



Submit by 21 January 2005

DARWIN INITIATIVE APPLICATION FOR GRANT ROUND 13 COMPETITION:STAGE 2

Please read the Guidance Notes before completing this form. Applications will be considered on the basis of information submitted on this form and you should give a full answer to each question. Please do not cross-refer to information in separate documents except where invited on this form. The space provided indicates the level of detail required. Please do not reduce the font size below 11pt or alter the paragraph spacing. Keep within word limits.

1. Name and address of organisation

Name: Dr Mauvis A Gore	Address: University Marine Biological Station, University of London, Millport, Isle of Cumbrae, KA28 0EG
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2. Project title (not exceeding 10 words)

Conservation of Pakistan's Marine Cetacean Biodiversity and Pelagic Environment
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3. Project dates, duration and total Darwin Initiative Grant requested

Proposed start date:	01 October 2005	Duration of project:	3 years		
Darwin funding requested	Total (£) 167308	2005/6 (6mo) (£) 27282	2006/7 (1y) (£) 55470	2007/8 (1yr) (£) 55832	2008/9 (6mo) (£) 28724

4. Define the purpose of the project in line with the logical framework

Recent evidence indicates that significant, previously unstudied populations of over 20 species of whale and dolphin occur within the Pakistani EEZ (NE Indian Ocean). The project will undertake surveys urgently needed to determine their abundance, diversity and seasonal habitat use, assess the status of their pelagic environment and document threats to their populations. In collaboration with Pakistani partners, the Darwin-badged project will develop management options and recommendations, helping to fulfil the "Pakistan National Conservation Strategy". It will emphasise, through Karachi University, capacity building and training of Pakistani students, academics and fisheries officers. Sustainability will be achieved by establishing, with WWF-Pakistan, an active national cetacean conservation group.
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5. Principals in project. Please provide a one page CV for each of these named individuals

Details	Project Leader	Other UK personnel (working more than 50% of their time on project)	Main project partner or co-ordinator in host country
Surname	Gore		1. Ahmad 2. Siddiqui
Forename (s)	Mauvis Ann		1. Ejaz 2. Pirzada Jamal A
Post held	Research Fellow		1. Dep. Director General 2. Asst. Professor
Institution	University of London		1. WWF-Pakistan 2. Karachi University
Department	UMBSM		2. CEMB

6. Has your organisation received funding under the Darwin Initiative before? If so, give details

NO

7. IF YOU ANSWERED NO TO QUESTION 6 describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)

Aims (50 words) to teach and host courses in marine biology; to undertake research in marine ecology, marine microbiology, fisheries biology, marine biodiversity and coastal zone management; to maintain and operate a public museum and marine aquarium; to promote public awareness of marine biology and marine conservation issues and priorities.

Activities (50 words) hosting and teaching for students, from more than 25 HEIs, undergraduate and graduate courses in marine biology, including in marine conservation and marine mammal biology; undertaking fundamental and applied research in marine ecology, biodiversity, behaviour, microbiology, fisheries, and environmental management, including in tropical seas and of marine mammals.

Achievements (50 words) UMBSM employs over 30 staff, possesses state-of-the-art research vessel and recompression chamber, and over the past 10 years has secured grants and contracts worth over £5million and published over 300 research papers. Current projects include research on marine mammals in Scotland, Oman, Egypt and the Dominican Republic.

8. Please list the overseas partners that will be involved in their project and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. What steps have been taken to ensure the benefits of the project will continue despite any staff changes in these organisations? Please provide written evidence of partnerships.

Dr Pirzada JA Siddiqui, Karachi University (KU), will liaise with other agencies, organise and teach the Marine Mammal Module at KU, and supervise the KU Research Officers (ROs). They will participate in all field work and assist teaching the KU Marine Mammal Module; one will be responsible for maintaining the cetacean database and curating cetacean samples, the other for the analysis of zooplankton samples.

