

Darwin Initiative Annual Report

Darwin Project Information

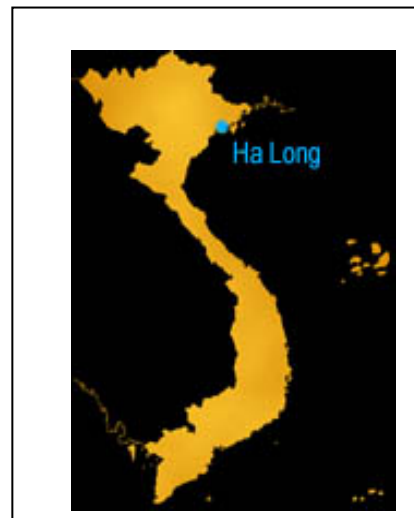
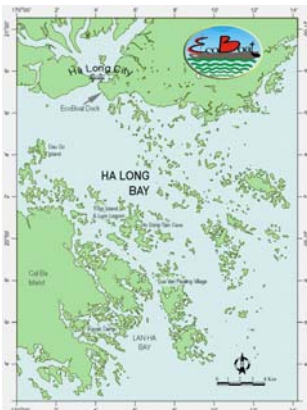
Project Ref Number	14-038
Project Title	Ha Long Bay Environmental Awareness Programme
Country	Vietnam
UK Contract Holder Institution	Fauna and Flora International
UK Partner Institution	University of East Anglia
Host country Partner Institution	Ha Long Bay Management Department
Darwin Grant Value	£234,000
Start/End dates of Project	1 August 2005 to 31 July 2008
Reporting period	1 April 2006 to 31 March 2007 (Annual Report #2)
Project Leader Name	David Brown
Project website	www.ecoboat.org
Author(s), date	David Brown, April 24, 2007

1. Project Background

Like nearly all East Asian estuaries, the waters of the Ha Long Bay World Heritage Site (WHS) are troubled by frenetic development on adjacent coasts, short-sighted resource exploitation policies, and spotty policing of environmental protection regulations.

In the past decade, water quality in the Bay has deteriorated considerably. Dredging, the daily rounds of hundreds of tourist boats, and runoff from ill-designed landfill projects have introduced huge volumes of silt at the same time that more than two-thirds of the mangrove forest area in the WHS and its buffer zone has been destroyed. The Bay's shallow waters have become turbid, with consequent high mortality of reef ecosystems. Inadequate management

of sewage and industrial wastes from onshore sources is evident near the coast. Few large fish are found anymore in Ha Long Bay except in aquaculture pens. However, the diverse fauna and flora of the Bay's nearly



2000 steep limestone islands are well protected by their difficulty of access and by strong controls on human intrusions.

FFI's Ha Long Bay Environmental Awareness Programme builds on a capacity-building relationship with the Ha Long Bay Management Department that began in 2002. We and the Management Department believe that if the people, opinion leaders and decision makers of the Quang Ninh province communities on the edges of the Bay are better informed, they will give strong support to policies aimed at curbing pollution and preserving the magical beauty and remarkable biodiversity of the World Heritage Site.

2. Project Partnerships

FFI has sustained a mutually supportive relationship with the **Ha Long Bay Management Department** (HLBMD). From its beginnings as an agency devoted mainly to delivering tourism services, the Management Department has achieved over the past decade an increasingly sophisticated understanding of its stewardship role. It has emerged under its current Director as an effective advocate of tougher provincial controls on development and stronger policing of pollution. The Management Department remains underfunded and in need of technical and training assistance – a need that FFI, UNESCO and IUCN seek to address in other initiatives.

As with all bureaucratic relationships in Vietnam, more of our time than seems reasonable is consumed by administrative procedures deemed necessary by our counterpart agency. On the brighter side, the Management Department has been generous in its support in kind to the EcoBoat Project, providing the floating classroom that is the programme's most visible activity. In our calendar year 2007 joint work plan, the Director has approved secondment of two more staff to the programme for on-the-job training (for a total of four seconded staff), and the development of two new activities – a mangrove forest remediation project and the construction of an environmentally friendly "Green Path" that will afford student groups better access to the highly adapted flora of the WHS.

