



2/503

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**

<b>Name:</b> Imperial College	<b>Address:</b> London SW7 2BP
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**2. Project title (not exceeding 10 words)**

Development of a conservation strategy for the critically endangered Mekong giant catfish
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**3. Project dates, duration and total Darwin Initiative Grant requested**

Proposed start date:		Duration of project:			
Darwin funding requested	Total	2005/06	2006/07	2007/08	2008/09
	£ 86,752	£ 41,776	£ 44,976	£	£

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

The purpose of the project is to develop an overarching conservation strategy for the Mekong giant catfish integrating, as appropriate, supportive breeding with harvest and habitat management. This will involve (1) quantitative assessment of population status based on existing information, (2) quantitative assessment of the likely effectiveness of different conservation measures such as supportive breeding, harvest restrictions and habitat conservation/restoration (3) review and improvement of captive breeding procedures; (4) promotion of appropriate adaptive policies for the further development of the strategy; and (5) definition of an overall species conservation strategy in consultation with a broad range of target institutions.
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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	Main project partner or co-ordinator in host country
<b>Surname</b>	Lorenzen		Phillips
<b>Forename (s)</b>	Kai		Michael
<b>Post held</b>	Senior Lecturer		Programme Manager Research & Development
<b>Institution</b>	Imperial College London		Network of Aquaculture Centers in Asia-Pacific (NACA)
<b>Department</b>	Division of Biology, Faculty of Life Sciences		

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

Fisheries Management for Biodiversity Conservation in the Brazilian Amazon (Dr Kai Lorenzen); Conservation of the Paguyaman Forest, North Sulawesi, Indonesia (Dr E.J. Milner-Gulland); Using Saiga Antelope Conservation to Improve Rural Livelihoods (Dr E.J. Milner-Gulland)

**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)**

**Activities (50 words)**

**Achievements (50 words)**

**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.**

Main partners: Network of Aquaculture Centers in Asia-Pacific (NACA), Bangkok, Thailand; Mekong River Commission Fisheries Programme (MRC-FP), Vientiane, Lao PDR; IUCN Mekong Wetlands Biodiversity Programme (MWBP); and FAO Fisheries Department, Rome, Italy. The Fisheries Departments of Cambodia, Laos and Thailand will participate in the project through established partnerships with these regional organisations, which support their work financially and through capacity building. NACA is an Asian intergovernmental organisation promoting the sustainable development of aquaculture through networking and capacity building (Dr Mike Phillips, and a Darwin Project Officer to be recruited). The Mekong River Commission Fisheries Programme focuses on basin-wide issues of water and habitat management relevant to fisheries (Dr Niklas Mattson). The MWBP promotes biodiversity conservation, and has already started work on a giant catfish conservation plan which will be integrated into this joint initiative (Mr Alvin Lopez, Dr Zeb Hogan). The FAO Fisheries Department (Dr Devin Bartley) is the UN lead agency for promoting sustainable use of living aquatic resources. The national fisheries departments are responsible for all aspects of fisheries management, and the Royal Thai Department of Fisheries (Dr Naruepon Sukumasavin) also runs the main captive breeding programme for giant catfish. The proposal was developed jointly by NACA, MRC-FP, MWBP, FAO and Imperial College in partnership with the national fisheries departments. It builds on a long history of successful collaboration between the partners. Continuation of benefits is assured by the fact that all partner institutions are involved in giant catfish conservation efforts, which are mandated by their operational plans and funded from core budgets or long-term donor commitments. The project aims to improve the effectiveness of these ongoing efforts by developing an overarching strategy based on rigorous population assessments and improved coordination. Letters of support from partners are attached.

**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.**

Consultation with all relevant stakeholders is an integrated aspect of the research programme. This will take the form of working group meetings and workshops with management and research stakeholders (most of whom are formal project partners). Consultation with fishing communities will focus on participatory appraisals of options for reducing incidental harvest. These community consultations will be conducted primarily by the national partners, and training in participatory approaches will be given by the project where required.

## 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. It builds on ongoing giant catfish conservation work by a range of stakeholder, virtually all of which are partners in this Darwin proposal. The project will be unique and distinctive in its level of population analysis and integrated, quantitative assessment as well as the scope of concerted conservation action. To the best of our knowledge, this rigorous and concerted strategic approach is unique in tropical freshwater fish conservation.