Dr Ejaz Ahmad, WWF-Pakistan (WWF-P), will liaise with other agencies, particularly the Ministry of Environment (National Focal Point), facilitate and supervise the two WWF-P Project Officers (POs) who will participate in all fieldwork. In addition, one, Mr. Babar Hussain, will be responsible for the fisher reporting scheme, organise the fisher workshops and develop the fisher whale-watching enterprise. The other will be responsible for all public awareness activities, including Darwin Initiative-badged publicity, for developing the national cetacean conservation group, and for preparing the education packages.

Mr Qadeer Ali, KU, has participated in preliminary zooplankton sampling and will be responsible for identification of zooplankton species, and quality control of zooplankton sample analysis.

Drs Siddiqui and Ahmad have been actively involved in the project's development, including accessing supporting funds from the HEC-BC and OPCF. They have, together with other staff and students, participated in preliminary field trips (boat-based surveys near and offshore) and laboratory work (curating cetacean skeletal remains and examining zooplankton samples). The project has the support of the KU and WWF-P directors, who would allocate new counterparts, should staff leave. Written evidence of partnerships is enclosed.

9. What other consultation or co-operation will take place or has taken place already with other stakeholders such as local communities? Please include details of any contact with the government not already provided.

Meetings have been held or contact made with the following national or provincial government departments and collaboration agreed as indicated: a) Marine Fisheries Department (Director Moazzam Khan): collaborate in offshore surveys and in liaison with fishermen. b) Zoological Survey, Ministry of the Environment (Dr. Hamid Iqbal): collaborate in offshore surveys and in policy development. c) Sindh Wildlife Department: support beach surveys along Sindh coast. d) Balochistan Forest Department: support beach surveys along Balochistan coast. The principle of a Project Advisory Panel, to include representatives of these and the partner organisations has been agreed.

Fishers will be involved, through a series of community workshops, in a fisher reporting scheme and, subsequently, in developing commercial whale-watching operations. Their local knowledge will be incorporated in the assessment of the pelagic ecosystem. Preliminary work with two fishing communities, and with skippers and crews of fishing boats used in preliminary survey work, revealed considerable enthusiasm for assisting with sightings, collecting cetacean remains, supporting the experience of WWF-P and the Marine Fisheries Department, that the fishing community will be highly supportive of project aims.

PROJECT DETAILS

10. Is this a new initiative or a development of existing work (funded through any source?) Are you aware of any other individuals/organisations carrying out similar work, or of any completed or existing Darwin Initiative projects relevant to your work? If so, please give details explaining similarities and differences and showing how results of your work will be additional to any similar work and what attempts have/will be made to co-operate with and learn lessons from such work for mutual benefits.

This is a new initiative: after pioneering work on inshore small cetaceans by Pilleri & Gahr (1972), there have not been comprehensive surveys of cetaceans in the E Arabian Sea, although observations by fishers and fisheries staff, oil exploration studies, and illegal Soviet whaling (Mikhalev 2000), taken with our preliminary work, indicate that Pakistani waters harbour hitherto unstudied cetacean populations. For adjacent India, 65% of cetacean reports are of strandings and bycatch. The only comparable work in the region has been in Omani waters by the Oman Whale & Dolphin Research Group, with which UMBSM has existing active links. Concerns that fishing activities are the major threat to local cetaceans (WDCS 2002), with coastal species at particular risk (Baldwin 1999) will be investigated in the project. The only previous cetacean conservation work has been on the Pakistan fresh-water Indus river dolphin, part-funded by the Darwin Initiative.

11. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please make reference to the relevant article(s) of the CBD thematic programmes and/or cross-cutting themes (see Annex C for list and worked example) and rank the relevance of the project to these by indicating percentages. Is any liaison proposed with the CBD national focal point in the host country? Further information about the CBD can be found on the Darwin website or CBD website.

