



## **Darwin Initiative**

### **Annual Report**

#### **1. Darwin Project Information**

Project Ref. Number	<i>14-017</i>
Project Title	<i>Tool kits for the Sustainable Management of Ghana's Riverine Biodiversity</i>
Country(ies)	<i>Ghana, Burkina Faso, Nigeria, Cote d'Ivoire, Togo, Benin</i>
UK Contractor	<i>University of Liverpool</i>
Partner Organisation(s)	<i>University of Ghana</i>
Darwin Grant Value	<i>£65,779.00 (2005-6) £188,816 through project life</i>
Start/End dates	<i>May 2005 – April 2008</i>
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	<i>1 April 2005 to 31 March 2006 Annual Report No 1</i>
Project website	<i><a href="http://pcwww.liv.ac.uk/aquabiol/Darwin_Ghana/">http://pcwww.liv.ac.uk/aquabiol/Darwin_Ghana/</a></i>
Author(s), date	<i>Prof E Maltby, Prof B Moss, Dr R T Leah, Prof Chris Gordon, May 2006</i>

#### **2. Project Background**

*The project is being undertaken with the Centre for African Wetlands at the University of Ghana but will eventually also train personnel from Burkina Faso, Nigeria, Cote d'Ivoire, Togo and Benin. The project aims to address the impediments that remain for Ghana (and its neighbouring countries) applying the Ecosystem Approach (EA) to wetland management and the delivery of the Convention on Biodiversity (CBD). Priority needs have been identified as taxonomic capacity building, a contemporary assessment of the status of aquatic biodiversity in Ghana, the development of practical management tools for rivers and increased engagement of stakeholders in decision making together with an enhanced environmental awareness throughout Ghanaian society. These will be addressed in this project by regional and local staff training, reporting on the current status of aquatic communities, the production of educational and taxonomic resources for a range of users, the development of a set of nested indicators of ecosystem health adapted for use at various levels, and the production of a policy document outlining the means of applying the EA in the management of Ghana's rivers.*

### 3. Project Purpose and Outputs

*The project will deliver its wider aims partially through implementation of a practical project of assessment of the current status of aquatic biodiversity in a selection of Ghanaian rivers whilst training project participants in the skills needed to complete the investigation. Thus the needs of the investigation provide the framework for training. Project personnel will then provide the resource to addressing the building of taxonomic capacity throughout the West African region through a programme of training offered to neighbouring countries. Together with the development of practical management tools for rivers, the publishing of taxonomic and educational materials and the increased engagement of stakeholders in decision making brought about during the assessment project, the team will try to assist the improvement of environmental awareness throughout the relevant sections of Ghanaian society.*

*The start of the project was delayed for a number of reasons explained below entailing some internal re-organisation. Having got the initial training programme back on track and the fieldwork underway with only approximately a six month delay, at the point of writing this report, the main elements of the original plan remain in place. However, some proposed changes to the operational plan for 2006-7 will be discussed with the Darwin Secretariat after this report has been submitted.*

### 4. Progress

*The project was first given approval in April 2005 but as Professor Maltby was in the process of changing institutions, and we had an unexpected departure of an individual (to take up a full-time PhD place) employed to contribute a major part of the organisational input of the University of Liverpool, the start of the project was delayed and the objectives of the first working visit to Ghana were altered. Dr R T Leah (RTL) visited from 31<sup>st</sup> July to 14<sup>th</sup> August when the project plan, aims and objectives were reviewed and rescheduled with most members of the Ghanaian project teams taking part in the discussions. This was useful in aligning the objectives of the different organisations involved and adjusting the intended programme of training to more closely match the local needs. Most intended project sampling sites were visited and the practical difficulties of the intended sampling programme were discussed and solutions developed. One major outcome of these discussions was that there was much more local expertise in invertebrate taxonomy available within the Ghanaian partner teams than was expected with senior staff from CSIR and the Zoology Department of the University of Ghana being able to provide many years of experience gained from programmes of monitoring associated with the Simulium control programmes of the Volta Basin Research Programme. However, it was concluded that more UK based input in training on the Ecosystem Approach was needed together with assistance on the development of more applied tools for biodiversity and water management.*

*Study sites and access permissions were not finalised until after the visits and discussions in August 2005. These have now been GPS referenced when they were visited for preliminary sampling and will be displayed on the project website.*

*Information provided by the CAW Team on the work completed in preparation for the main study:*

*“The initial studies have been focused on the Akyem Abuakwa traditional area (Okyeman), which has a total population of about 2 million representing 10% of Ghana’s population. The three rivers Densu, Birim and Ayensu provide water for a*

large part of the population. The people of the area are predominantly farmers and educational level is about 4%.