The HLBMD and FFI are planning the programme's strategic evolution from FFI project management into a sustainable, community-based organization capable of giving strong support to the Management Department's work. It should be understood that this is a radical idea; true civil society institutions are rare in Vietnam and often viewed with suspicion by the political leadership. Progress must, therefore, be pursued with care in order to retain the support of the HLBMD management. We aim to agree on an organizational development plan that can be presented to the Quang Ninh Province People's Committee with the strongly positive recommendation of the Director of the HLBMD.

Our cooperation with the Quang Ninh Province **Department of Education** has deepened over the past year, during which groups of students from 17 Quang Ninh secondary schools participated in 20 one and two-day trips aboard the EcoBoat – 486 teenagers altogether. The Department of Education has encouraged schools to send their "best and brightest," young people chosen from the entire school on the basis of academic achievement and leadership skills. In March 2007, the Department of Education seconded a staff member to work part-time with FFI, "advancing" and following-up on the school trips. We expect this will make possible a sharper focus on EcoBoat learning activities that are tailored to support specific school objectives.

The Quang Ninh Province **Youth Union** also sent a substantial number of its members to join EcoBoat trips – 378 altogether, on 11 EcoVoyages. The Youth Union's mandate is character-building extra-curricular activities; our focus with these groups is increasingly on service activities such as the recently launched mangrove forest remediation project and outings for the children of Ha Long Bay's floating fishers' villages.

The provincial **Department of Forestry** is our principal support for the mangrove project. It has provided expert technical assistance and 48,000 seedlings at cost. The Forestry Service will also play an important role in the Green Path project. (Note: these activities were not foreseen by the Darwin Initiative grant; FFI is seeking financial support from other prospective donors.)

We have in addition over the past year developed a network of important relationships with **Vietnamese academic institutes**, in particular the Institute for Marine Environment and Resources in nearby Haiphong, the Hanoi Education University, the Institute for Strategic Development, and the Research Institute for Marine Fisheries.

The programme has filled the participatory research and monitoring position foreseen in the project grant. A highly qualified PhD candidate from the **University of East Anglia** will join us in July to work for 13 months as an EcoBoat staff member, researching the impacts of human activities on the Bay, and evaluating the programme's impact on community awareness.

Other Collaborations: As awareness of FFI's work at Ha Long Bay has grown within the NGO community, we have been invited to participate in workshops and reviews concerning the management of marine protected areas in Vietnam. We have joined these meetings when the benefits of collaboration to the project could be substantial. We have also been sought out for our local expertise (FFI is the only NGO with a project office in Quang Ninh). Late in the project year, we were exploring collaboration with the Hanoi offices of UNESCO and IUCN. Both are supporting development of strategic planning capacity within the Management Department. IUCN, moreover, is launching an initiative aimed at fostering policy, planning and management cooperation encompassing two provinces and five marine protected areas including the WHS.

3. Project progress

A year ago, the Ha Long Bay Environmental Awareness Programme was preparing to launch operation of its principal activity, the EcoBoat floating classroom. We had established a mutually supportive relationship with the Ha Long Bay Management Department, had the bare bones of a curriculum, and a willing but untested staff.

Now, twenty months into a three year project, the EcoBoat has achieved substantial local recognition for its contributions to improved understanding of development pressures on the natural environment of Ha Long Bay. Project staff have made huge strides in professionalism, functional expertise, doctrine, local sophistication and confidence that we are on course to successful completion of the programme and its handover to a well-founded local organization.

During the second Project Year, our floating classroom, the EcoBoat, carried 37 groups of teenagers onto Ha Long Bay for transformative encounters with the natural environment. Our EcoBoat curriculum is 70 percent complete. There is strong local demand for project services. We have found, however, that revenues from paying customers, i.e., international school groups, will not be sufficient to sustain the project, and we must develop a broader set of funding sources to ensure sustainability of the programme.

We believe that a truly "independent private voluntary organization" cannot be established in the time frame of the project under the current Vietnamese political and administrative climate and so will be exploring alternative structures. Our immediate, pragmatic objective is the development of a local organization linked to the Ha Long Bay Management Department, yet independent with respect to awareness education programme management and financial management, able to attract volunteer members and mobilize community resources.

3.1 Progress in carrying out project activities

We are on track. The EcoBoat Project runs smoothly and has brought the Environmental Awareness Programme considerable local acclaim. The curriculum-building effort has made huge strides since the summer of 2006. As opportunities arise, we are adding more activities (e.g., a mangrove remediation project and a "Green Path" project) and raising our profile through outreach to the Vietnamese media. A "User's Guide to Ha Long Bay [Lessons from the EcoBoat Project]" will be published late in 2007.