This Darwin project will support Pakistan's implementation of Articles 6 - 5%, 7 - 10%, 8 - 10%, 10 - 10%, 12 - 5%, 13 - 5%, and 18 - 5%, with emphasis on Biodiversity & Tourism: 5%, Ecosystems Approach: 10%, Marine & Coastal Biodiversity 20%, Protected Areas: 5%, Public Education & Awareness: 5%, and Sustainable Use & Biodiversity: 5%. Little is known of the status of Pakistan's marine cetaceans, but 2 species are considered endangered and 1 vulnerable. The project will determine seasonal occurrence and abundance, identify local threats, and provide key information for the development of species action plans to promote *in situ* conservation. Recommendations will be made for existing and new coastal and marine protected areas. The project will assess the status of their habitat, the pelagic ecosystem (including plankton, fish and sea-birds), and promote its sustainable use and biodiversity, including developing whale-watching as an alternative use. It will promote public awareness of Pakistan's cetacean population and establish, through WWF-P, a national cetacean conservation group. The project will liaise with CBD focal point(s) in the Ministry of the Environment through the responsible department (the Zoological Survey) and the Ministry's CBD working party, which includes project counterparts from both WWF-P and KU.

12. How does the work meet a clearly identifiable biodiversity need or priority defined by the host country? Please indicate how this work will fit in with National Biodiversity Strategies or Environmental Action Plans, if applicable.

The Pakistan National Conservation Strategy identifies 14 core programme areas among which are "6. Protecting Water Bodies & Sustaining Fisheries" and "7. Conservation of Biodiversity". The former includes (#24) a recommendation for alternative employment for fishers, and the latter recommendations (#30 & #34) to develop new National Parks and to protect endangered species, under which cetaceans fall. Policies for Coastal & Marine Resources recommended by the strategy include "filling information gaps on coastal resources & resource use", and "developing alternative employment for coastal communities". Similarly the Pakistan Biodiversity Action Plan identifies requirements for identification & monitoring, *in situ* conservation, sustainable use, research and training, and public education & awareness, each of which the present project is designed to assist. WWF-P itself has prioritised marine conservation, especially of threatened species within the Indus Delta Ecoregion (#156) and North Arabian Sea Ecoregion (#232).

13. If relevant, please explain how the work will contribute to sustainable livelihoods in the host country.

The work will contribute to sustainable livelihoods in fisheries through the monitoring and assessment of the health of the pelagic environment in which they work. WDCS (2002) suggest that indirect threats to cetaceans in Pakistan include deforestation and pollution, which would impact cetaceans via their food sources, fish and zooplankton, upon which fishers also depend. The development of management plans will benefit fishers and their livelihood by providing guidelines on the protection and sustainable use of the pelagic environment, and through support for marine protected areas, which are shown to improve sustainable use of the marine habitat and support biodiversity. Planned development and promotion of whale-watching businesses will also contribute to the provision of sustainable livelihoods.

14. What will be the impact of the work, and how will this be achieved? Please include details of how the results of the project will be disseminated and put into effect to achieve this impact.

The project will ensure the value and status of Pakistan's cetacean populations become well known. Data will inform the development of management strategies for the conservation and sustainable use of cetacean and associated pelagic resources, and lead to recommendations for protective legislation, including Marine Protected Areas. Through implementation of Species Action Plans, supported by a national cetacean conservation group and developing whale-watching tourism, threats to cetaceans within Pakistani waters will be minimised. Project results will be disseminated through 1) presentations to scientific conferences, 2) WWF-P and the cetacean conservation group, 3) dedicated workshops for fishing communities, 4) public awareness & educational materials, 5) the media, 6) the interagency Project Advisory Panel, through which government will receive project reports, 7) the CBD working group within the Ministry of Environment on which WWF-P and University staff are represented, and 8) peer-reviewed scientific publications.