**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.**

The project will develop, and foster the implementation of a conservation strategy for the critically endangered Mekong giant catfish. It will thus directly assist the host countries in meeting their obligations under the CBD (Cambodia and Thailand are parties to the CBD, Laos not yet). It will substantially increase the capacity of Mekong regional and national institutions to operate conservation programmes by conducting a rigorous, quantitative and integrated assessment of conservation status and priority actions. As a result, the supportive breeding programme will be better managed and integrated with habitat and harvest management measures. Adaptive management policies will inform the long-term development of conservation initiatives. The project will support the implementation of Articles 8 (15%), 9 (20%), 15 (15%), 12 (10%), 17 (10%) and 18 (10%); with respect to the theme "Inland Waters Biodiversity" (20%).

**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 Mekong giant catfish (*Pangasianodon gigas*) has been listed as critically endangered in the 2003 IUCN Red List. Its precarious status is likely to be the result of excessive targeted and incidental harvesting over the past twenty years, and to a lesser extent habitat degradation. A charismatic animal revered throughout the lower Mekong, the giant catfish has become the flagship species for aquatic biodiversity conservation in the Mekong river system. Given the critical state of the population, conservation and eventual recovery will require a combination of captive breeding, reduction in harvest, and conservation/restoration of critical habitat. A captive breeding programme has been instituted by the Thai Department of Fisheries. The MWBP supports a scheme to buy and release a large share of the small number of adult catfish still caught in fisheries, but incidental harvest of juveniles continues. Information on giant catfish biology assembled by the MRC-FP is being used to identify critical habitats. Despite of these initiatives, there is no overall conservation strategy for the giant catfish. The effectiveness of measures taken so far is largely unknown, and some measures may actually be detrimental. For example, a poorly managed captive breeding programme may threaten the genetic diversity of the remnant wild stock, while the benefits of releasing wild adults caught in the fishery must be weighed against the benefits of retaining them for the captive breeding programme. The project will provide a rigorous assessment of such issues based on quantitative population assessment, and translate results into agreed management action through the development of an integrated conservation strategy.

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

The harvest of freshwater fish contributes significantly to rural livelihoods throughout the Mekong region. By focusing on the conservation of a highly revered flagship species, the project will promote conservation and restoration of aquatic ecosystems and fisheries resources, and thus help to sustain fisheries-dependent livelihoods. The Mekong giant catfish itself is unlikely to support a sustainable fishery within the next couple of decades even if restoration efforts prove highly effective.

**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 achieve significant impact through the generation of new knowledge on the effectiveness of alternative conservation and recovery measures, and the development of an effective, overarching conservation strategy. This strategy will include mutually agreed actions to be taken by the key stakeholders in giant catfish conservation, most of whom are project partners. The project will achieve very good value for money by providing key scientific inputs to substantially improve the effectiveness of ongoing conservation initiatives, and fostering synergies between them. The project will involve regular workshops and a continuous electronic forum with representatives of all key stakeholders. Wider dissemination within the region will be achieved through a quarterly printed and electronic newsletter and the draft and final species conservation strategy, all of which will be prepared in the three riparian languages (Khmer, Lao, Thai). Technical reports will be published through NACA and FAO, and scientific publications submitted to leading journals. A project web page will allow downloading of all documents as soon as they become available.

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

The project will leave in place a long-term conservation and recovery strategy for Mekong giant catfish, based on rigorous scientific assessment of options, and with agreed priority actions by the key stakeholders (most of them represented as project partners). Throughout the project, collaborative research and planning will strengthen the capacity of regional and national partner institutions to continue strategic conservation work on the giant catfish, and extend it to other aquatic species.

**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.**

By working through regional intergovernmental organisations involved in long-term capacity building (NACA, MRC, MWBP, FAO), and establishing adaptive policies for future programme development the project ensures local ownership, long-term impact and institutional sustainability. Giant catfish conservation is prioritized in the operational plans of several of the project partners, and funding for these activities is secure for the foreseeable future. Specific funding needs will be identified during conservation strategy development, and long-term budgetary allocations sought by the partner institutions. In addition, support will be given to project partners in developing new proposals to external funding bodies.