Our only disappointment is that demand from international schools for EcoBoat trips has been lower than forecast by the project's business plan. This development requires us to focus effort also on more conventional types of fund-raising.

We have reached agreement in principle with the Ha Long Bay Management Department on a plan for evolution from an FFI-managed programme centered on the EcoBoat Project to a voluntary, community-based environmental protection organization (hereafter, *the VO*) that will pursue a broader range of activities and inter alia mobilize resources needed to sustain the EcoBoat's activities.

3.2 Progress towards Project Outputs

3.2.1 -- Development of Curriculum and Research Programme

Recruitment of a dynamic Vietnamese PhD as Education Director in 08/06 brought leadership, vision and coherence to the curriculum development process. The EcoBoat Team now has a broad menu of lessons keyed to the features of Ha Long Bay (see Annex 3). We are able to tailor cruises to the learning objectives of client schools and other groups, teaching in both English and Vietnamese, while maintaining a consistent and powerful environmental protection message.

EcoBoat cruises emphasise hands-on activities and direct observation. Our lessons have been vetted by experts from Vietnamese research institutes and are scientifically sound. We are documenting our teaching approach and methods, in particular the summarizing activities – role play sessions that give youth a sophisticated grasp of the human activities that impact the bay and encourage them to work out solutions to environmental protection dilemmas.

Throughout the winter, project staff and volunteers worked hard to formalize the EcoBoat lessons as “curriculum” that, after review and approval by experts, is usable throughout the Quang Ninh secondary school system. This work is now 70% complete. Material for eight lessons (of 15 projected) was delivered to the Management Department for its review and ratification in March 2007. This process will continue as additional lessons near completion. Much of the material will be published as a reference manual – a “*User’s Guide to Ha Long Bay.*”

Systematic collection of data on Ha Long Bay water quality began in the second half of PY2 as an element of EcoBoat school trips. We include this activity primarily to teach youth the techniques of sample collection and analysis.

We continue to doubt that a “state of the bay” report should be published under FFI’s imprimatur. It would be perceived by many Vietnamese as an unwarranted intervention in internal affairs and would be disruptive of collaborative relationships we have labored to build here. We continue to provide information and analysis to the HLBMD on the state of the bay.

3.2.2 – EcoBoat Operations

The EcoBoat is fully operational, delivering a robust environmental education program to international school groups and to student and youth groups from the communities bordering Ha Long Bay. We have established a high standard of safety and educational quality, and have sustained a strong environmental protection focus. EcoVoyagers get direct experience of the Bay’s natural setting – its caves, karst hills, dying reefs, much reduced mangrove habitats, and turbid waters – and of its peoples – the fishermen of Cua Van floating village and the farmers of Viet Hai. They are encouraged to observe carefully, to analyze problems holistically, and to consider solutions that address the key concerns of all stakeholders.

Current emphasis is on training additional Vietnamese staff from the project area (some seconded from the Management Department and some locally recruited) to deliver the range of EcoBoat lessons. Workshops introduce Vietnamese school teachers to our interactive and experiential methods.

We have learned that the business plan developed for the EcoBoat Project is overly optimistic. Competition among regional providers of international school trips is intense, and though our prices are competitive, the cost and inconvenience of travel to northeast Vietnam is a deterrent. We have made determined efforts to market EcoBoat trips. Project staff travelled throughout the region to teachers’ conventions and meetings at international schools – a total of 34 staff/days on the road in eight countries. We have used direct mail and e-mail to spread the word, prepared promotional materials, developed a website (www.ecoboat.com), and sponsored a “teachers’ weekend.”

Our commitment to hands-on education has been popular with teachers and school administrators, but when the students were allowed to decide trip destinations, they tended to opt for intellectually less-challenging offerings. Preliminary bookings for eighteen boat/days (five different schools) did not turn into EcoVoyages. Thus, we recorded only seventeen boat/days with international clients in Project Year 2, and the pattern seems destined to repeat in Project Year 3. We have concluded that however intensively we market the EcoBoat as an experiential environmental education trip, revenues from international clients will not provide more than 50% of the funds needed to sustain the present programme after its handover to the VO.