15. How will the work leave a lasting legacy in the host country or region?

This will be achieved by: 1) emphasising, through the transfer of the Marine Mammal Module from UMBSM to KU, the capacity building and training of Pakistani students, academics and project officers, who will disperse appreciation of cetacean conservation issues through both formal organisations and related social groups, 2) establishing, through WWF-P, an active national cetacean conservation group, which will attract a continually growing membership, especially among the informed younger generation, 3) promoting within government the development of Biodiversity and Species Action Plans, including the introduction of protective regulations and legislation, and the expansion or establishment of new Marine Protected Areas, and, 4) promoting among fishing communities greater awareness of existing signs of impact to the pelagic ecosystem and of the requirements for sustainable exploitation of marine resources, including non-destructive exploitation of cetacean populations.

16. Please give details of a clear exit strategy and state what steps have been taken to identify and address potential problems in achieving impact and legacy.

Project aims will be sustained through 1) WWF-P, a large, highly proactive NGO with 27 regional offices and over 300 staff, committed to a long-term role in promoting conservation & management of Pakistan's cetacean population directly, within which the WWF-P POs are expected to continue in post, 2) the planned national cetacean conservation group, 3) KU, which will continue to offer the Marine Mammal Module in their degree programme, so training future biologists and stimulating public interest & awareness, and where, it is anticipated, the ROs will be appointed as academic staff, likely to continue research and conservation activities on cetaceans, 4) the SAPs and other policies developed through the project, which will influence the work of the responsible government agencies (Fisheries and Zoological Survey Departments) into the future, and 5) the Project Advisory Panel, which will specifically address issues of impact and legacy.

17. How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

The Darwin name and logo will be used on all cetacean related public awareness and information material (including whale and dolphin identification and conservation cards and reporting forms) issued by the project, both through WWF-P and its planned national cetacean conservation group, and through KU, to fishing communities, government agencies, scientific meetings, students, the media and the general public. The project will be promoted as a Darwin project, through quarterly Darwin-badged press / TV / radio promotions, annual publicity leaflets distributed to WWF-P target groups, a semi-annual newsletter, a cetacean educational package, and existing WWF-P and University web sites (e.g. www. WWFpak.org).

18. Will the project include training and development? Please indicate who the trainees will be and criteria for selection and that the level and content of training will be. How many will be involved, and from which countries? How will you measure the effectiveness of the training and will those trained then be able to train others? Where appropriate give the length and dates (if known) of any training course. How will trainee outcomes be monitored after the end of the training?

Project aims will be underpinned by capacity building within Pakistan's marine science community. Staff from KU and WWF-P will be trained in field techniques during survey work in Pakistan, on training visits to UK (UMBSM) and Oman (fieldwork with the OWDRG). Yrs 2 / 3 Jul: Pakistani counterparts (2), research officers (2) & project officers (2) will attend UMBSM's intensive (10 days) hon./graduate level Marine Mammal Module (MMM) in UK. Yr 2 Nov: MMM taught at KU by UK staff. Yr 3 Nov: MMM will be taught at KU jointly by KU and UK staff. Subsequently, it will be taught entirely by Pakistani staff. Standard University assessment procedures will apply. Field skills (identification, quantitative survey, safety) will be judged by cross-checking with more experienced fieldworkers. It is anticipated that the KU research officers may wish to register for PhDs at KU, where they will be jointly supervised by KU & UK staff.