Two main field visits have been made to the area as well as the reconnaissance. The first visit was towards the end of the rainy season (August, 2005) and the other the supposed dry season (December, 2005).

The rivers were sampled at different sites for physicochemical parameters and macroinvertebrates. Water samples were also taken to the Water Research Institute for further analysis. Two sampling methods used were the net sweeps and core sampling. To have fair representative samples some of the sites were sampled at both the upstream and downstream of human activity to assess the impact of various landuse activities.

The physico-chemistry of the three basins was within normal ranges but the three rivers had different conductivity values, which could easily be distinguished. A positive correlation was observed between Shannon diversity and species richness. The results show that the three rivers support a low diversity of macro invertebrates as the total of 435 organisms were collected from all the sites sampled with three of them having no fauna at all. The predominant organisms found were Mollusc, Crustaceans and Chironomids.”

The training workshop for six project staff originally planned for June 2005 was postponed until January 2006 but was then expanded to include a much larger proportion of the project staff (20 participants in total). This was partly achieved because of a change of emphasis from taxonomic training to more methodological training on applying the Ecosystem Approach to the assessment and management of aquatic systems as this has wider applicability to the group as a whole.

The seasonal sampling to cover a period of a year should have started in June 2005 but the co-ordinated programme of sampling did not start until January 2006. However, the January visit of UK experts was preceded by trial sampling of various sites utilising a variety of methods to produce initial results for discussion during the January visit. This was used to inform the planning of the annual programme that is running through 2006.

Materials for the Training workshop were prepared in Liverpool through late 2005.

Identification of the invertebrates collected was due to start in July 2005 but could not start until after some trial sampling was undertaken during late 2005 (see above). The programme of identification was well underway by January 2006 and the Ghanaian team demonstrated their skills during the sampling included in the January 2006 training workshop.

The initial logframe showed the design of the prototype tool-kit for the assessment of ecosystem health starting during December 2005. In fact, discussions on the initial design of the tool-kit were included in the Jan 2006 workshop and with everyone present working in small groups, very significant progress was made.(see the Workshop report attached as Appendix 2, pp 18-23).

Data analysis was scheduled to start in March 2006 on completion of most of the field sampling so could not start because of the delayed sampling programme. However discussion of sampling methods and linked, appropriate methods of data analysis were included together in the January 2006 workshop in anticipation of the work which will be completed later this year.

The project is based on training associated with a programme of field sampling and associated laboratory investigations. These provide a practical focus to the more theoretical aspects. Before the start of the collaboration, it was difficult to design a field sampling programme that was both practicable and affordable but would still provide the necessary

information. The difficulties were observed in the field and discussed during the August 2005 visit, preliminary sampling was carried out by the Ghanaian team during late 2005 and the results reported to the January 2006 workshop. The revised field sampling programme was finalised during the workshop discussions and is now being implemented.

The initial Training Workshop was planned to be offered to only 6 staff from the collaborating organisations. Through the encouragement of Prof Chris Gordon of CAW participation was offered to a much greater number of people than originally planned with eventually, a total of 20 participants attending for the week of training – see attached report App 2

The application of the 'Ecosystem Approach' to delivering the Convention on Biodiversity involves understanding a number of difficult, fairly novel concepts. The first part of the January 2006 Workshop involved the training of 20 collaborators on what is involved in the use of the Ecosystem Approach. These collaborators included a high number of staff experienced in environmental sampling and wildlife monitoring using more traditional approaches so that their practical experience was harnessed in small group discussion of how the Ecosystem Approach could actually be applied in the circumstances of Ghana. This included the use of a prototype questionnaire to be developed as part of the 'Toolkit'. This was used as the starting point for the Toolkit questionnaire for stakeholders (see Appendix3) which was developed after the UK team returned home and which is now being field tested.

The January workshop was rounded off with some training of 20 collaborators on the Convention on Biodiversity and its relevance to the project.