There is, by contrast, no discernable limit to the number of Vietnamese school and youth groups eager to participate in EcoBoat trips – trips we offer free to Quang Ninh schools and at our variable cost of £200 per day to Vietnamese groups from other provinces. Had we the staff and financial resources, we could triple our frequency of trips for these groups. (Thirty-six one-day trips are currently scheduled through November 2007.)

Working with the international school groups has positive consequences. It requires the EcoBoat Project team to meet higher expectations and exposes our Vietnamese colleagues to a global perspective and to Western teaching methods. However, except as revenues from such trips contribute to the sustainability of the programme, they are not the programme’s *raison d’etre*. The need to develop teaching materials and deliver lessons in English as well as Vietnamese has been a major burden on the programme.

This experience has prompted considerable thought by the project team. The premise of FFI’s effort to “establish a financially sustainable environmental education program structured as a public/private

partnership focusing on the Ha Long Bay area” is that Ha Long Bay is worth preserving as a bio-diverse and magically beautiful landscape, and that it is the efforts of Vietnamese – in particular the people of Quang Ninh province – that will decide that outcome. Thus it is correct to concentrate our efforts on raising the consciousness of bright young Vietnamese and of local opinion leaders and decision-makers about mitigation of negative human impacts on Ha Long Bay. Through the process of establishing a locally-rooted VO, we prompt the residents of Quang Ninh to think systematically about controlling pollution and to find ways of bringing their concern to bear in support of appropriate policies vis-à-vis Ha Long Bay and other marine protected areas. The international dimension of the present programme is not directly relevant to these outcomes and in fact is a burden except insofar as it brings in operating revenues.

We will continue offering international school trips but market them less actively, aiming only to match the 2006-07 level of trips in 2007-2008. An expat volunteer position has become redundant and will not be filled from July 2007 onwards. To ensure the resources necessary to support the the EcoBoat Project and community-based VO, we are mounting a concerted effort to develop other sources of income. These include proposals to donors for grant support to new initiatives within the current programme framework (e.g., the Mangrove remediation project, the Green Path project and capacity building assistance to the Management Department), outreach to potential corporate sponsors in Quang Ninh province and elsewhere, and consideration of establishing modest cost-sharing fees for all Vietnamese clients of the EcoBoat.

3.2.3 -- Preparation for an Independent VO to Carry on the Programme

At the end of Project Year 2, halfway through the life of the Darwin grant, FFI and the Management Department were planning for the establishment of a citizens’ environmental protection organization. This is a novel concept in Quang Ninh; indeed, in all of Vietnam there are only two environmental organizations that can serve as precedents. Considerable ingenuity has been needed to reconcile essential features of an independent VO with the requirements of the Vietnamese administrative and control framework.

Consideration was given to establishing the organization within the Management Department itself. That scheme has been discarded as administratively awkward and likely to discourage community initiative. The Director of the Management Department is persuaded that a responsibly led and managed citizens’ organization can give important support to his agency’s mission, including advocacy of environmentally-sound policies, while relieving it of direct responsibility for sustaining the EcoBoat Project. An independent VO, moreover, will have substantially greater capacity to mobilize resources and financial support than one that functions as a quasi-autonomous section of a public agency.

It is expected that recruitment of an advisory board – the forerunner of a VO board of directors – will be complete by the summer of 2007. The advisory board’s principal mission will be to prepare for the launching of the citizens’ organization by the summer of 2008. Its work will be supported by the current project staff, in particular those Vietnamese staff who will remain with the project as it morphs into a VO. They will receive formal capacity building training in such functions as programme management, maintaining member relationships, and financial management during the year ahead. They will step up to broader responsibilities. In July and August, a Canadian volunteer of Vietnamese origin will provide on the job training in institutional outreach and fund raising skills.

FFI’s expatriate staff – the programme manager, the EcoBoat project coordinator, and a graduate student researcher who will arrive in July – will increasingly adopt the stance of advisors and mentors in anticipation of the transition from NGO to VO programme.