LOGICAL FRAMEWORK

19. Please enter the details of your project onto the matrix using the note at Annex B of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
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 <ul style="list-style-type: none"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
Purpose Conservation & management of whale & dolphin biodiversity in the NE Indian Ocean (Pakistan), and of the pelagic resources on which they depend, through research, protective measures, capacity building and Darwin-badged public awareness and participation programmes.	At least 1 cetacean hotspot to be established as a Marine Protected Area (MPA). Steps taken to reduce threats to cetaceans. Conservation & research projects established in KU and WWF-P. National cetacean <u>group</u> established. Fishers and others participating in sustainable use initiatives.	Proposals for MPAs and other protective actions published. Correspondence with ministries concerning implementation. Researchers and project officers in post, and publishing papers and reports. Cetacean group with membership of at least <u>100</u> . Fishers set up 1+ whale-watching business, and attend workshops.	Cetacean populations are not affected by impacts beyond the control of the conservation programme, such as by-catch mortality outside Pakistani waters. The effects of economic factors do not exceed the benefits of increased public and official support for cetacean conservation.
Outputs Regular monitoring of cetaceans & pelagic environment established with two partner institutions.	3 annual reports & 3 scientific articles published & distributed. Database running.	Reports, articles and database copied to Darwin Initiative.	Security situation on coast continues to be acceptable. Weather conditions not atypical.
Understanding of threats to cetacean populations.	Specific reports and scientific article published.	Reports and article copied to Darwin Initiative	Reasonable progress with survey work.
Recommendations for establishment of MPAs and other protective actions.	Specific report published and distributed.	Report available. Correspondence with relevant Pakistani agencies.	Reasonable progress with survey work.
Training of Pakistani academics and project officers.	At least <u>6</u> Pakistani personnel attend UMBSM courses.	Course registration documentation.	None
Cetacean biology teaching established Karachi University.	Annual module attended by total of <u>80+</u> students.	KU academic records.	Expected interest among students.
National cetacean conservation group established.	Membership of at least <u>100</u> . Regular newsletter.	Group records and newsletters copied to Darwin Initiative.	None
Awareness by stakeholders (e.g. fishers) of potential for sustainable use.	Fishers cetacean reporting scheme and whale-watching business launched.	Publicity material. Reports of data. Workshop proceedings.	Expected interest among fishers.

Activities	Activity Milestones (Summary of Project Implementation Timetable)
Boat-based surveys	Yr 1 Nov: preliminary surveys of inshore areas of Sindh. Yr 2 Nov: survey of inshore areas of Balochistan. Yr 3 Nov: surveys of offshore marine areas. <u>Yr 1-3 Apr-Oct: observers on deep sea vessels offshore</u>
Beach surveys	Yr 1 <u>Nov</u> , <u>Yr 1-3 Jan</u> : beach surveys (for cetacean remains) of Sindh and Balochistan.
Training	Yrs <u>2 & 3</u> July: Pakistani counterparts attend UMBSM course in UK. Yr 1- <u>3</u> : Training in field of these & other Pakistani staff.
Teaching	Yr 2: UMBSM course taught at KU by UK staff. Yr 3: by KU & UK staff.
Publicity	Yrs 1-3: Quarterly Darwin-badged press / TV / radio promotion. Annual publicity leaflet distributed to all WWF-P target groups. Yr 1: Web site established. Yr 2 onwards: Semi annual newsletters published. Yr <u>2</u> : publish cetacean educational package.
Government liaison	Yr 1: liase with government ministries & agencies, form Project Advisory Panel. Yrs 2 & 3: semi-annual meetings of panel.
Workshop	Yr 2 Feb: for fishers and others to promote understanding of cetacean ecology and pelagic biodiversity; <u>Yr 3 Nov</u> : for development and running of commercial whale-watching
Stakeholder liaison	Yr 1: meet with fishers' groups during beach surveys. Yr 2: identify interested fishers & promote reporting scheme, launch of national cetacean conservation group. Yr 3: select fisher group to establish whale-watching activities.
Laboratory Work	Yrs 1-3: process plankton samples and habitat data, collate fisheries data, obtain satellite imagery; analyse data.
Reporting	Yrs 1-3 Mar: prepare annual reports on activities. Yr <u>3 & 4 Sep</u> : prepare first two scientific publications. Yr 3 Jun: first report on management options. Yr 3 <u>Feb</u> : recommendations for MPAs and other conservation actions; draft cetacean biodiversity action plan.
Networking	Yr 1: establish exchange of personnel and photo-identification material with OWDRG (Oman), and other N. Indian Ocean specialists.

