and Mohamed Mahmond Methwally
  Egyptian Environmental Affairs Agency, Natural Conservation Sector 23A
  Ismail Mohamed Str. 8th floor, Apt 92, Zamalek, Cairo;

- Other key players involved in the funding/operation/utilisation of the project.

PLEASE REMEMBER TO ATTACH COPIES OF ALL DOCUMENTATION PRODUCED BY THE PROJECT IE. REPORTS, PAPERS, MANUALS GUIDES, CONFERENCE/WORKSHOP PROCEEDINGS TRAINING MATERIALS ETC

Ref: 9120/FORMS/9120-FRS

Total Darwin Funding as per quarterly claim forms: £ 143749.77

Finances: Table to show breakdown and variation in expenditure of budget as set out on quarterly claim forms:

EXPENDITURE DETAILS	REVISED BUDGET TOTAL	AMOUNT CLAIMED/ SPENT	UNDER SPEND	OVER SPEND	%AGE BUDGET
Rents, rates, lighting and cleaning					
Postage, telephone stationary					
Travel, subsistence etc.					
Printing					
Conferences, seminars					
Capital items, vehicle and field equipment					
Other: airfares, local T&S, training scheme					
Salaries					
Total					

*Overspend due to salary rises exceeding projections in application.