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
Established codes						
6A, 6B	48 people to receive teaching and awareness raising skills training; 8 training weeks	None	On the job training (OJT) – 4 Vietnamese staff, and 1 EB staff x 3 weeks (Natl. Parks, Thai			

			mangroves, and QN teachers, HLBMD & EB staff workshop – 40 ppl x 2 d			
6A, 6B	8 people to receive financial management training, 2 training weeks	1 person; one training week.	1 person; one training week			
6A, 6B	14 people to receive materials preparation training; 3 training weeks	4 people; one training week	OJT – two HLBMD staff and four project staff, and QN teachers, HLBMD & EB staff workshop – 40 ppl x 1 d			
6A, 6B	18 people to receive marketing skills training; 6 training weeks	None	1 EB staff x 1 week --			
6A, 6B	36 people to receive institutional development skills training; 3 training weeks	None	3 EB staff x 3 days (Magic Eye project, Bangkok)			
6A	All staff to receive safety and first aid training		6 staff x one TW; all staff x one day			
6A, 6B	16 people to receive research and monitoring training; six training weeks	One person; one week	--			
6A, 6B	12 people to receive participatory research training; two training weeks	One person; one week	1 staff x three weeks			
7	Eight training manuals/materials to be produced	None	Eight training manuals completed; seven more under development.			
8	56 weeks to be spent by UK project staff on training, research and project facilitation in Vietnam	Two weeks	Two weeks			

8	100 weeks to be spent by team leader monitoring the project and mentoring partners and host country team members in Vietnam	25 weeks	48 weeks			
9	Research and monitoring programme produced	None	--			
11B	8 reports from the research and monitoring programme to be submitted to peer reviewed publications.	None	--			
12A	Client data base established	Established 03.2006	n/a			
14A	Project inception workshop held for strategic planning of the project with multi-stakeholder input	Three one-day sessions, 12.2005, 02.2006, & 03.2006	n/a			
15A	5 all-Vietnam press releases	None				
15B	6 local press releases	None	Five stories placed			
15C	2 UK press releases	One	One story placed in Interpretation magazine.			
16A	3 State of the Bay reports	None	--			
18A	5 Vietnam TV features	None	Three on local TV; one national			
18B	5 UK TV features	None	--			
19A	3 Vietnam radio features	None	Two			
19B	4 UK radio features	None	--			
20	Assets worth £10,000 handed over to VO at project end	n/a	n/a			

21	Project will result in creation of one new educational organization	n/a	n/a			
22	10 marine research plots for monitoring water quality	None	Xx Sites selected			
23	\$63,000 to be raised for the project in addition to funding from Darwin	\$5000 grant	\$19,800 in project revenues			
New Project-specific measures						
a	EcoBoat Trips Provided for Vietnamese Schools, Youth Groups, etc.	0	32 boat/days 864 youth			
b	EcoBoat Trips Provided for International Schools and Groups. (boat/days)	0	17 boat/days 123 participants			
c	Travel days marketing EcoBoat trips to international clients	2	34 days/8 countries			
d	Formal Programme Management Training		--			
e	Evaluation Workshops	0	One, with 25 teachers who had led groups on EB trips			

3.3 Progress towards the project purpose and outcomes

We have established a highly effective environmental education programme, the EcoBoat Project. It uses the natural setting of the Ha Long Bay World Heritage Site and human impacts on that setting as the material for active-learning lessons on environmental protection. EcoVoyagers – principally teenagers -- learn that environmental issues are complex and that sustainable solutions require reconciliation of many legitimate interests. The Project has high visibility in the towns on the northern edge of the Bay. Vietnamese schools and youth groups are eager to participate – far more than we can yet accommodate.

In close consultation with our counterpart agency, the Ha Long Bay Management Department, we are developing the work plan that will guide the process of transforming this FFI-led program into a community-based, independent voluntary organization that will, *inter alia*, continue the EcoBoat Project.

The programme's Vietnamese staff, including four cadre seconded by the Management Department, are receiving training in necessary management and outreach skills. In May and June, 2007, an advisory board will be recruited; this group of leading citizens will provide strategic guidance and assist in mobilizing community resources.

The financial sustainability of the successor organization remains a question mark. During Project Year 2 it became apparent that projections of a robust calendar of fee-paying international clients were overly optimistic. Programme staff will devote considerable effort in the year ahead to developing additional

sources of financial support, including new grants, corporate relationships and modest participation fees for Vietnamese groups.

3.4 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

Vietnamese coastal areas are richly bio-diverse, none more so than the karst islands and shallow waters of Ha Long Bay. Many marine protected areas have been established, but virtually all are impacted by Vietnam's belated rush toward economic development, again none more than Ha Long Bay. Unless far greater emphasis is put on environmental protection of coastal areas by Vietnamese authorities, the unique values of these sites will be steadily compromised.