20. Provide a project implementation timetable that shows the key milestones in project activities.

Project implementation timetable		
Date	Financial year	Key milestones
	Apr-Mar 2005/6 (6mo) Apr-Mar 2006/7 (12mo) Apr-Mar 2007/8 (12mo) Apr-Mar 2008/9 (6mo)	
Jul 05	Apr-Mar 2005/6	Advertise for Pakistani Research & Project Officers
Jul 05	Apr-Mar 2005/6	Liase with OWDRG & other Indian Ocean cetacean specialists
Oct 05	Apr-Mar 2005/6	Research & Project Officers commence employment
Oct 05	Apr-Mar 2005/6	Establish Project Advisory Panel
Nov 05, Feb 06	Apr-Mar 2005/6	Darwin-badged publicity packages to media
Nov 05	Apr-Mar 2005/6	Publish first public awareness leaflets
Nov 05	Apr-Mar 2005/6	First Project Advisory Panel meeting
Nov 05	Apr-Mar 2005/6	Begin shore survey & boat-based survey of inshore Sindh
Jan 06	Apr-Mar 2005/6	Publish identification card & recording form for fishers
Jan 06	Apr-Mar 2005/6	Pilot Fisher Reporting Scheme
Feb 06	Apr-Mar 2005/6	Darwin-badged Project pages on KU and WWF-P websites
Mar 06	Apr-Mar 2005/6	Complete boat-based survey of inshore Sindh
Apr 06	Apr-Mar 2006/7	Publish Annual Report
Apr 06	Apr-Mar 2006/7	Observers begin 1st season for deep sea fishing vessels
May, Aug, Nov 06, Feb 07	Apr-Mar 2006/7	Darwin-badged publicity packages to media
Jul 06	Apr-Mar 2006/7	Marine Mammal Module at UMBSM; Field training session with OWDRG
Jul 06	Apr-Mar 2006/7	Close of 1st field season, fisher liaisons, surveys on land and at sea, samples curated, training carried out on Sindh coast
Aug 06	Apr-Mar 2006/7	Educational packages published and distributed through WWF-P to the public
Oct 06	Apr-Mar 2006/7	Publish Half-yearly Report
Nov 06	Apr-Mar 2006/7	Marine Mammal Module first taught at KU
Nov 06	Apr-Mar 2006/7	Begin boat-based survey of inshore Balochistan
Dec 06	Apr-Mar 2006/7	Launch of national cetacean conservation group, "Pakistan Whale & Dolphin Group" (PWDG)
Jan 07	Apr-Mar 2006/7	Begin shore survey of E Balochistan
Feb-Mar 07	Apr-Mar 2006/7	Fisher Workshops held in Sindh & E Balochistan
Mar 07	Apr-Mar 2006/7	Complete boat-based survey of inshore Balochistan
Mar 07	Apr-Mar 2006/7	Launch of PWDG semi-annual Newsletter
Apr 07	Apr-Mar 2007/8	Publish Annual Report
Apr 07	Apr-Mar 2007/8	Fisher workshop held in W Balochistan
Apr 07	Apr-Mar 2007/8	Observers begin 2nd season for deep sea fishing vessels
May, Aug, Nov 07, Feb 08	Apr-Mar 2007/8	Darwin-badged publicity packages to media
Jul 07	Apr-Mar 2007/8	Marine Mammal Module at UMBSM; Field training session with OWDRG
Jul 07	Apr-Mar 2007/8	Close of 2nd field season, fisher liaisons, surveys on land and at sea, samples curated, training carried out
Sep 07	Apr-Mar 2007/8	Target for actual publication first scientific paper
Oct 07	Apr-Mar 2007/8	Publish Half-yearly Report
Nov 07	Apr-Mar 2007/8	Marine Mammal Module at KU
Nov 07	Apr-Mar 2007/8	Fisher commercial whale watching workshop and launch
Nov 07	Apr-Mar 2007/8	Begin ship-based offshore surveys
Jan 08	Apr-Mar 2007/8	Begin shore survey of W Balochistan
Feb 08	Apr-Mar 2007/8	Recommendations for Management Plans & Marine Protected Areas, draft Cetacean Biodiversity Action Plans
Apr 08	Apr-Mar 2008/9	Observers begin 3rd season for deep sea fishing vessels
May, Aug 08	Apr-Mar 2008/9	Darwin-badged publicity packages to media
Jul 08	Apr-Mar 2008/9	End of 3rd field season, fisher liaisons, surveys on land and at sea, samples curated, training carried out
Sep 08	Apr-Mar 2008/9	Target for actual publication second scientific paper
Dec 08	Apr-Mar 2008/9	Final Report