The major difficulties this year were in getting the project underway because of logistical and staffing difficulties in the UK. These were overcome by adjusting the start of the work in Ghana and delaying various elements of the project.

The design of the project has not been altered (apart from timing) this year as it is too early to assess. However, it will be reviewed during 2006-7.

### **Workplan for 2006 -7**

The modified Implementation Plan is included below to put the planned work into context

(Original items are normal text, changes and planned work are in italics)

<b>Date</b>	<b>Financial year</b>	<b>Key milestones</b>
May-05	Apr-Mar 2005/6	Start of project
		Project staff to be trained is selected. UK experts that will run the training are finalised. The equipment and facilities are prepared. Press releases in UK and Ghana.
<i>Aug-05</i>		<i>Delayed until July-August 2005</i>
Jun-05	Apr-Mar 2005/6	1 <sup>st</sup> training workshop for six project staff on aquatic ecology, taxonomy and assessment of freshwater ecosystems and the application of EA by UK experts.
<i>Jan-06</i>		<i>Held January 2006</i>
Jun-05	Apr-Mar 2005/6	Study sites confirmed and access permission finalised. Sampling methods to be used decided. The sites will be GPS referenced and displayed on the project website. Field sampling of macroinvertebrates, macrophytes, fish and physicochemical parameters begins. The sampling will be seasonal (i.e. 1 <sup>st</sup> in June '05, 2 <sup>nd</sup> in Sep '05, 3 <sup>rd</sup> in Dec '05 and 4 <sup>th</sup> in March '06).

<i>Dec-06</i>	<i>through Apr-Mar 2006/7</i>	<i>Converted to Dates through 2006</i>
Jul-05	Apr-Mar 2005/6	Specimen identification follows the sampling (i.e. 1 <sup>st</sup> in July '05, 2 <sup>nd</sup> in Oct '05, 3 <sup>rd</sup> in Jan '06 and 4 <sup>th</sup> in Apr '06)
<i>Jan-07</i>	<i>through Apr-Mar 2006/7</i>	<i>Converted to Dates through 2006</i>
Dec-05	Apr-Mar 2005/6	The design of the prototype tool-kit for the assessment of the freshwater ecosystem health that will assist Ghana in the delivery of the EA begins. The selected environmental indicators will be associated to the principles of the EA in order to provide an assessment method that will facilitate biodiversity conservation and promote sustainable livelihoods for the local communities.
<i>Dec-06</i>	<i>Apr-Mar 2006/7</i>	<i>Discussed in January 2006, developed during Spring 2006, field testing started April 2006</i>
Mar-06	Apr-Mar 2005/6	Data analysis following the completion of the field sampling using univariate and multivariate methods of analysis. The results will be fed in the tool-kit development process and they will also lead to peer-reviewed publications on the current status of aquatic communities in Ghana.
<i>Mar-07</i>	<i>Apr-Mar 2006/7</i>	<i>Initial discussions held Jan 2006 – will be implemented during 2006 to be completed by March 2007</i>
Aug-06	Apr-Mar 2006/7	Second training workshop by UK experts for 20 project staff trained for the testing of the prototype tool-kit.
<i>Jan-07</i>	<i>Apr-Mar 2006/7</i>	<i>To be held Jan 2007</i>
Aug-06	Apr-Mar 2006/7	First training workshop for 20 regional scientists from 6 W. African countries on aquatic ecology and the application of EA. Training by local project staff
<i>Mar-07</i>	<i>Apr-Mar 2006/7</i>	<i>To be held by March 2007</i>
Sep-06	Apr-Mar 2006/7	Training workshop for 20 stakeholders for the testing of the prototype tool-kit. Training by local project staff.
<i>Mid 2007</i>	<i>Apr-Mar 2006/7</i>	<i>To be held during 2007</i>
Aug-07	Apr-Mar 2007/8	Testing of the prototype tool-kit by the selected and trained stakeholders
<i>stet</i>	<i>Apr-Mar 2007/8</i>	
Aug-07	Apr-Mar 2007/8	Completion of the stakeholders testing of the prototype tool-kit. Results and comments will feedback to the scientific team that developed the tool-kit
<i>stet</i>	<i>Apr-Mar 2007/8</i>	
Aug-07	Apr-Mar 2007/8	The final tool-kit is developed using the results of the stakeholders testing
<i>stet</i>	<i>Apr-Mar 2007/8</i>	