**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 project will work in partnership with existing, high profile conservation initiatives. It will maintain a distinct and highly visible profile through the provision of key British expertise in population analysis and management, and co-ordination of ongoing initiatives. The Darwin name and logo will be used on the project web pages and on those linking to it from the partner institutions. The Darwin name and logo will also be used on all project outputs including newsletters and reports.

**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?**

The project will involve a substantial element of "on the job" training of key national partners. Participants in the project workshops will be trained in advanced concepts and methods of population assessment. Other national staff will be trained in specific field work and data analysis skills required to carry out studies such as participatory appraisals, catch monitoring and analysis etc. Selection of such staff will be the responsibility of the senior national and regional partners represented in the working group. The effectiveness of training will be judged by the quality of the research outputs produced, and the degree to which project recommendations are followed up and implemented within partner institutions.

**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.**

**This version contains further details of measurable indicators at output level, activities and milestones. It is otherwise unchanged.**

Please enter details of your project onto the matrix below using the note at Annex B of the Guidance.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<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"> <li>• the conservation of biological diversity,</li> <li>• the sustainable use of its components, and</li> <li>• the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</li> </ul>			
<p><b>Purpose</b> Effective conservation strategy for the Mekong giant catfish developed and promoted</p>	<p>Strategy document available and taken up by target institutions</p>	<p>Project reports and publications</p>	<p>Target organisations remain committed to, and are adequately resourced to implement conservation programme</p>
<p>Outputs</p> <ol style="list-style-type: none"> <li>1. Conservation status of giant catfish assessed quantitatively</li> <li>2. Scope for supportive breeding, habitat and harvest management evaluated quantitatively</li> <li>3. Opportunities to improve captive breeding and translocation practices assessed</li> <li>4. Adaptive management policies developed</li> <li>5. Overall strategy for conservation developed and promoted</li> </ol>	<ol style="list-style-type: none"> <li>1. Conservation status assessed using population models by 12/2005</li> <li>2. Effectiveness and feasibility of conservation measures assessed by 7/2006</li> <li>3. Captive breeding procedures reviewed, and improvements identified by 3/2006</li> <li>4. Adaptive management policies defined by 9/2006</li> <li>5. Strategy report, 8 quarterly newsletters, 4 technical reports and 4 scientific papers available by 3/2007;</li> </ol>	<ol style="list-style-type: none"> <li>1. Conservation status assessment report and publications</li> <li>2. Conservation option assessment and incidental harvest PRA reports available</li> <li>3. Captive breeding practices reports and publications</li> <li>4. Report and paper on adaptive policies</li> <li>5. Copies sent to Darwin initiative</li> </ol>	<ol style="list-style-type: none"> <li>1. Existing data sufficiently informative</li> <li>2. Target institutions embrace integrated strategies</li> <li>3. Captive breeding practices can be improved within given resource constraints</li> <li>4. Target institutions implement adaptive policies</li> <li>5. Strategy taken up within and beyond partner institutions</li> </ol>