21. Set out the project's measurable outputs using the separate list of output measures.

PROJECT OUTPUTS		
Year/Month	Standard output number (see standard output list)	Description (include numbers of people involved, publications produced, days/weeks etc.)
06 Nov, 07 Nov	4A; 4B	80 & 80 Pakistani undergraduates at Marine Mammal Module, Karachi University; 2 weeks/yr
05 Nov-Dec, 06+07 Apr-May, Jul, Nov-Dec, 08 Apr-May	4C; 4D	2 Pakistani graduates; 30 weeks/yr
(as for #4 above)	6A; 6B	2 Pakistani Project Officers: 30 weeks/yr
06 Jul	7	Package to teach academic Marine Mammal Module
05 Nov-Dec, 06+07 Apr-May, Jul, Nov-Dec, 08 Apr-May, Aug	8	60 weeks inclusive for 4 UK project staff
08 Feb	9	1 Management / Action Plan for Pakistan's marine cetacean biodiversity and pelagic environment
06 Dec	10	Fisher reporting scheme identification cards
07 Sep, 08 Sep	11A; 11B	3; 3: i) cetacean & pelagic environment surveys, ii) significance of beached cetaceans, iii) conservation issues & proposals
08 Sep	12A	2 databases: i) cetacean, zooplankton, seabird and environmental parameters; ii) fisher & other reports
08 Sep	13A	2 reference collections: i) zooplankton, ii) cetacean skeletal and other remains
07 Feb-Apr, Nov	14A	3 fisher workshops, 1 development of commercial whale-watching workshop
06-09 Mar; 08 Nov	14B	4 national conferences on Coastal Zone Management; 1 international conference of Marine Mammal Society
05 Nov, 06+07 Feb, May, Aug, Nov, 08 Feb, May, Aug	15A & 15B	12: Pakistani national & local quarterly press releases
06+07 Nov, 08 Sep	15C	3 UK national press releases
07+08 Mar, Sep	16A; 16B	4 newsletters; 100 cetacean conservation group members
06 Dec	17A	2 networks: Fisher Reporting Scheme and National Cetacean Conservation Group
06-07 Nov, 08 Aug	18A	3 items for national television news
07 Feb, May, Aug, Nov, 08 Feb, May, Aug	19A	7 items for national radio news
08 Sep	20	£3440 scientific equipment
06 Nov	21	1 Marine Mammal Unit at Karachi University
06 Nov	23	valued at £70,000 (matching grants plus facilities and salaries as contributions in kind)

MONITORING AND EVALUATION

22. Describe, referring to the Indicators in the Logical Framework, how the progress of the project will be monitored and evaluated, including towards delivery of its outputs and in terms of achieving its overall purpose. This should be during the lifetime of the project and at its conclusion. Please include information on how host country partners will be included in the monitoring and evaluation.

The Pakistan Project Advisory Panel will meet every 6 months to discuss and advise on progress, and to assess indicators, with specific attention to links with government agencies, staff positions, establishment of the cetacean conservation group, the fisher reporting scheme and workshops, field & laboratory work, training and academic courses, stakeholder awareness and the recommendations for marine protected areas, and habitat & species management action plans. Output production can be verified against the measures noted in the Logical Framework, such as course registration, KU academic records, scientific publications, annual reports, management guidelines, and operation of commercial whale-watching. The semi-annual and annual reports will be submitted to the Project Advisory Panel and the UMBSM Research Committee, and copied to the Darwin Initiative.