Oct-07	Apr-Mar 2007/8	Second training workshop for 20 regional scientists from 6 W. African countries on aquatic ecology and the application of EA. Training by local project staff
<i>stet</i>	<i>Apr-Mar 2007/8</i>	
Oct-07	Apr-Mar 2007/8	Educational and taxonomic resources are being developed by integrating the scientific knowledge of the UK experts with the local knowledge
<i>stet</i>	<i>Apr-Mar 2007/8</i>	
03/2008	Apr-Mar 2007/8	A policy document is produced outlining the application of the EA in the management of Ghana's rivers
<i>stet</i>	<i>Apr-Mar 2007/8</i>	
	Apr-Mar 2007/8	Training workshop for 20 stakeholders for the dissemination of the final tool-kit and the educational and taxonomic material. Training by UK experts and local project staff.

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

*N/A*

## 6. Partnerships

*The project has strengthened collaboration and networks during the year and we look forward to translating these into strong MOUs as the basis of further collaboration.*

*Contact has been made with a British Council funded project being run jointly by University of Newcastle and University of Ghana on the application of the Ecosystem approach to coastal ecosystems, experiences have been exchanged and a mutually reinforcing network established.*

*Discussions have started on possible collaborative work with the University of Kumasi, which is also involved in investigations of Ghanaian rivers. They were visited during 2005 by RTL and a proposal to investigate improved methods for sampling rivers for pollution from mining activity is being developed.*

*Internally within the University of Liverpool, 'technology transfer' and exchange of experiences is planned with the Darwin Project (Ref No 162/12/034 ): South East Asian Wetlands Restoration Initiative during the coming year*

## 7. Impact and Sustainability

*Raising the profile of the project within Ghana will be addressed when the training workshops are being held for Regional Scientists brought in from neighbouring countries during 2006-7. This will be a significant achievement for the Ghanaian partners and should provide a focus to generate press interest. Appropriate UK press releases will be issued simultaneously.*

*Now that the website is available and being further developed, it will be linked in with the websites of other Ghanaian organisations involved in biodiversity and conservation, education and tourism. This will be a relatively low cost means of generating interest whilst providing information which can be maintained at low cost into the future.*

*The Ghanaian Wildlife Society is a partner in the project. It is a membership organisation and will promote the work amongst its members. By its constitution, it is involved in conserving biodiversity and as part of the project, its staff are being trained and will continue involvement in this type of work after the project finishes. The involvement with this type of biodiversity assessment is novel for the society. The Society together with the University infrastructure provide the basis for continuity beyond the life of the project.*

## **8. Outputs, Outcomes and Dissemination**

*It was originally intended to issue a series of press releases in Ghana and the UK to announce the start of the project. However, after discussion with our Ghanaian partners, it was considered more effective to link the arrival of a multi-national team of scientists and environmental workers later this year to be trained in Ghana to ensure stronger press interest in the project. It will emphasise the leading role that Ghana is beginning to play in Regional efforts to conserve West African biodiversity. The press activity in Ghana will be reflected with announcements in the UK.*

*The expected training workshop was eventually delivered 6 months later than originally planned but considerably more people were trained than originally expected (6 planned, 20 achieved).*

*As they are partly dependent on inputs from the project itself, none of the final versions of the planned training materials (other than initial lecture notes and slide sets) have yet been finished but their production is underway.*

*The programme of one year of field sampling was late in starting but is now underway. It will be completed by the end of 2006. Some initial sampling was used to inform the discussions during the January 2006 workshop.*

*A range of members of the University of Ghana and associated institutes were invited to the final day of the January workshop.*

*Part of the project involves a questionnaire survey of villagers (stakeholders) in the study area. The questionnaire has been developed through discussion of team members and is now being field tested. As a prelude to the surveys, the project is explained to local village chiefs and others attending the meeting.*

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

<b>Code No.</b>	<b>Description</b>	<b>Year 1 Total (orig) actual</b>	<b>Year 2 Total (orig) planned</b>	<b>Year 3 Total</b>	<b>Year 4 Total</b>	<b>TOTAL</b>
6A	Number of people to receive other forms of education/training	(6) 20	(80) 60			
6B	Number of training weeks to be provided	(1) 1	(4) 4			
7	Number of (ie. Different types – not volume – of material produced) training materials to be produced by host country	(6) 3	(60)* <sup>1</sup> 10			
8	Number of weeks to be spent by UK project staff on project work in host country	(7) 4	(10) 13			