<p>Activities</p> <p>1.1 Collation of existing information from collaborating institutions</p> <p>1.2 Model development and quantitative analysis of data to estimate parameters and test hypotheses about population status and threats</p> <p>2.1 Review of existing conservation measures and the institutional framework</p> <p>2.2 Participatory assessment of options to reduce incidental harvest</p> <p>2.3 Development of model for captive bred/wild population interactions</p> <p>2.4 Projections of population development given alternative conservation measures and scenarios of future fishing pressure and environmental state</p> <p>2.5 Consolidation of scenarios, incorporation of cost-benefit information and results from captive breeding procedures study</p> <p>3.1 Review of captive breeding and release strategies</p> <p>3.2 Analysis of translocation strategies for conservation in semi-natural habitats such as reservoirs</p> <p>4.1 Identification of key uncertainties pertaining to recovery strategy</p> <p>4.2 Development of monitoring strategy</p> <p>4.3 Definition of alternative pathways and decision rules for review of strategy in the light of monitoring results</p> <p>5.1 Project workshops to develop strategy</p> <p>5.2 Wider consultation with partner and other target institutions to finalise strategy</p> <p>5.3 Project newsletter, consultation document and final strategy published in riparian languages</p> <p>5.4 Strategy development process and outcomes documented in technical report and peer-reviewed papers</p>	<p>Activity milestones</p> <p>1.1 Existing data collated by July 2005</p> <p>1.2 Model developed and data analysed by December 2005</p> <p>2.1 Review completed by September 2005</p> <p>2.2 Assessment completed by December 2005</p> <p>2.3 Model completed by December 2005</p> <p>2.4 Scenario modelling completed by March 2006</p> <p>2.5 Final scenarios selected by July 2006</p> <p>3.1 Review completed by March 2006</p> <p>3.2 Translocation strategies assessed by March 2006</p> <p>4.1 Key uncertainties identified by July 2006</p> <p>4.2 Monitoring strategy by September 2006</p> <p>4.3 Adaptive response strategy by November 2006</p> <p>5.1 WG meetings in 5/2005, 11/2005, 4/2006, 9/2006, 2/2007</p> <p>5.2 Consultation completed February 2007</p> <p>5.3 Newsletter quarterly, preliminary strategy by November 2006, finalized by February 2007</p> <p>5.4 Report/manual on process by March 2007</p>
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**20. Provide a project implementation timetable that shows the key milestones in project activities.**

Project implementation timetable		
Date	Financial year	Key milestones
July	Apr-Mar 2005/6	<ul style="list-style-type: none"> <li>Project inception meeting of WG</li> </ul>
September	Apr-Mar 2005/6	<ul style="list-style-type: none"> <li>Existing data relevant to conservation assessment compiled</li> </ul>
December	Apr-Mar 2005/6	<ul style="list-style-type: none"> <li>Participatory appraisals of options to reduce incidental harvest completed</li> <li>Population dynamics model developed and data analysed</li> <li>Conservation status workshop</li> </ul>
June	Apr-Mar 2006/7	<ul style="list-style-type: none"> <li>Captive breeding procedures reviewed</li> <li>Effectiveness of alternative conservation measures assessed</li> <li>Captive breeding workshop</li> </ul>
September	Apr-Mar 2006/7	<ul style="list-style-type: none"> <li>Economic and practical feasibility of alternative strategies assessed</li> <li>Draft strategy available</li> <li>Strategy workshop</li> </ul>
December	Apr-Mar 2006/7	<ul style="list-style-type: none"> <li>Strategy consultation with partner and other target institutions completed</li> </ul>
March	Apr-Mar 2006/7	<ul style="list-style-type: none"> <li>Strategy endorsed by key target institutions</li> <li>Strategy published</li> <li>Wider dissemination workshop</li> </ul>

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

<b>PROJECT OUTPUTS</b>		
<b>Year/Month</b>	<b>Standard output number (see standard output list)</b>	<b>Description (include numbers of people involved, publications produced, days/weeks etc.)</b>
05/12	11B	Paper on population assessment of giant catfish submitted
05/12	14A	3 Project workshops (15 participants each)
05/12	14B	1 Conference attended
05/12	17B	NACA captive breeding network established
05/12	8	PI to spend 8 weeks in host countries
06/06	11B	Paper on recovery strategy modeling subm.
06/06	11B	Paper on conservation hatchery practices subm.
06/12	14A	3 Project workshops (15 participants each)
06/12	14B	1 Conference attended
06/12	8	PI to spend 8 weeks in host countries
06/12	11B	Paper on conservation of Mekong giant catfish
06/12	11B	Report/manual on large fish conservation planning
06/12	11B	
07/03	9	Meking giant catfish species conservation strategy published
Entire Project	16A	8 quarterly newsletters produced and disseminated in riparian languages
Entire Project	5	5 staff from host countries to receive long-term training
Entire Project	23	Approx. £ 88,000 contributions in kind from partners and host countries

**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.**

Progress will be monitored against logframe indicators and activity milestones, and reported in the six month and annual reports. Indicators and milestones have been defined in relation to the outouts that can easily be monitored by the partners and the project leader. Purpose level indicators include measures of uptake, which will be evaluated at the conclusion of the project through comparison with conservation measures in place at the bedinning of the project. Monitoring and evaluation of all activities is a an integrated part of the project.