10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	(6) <sup>#</sup> 0	(20) <sup>*2</sup> 10			
11A	Number of papers to be published in peer reviewed journals	(2) <sup>#</sup> 0	(0) 2			
12A	Number of computer databases to be established	0	(1) 1			
13A	Number of species reference collections to be established and handed over to the host country	0	(2) 2			
15A	Number of national press releases in host country	(1) <sup>#</sup> 0	(0) 1			
15B	Number of local press releases in host country	(1) <sup>#</sup> 0	(0) 1			
15C	Number of national press releases in UK	(1) <sup>#</sup> 0	(0) 1			
15D	Number of local press releases in UK	(1) <sup>#</sup> 0	(0) 1			

## Notes

<sup>#</sup> Targets transferred to year 2

<sup>\*1</sup> Outputs will be combined from the original sheets originally envisaged to more user friendly composite booklets

<sup>\*2</sup> Outputs from year 1 have been transferred and the overall target reduced to produce more substantive booklets

Table 2: Publications

Type *	Detail	Publishers	Available from	Cost £
(e.g. journals, manual, CDs)	(title, author, year)	(name, city)	(e.g. contact address, website)	
Workshop * Report	Toolkit for the management of Ghana's Riverine Biodiversity Centre for African Wetlands January 2006	University of Accra	Prof C Gordon Centre for African Wetlands, Legon, Accra, Ghana (will be added to project website during next update)	free

## 9. Project Expenditure

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

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## 10. Monitoring, Evaluation and Lessons

*The project is still in its initial phases with comparatively few outputs that can be monitored. The relevance and delivery of the January 2006 workshop was monitored by questionnaire and received a favourable response from participants. Evaluation of 2006-2007 activities will be more complex and indicators to monitor these will be developed with partners during the coming year.*

*One lesson from this year's activity is that there needs to be more 'communal interaction' over the work that is progressing – individual email and telephone conversation between senior members of the team is of limited usefulness. This has been addressed by the implementation of a group electronic discussion board ([Darwin-ghana@liverpool.ac.uk](mailto:Darwin-ghana@liverpool.ac.uk)) which will be used in combination with an improved website to facilitate discussion at a distance during 2006-7.*

## 11. 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

*As this project is still in its initial phase, there are no outstanding achievements to report.*

## 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><b>Goal:</b> 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 the benefits arising out of the utilisation of genetic resources</li> </ul>			
<p><b>Purpose</b> <i>The sustainable management of Ghana's riverine wetlands in accordance with the principles of the Ecosystem Approach</i></p>	<p><i>Improved quality of riverine wetlands. Enhanced taxonomic capacity in Ghana and other W African countries. Integration of freshwater management into CBD implementation.</i></p>	<p><i>First Training workshop and field visits achieved and Report produced (See appendix 1)</i></p>	
<p><b>Outputs</b></p>			
<p><i>1. Training workshops held for staff.</i></p>	<p><i>Six project staff trained in year 1. Twenty project staff trained in year 2. Twenty regional scientists trained in each of years 2 and 3.</i></p>	<p><i>A total of 16 project staff and 4 associated students trained in year 1 (see list in workshop report (appendix 1))</i></p>	
<p><i>2. Range of educational and taxonomic resources produced.</i></p>	<p><i>Material will be reviewed by expert group, partners and others (e.g. Ghana Education Service). Distribution through existing networks (e.g. GWS).</i></p>	<p><i>Initial discussions on format and content were held during the January 2006 visit, email contact established and preparation of resources has started</i></p>	<p><i>The design, content and review process of these resources will be further developed during 2006 and the first group delivered</i></p>
<p><i>3. A nested set of indicators of ecosystem health produced.</i></p>	<p><i>Stakeholders trained in use of tools. Tools field tested by stakeholders.</i></p>	<p><i>The structure of the tools was presented and discussed at the first workshop. Field testing of the initial iteration of tools has started.</i></p>	<p><i>Further input of expertise and discussion will be needed after field testing before implementing the main phase.</i></p>

4. A report on current status of aquatic communities in Ghana	Manual peer reviewed. Publication by CAW agreed	The programme of fieldwork for 2006 was discussed, modified and agreed at the January 2006 workshop. The sampling and subsequent identification of biota and data analysis is now progressing well.	Data analysis will be reviewed for adequacy as 2006 progresses
5. Policy document on the application of the EA in the management of Ghana's rivers	Document peer reviewed. Publication by CAW agreed. Disseminated to Ghana's CBD focal point.	It is not appropriate to start this element of the project at this stage.	

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.

## LOGICAL FRAMEWORK

<b>Project summary</b>	<b>Measurable Indicators</b>	<b>Means of verification</b>	<b>Important Assumptions</b>
<p><b>Goal:</b></p> <p><b>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</b></p> <ul style="list-style-type: none"> <li><b>the conservation of biological diversity,</b></li> <li><b>the sustainable use of its components, and</b></li> <li><b>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</b></li> </ul>			
<p><b>Purpose</b></p> <p>The sustainable management of Ghana's riverine wetlands in accordance with the principles of the Ecosystem Approach</p>	<p>Improved quality of riverine wetlands. Enhanced taxonomic capacity in Ghana and other W African countries. Integration of freshwater management into CBD implementation.</p>	<p>Ghana's reporting to CBD. Institutional reports. Reports of training courses. Uptake of taxonomic materials.</p>	<p>Ghana maintains engagement with CBD. Trained staff remains in post.</p>
<p><b>Outputs</b></p> <p>1. Training workshops held for staff.</p>	<p>Six project staff trained in year 1. Twenty project staff trained in year 2. Twenty regional scientists trained in each of years 2 and 3.</p>	<p>Attendance records. Results of assessments. Course reports. CAW's records of correspondence and resource use.</p>	<p>CAW's existing regional networks continue. Sufficient participants for regional workshop recruited (travel expenses will be paid by CAW)</p>
<p>2. Range of educational and taxonomic resources produced.</p>	<p>Material will be reviewed by expert group, partners and others (e.g. Ghana Education Service). Distribution through existing networks (e.g. GWS).</p>	<p>Material published and distributed to key stakeholders and partners. Copies sent to Darwin Initiative.</p>	<p>Partners remain committed to production of outputs. Stakeholders willing to receive resources.</p>
<p>3. A nested set of indicators of ecosystem health produced.</p>	<p>Stakeholders trained in use of tools. Tools field tested by stakeholders.</p>	<p>Attendance records for training courses. Results of field testing distributed to national/regional stakeholders/scientists/CBD focal point</p>	<p>Sufficient stakeholders recruited for testing and dissemination.</p>
<p>4. A report on current status of aquatic communities in</p>	<p>Manual peer reviewed. Publication by CAW agreed</p>	<p>Published reviews. Copies sent to Darwin Initiative.</p>	<p>N/A</p>

Ghana			
5. Policy document on the application of the EA in the management of Ghana's rivers	Document peer reviewed. Publication by CAW agreed. Disseminated to Ghana's CBD focal point.	Published reviews. Copies sent to Darwin Initiative. Minutes of meeting with focal point sent to Darwin Initiative.	Focal point available for meeting.
<b>Activities</b>  <i>Training of project staff</i>          <i>Training of regional scientists</i>          <i>Training of stakeholders</i>          <i>Development of tool-kit</i>  <i>Testing of prototype tool-kit</i>  <i>Production of educational and taxonomic resources</i>  <i>Production of report</i>  <i>Production of policy document</i>		<b>Activity Milestones (Summary of Project Implementation Timetable)</b>  <i>Workshop 1 (month 2) for 6 staff covering EA, macroinvertebrate, macrophyte and fish sampling and identification, physico-chemical techniques. Workshop 2 (month 16) for 20 staff preparing project staff for stakeholder training (20 staff)</i>  <i>Workshops 1 &amp; 2 (months 16 &amp; 28) for 20 regional scientists from 6 countries</i>  <i>Workshop 1 (month 16) on use of tool-kit. Workshop 2 (month 36) for dissemination.</i>  <i>Prototype tool-kit (months 8-16). Final Tool-kit (months 8-33)</i>  <i>Testing by stakeholders (months 17-27)</i>  <i>Production of materials for community groups, schools and water managers, including web-based keys, picture keys, school work sheets, posters and leaflets (months 30-36)</i>  <i>Report accepted for publication by CAW (month 36)</i>  <i>Document peer reviewed and CAW acceptance for publication</i>  <i>(month 36)</i>	