FFI's programme in Ha Long Bay aims to mobilize public support for measures that establish a sustainable balance between development on the periphery, which is inevitable and necessary, and preservation of the World Heritage Site's value as a reservoir of biodiversity and an incomparable natural landscape. We are engaged at the right time, a moment when the people of the Ha Long Bay region can begin to look beyond the day-to-day struggle for a decent livelihood. The bay is widely perceived here as an economic resource and a quality of life asset that is worth preserving. Belatedly, provincial authorities and the coal mines are implementing tougher anti-pollution policies.

FFI environmental education activities emphasize the range and severity of human impacts on the WHS and demonstrate that they can be reduced and remediated. This science-based education, delivered mainly through schools and youth groups, is preparing the way for a citizens' organization. At a minimum, the successor organization will take over management of the EcoBoat "floating classroom" Project. We intend that it should also provide support and encouragement to the agency responsible for stewardship of the WHS. We hope that it will advocate prudently for sound environmental protection policies and more vigorous enforcement of regulations.

4. Monitoring, evaluation and lessons

Until now FFI has relied on informal feedback from counterparts, participants in EcoVoyages, and casual contact with journalists, volunteers and ordinary people of the Ha Long City community to judge the correctness of our approach. We are very pleased that beginning in July 2007 the project team will be augmented for a full year by a British PhD candidate who will assess the effectiveness of our approach and the impact of our work within Quang Ninh province.

The chief lesson of this year's work is that we are achieving substantially more impact locally than in our programmes for "international" groups in the East Asia region. Beyond doubt, for the youth of the communities on the fringes of Ha Long Bay, a close, "active learning" encounter with the Bay is a transformative experience.

The message of the EcoBoat Project resonates with many people in Quang Ninh province. They readily perceive that the continued health of Ha Long Bay is of considerable consequence both to their quality of life and the region's prosperity. This is fertile ground for our message that a sharply greater level of environmental protection is necessary and, with diligent coalition-building, possible.

Vietnam remains a highly autocratic polity. Its people are wary of foreigners and unused to working together in democratically organized citizens groups. Not least for these reasons, the sustainability of our work beyond the end of the Darwin grant is far from assured. Building and launching the successor organization is a delicate process, one that will merit particularly careful monitoring and evaluation.

5. Actions taken in response to previous reviews

We responded to the thoughtful and constructive comments of our reviewer in our half-yearly report dated October 27, 2006. The reviewer put considerable emphasis on early establishment of the Voluntary Organization (VO), and we respectfully disagreed. Rereading both reports, we remain persuaded that it was first necessary to establish the EcoBoat Project as a valued feature of the local scene (now done) and then to secure the full understanding and support of the local authorities for the proposed VO before presenting it publicly (this work is underway). There is little precedent in contemporary Vietnam for what we propose – a semi-independent, voluntary citizens movement – and none at all in Quang Ninh.

We are aiming at an almost seamless transition from an FFI-managed programme to a locally-run organization. The Vietnamese staff will remain largely intact, and they will have been trained and filling the principal roles for some time before the actual launching of the VO. We have begun developing a

cadre of volunteers who are assisting on various teaching and curriculum-building activities. The most committed and effective members of the Board of Advisors that we will recruit in the next few months will in due course become the VO's initial Board of Directors. To maximize the likelihood that the VO will be able to maintain a high standard of programme delivery and tap international funding sources, FFI believes one or two expat staff ought to remain engaged in an advisory/expert role for some years after the VO is launched.

6. Sustainability

The EcoBoat Project is known within the NGO conservation community in Vietnam, principally as a result of presentations we have made at workshops convened by IUCN. It is a prominent feature of the local (Quang Ninh province) scene. During 2007, we will invite reporters from the national Vietnamese media to join and observe EcoBoat educational trips.

There has been an upsurge of concern in Quang Ninh as recent deterioration of water quality and the virtual death of reef ecosystems has become generally known and has impacted on Ha Long Bay's attractiveness to tourists. We are very well positioned to inject scientifically sound observations and a broader perspective into the resultant debate on how and how much to revise policies, strengthen regulation, reduce pollution and remediate damage. As the only NGO with a permanent presence in the provincial capital, FFI is also able to support capacity-building initiatives and facilitate contacts between the local authorities and foreign experts.

FFI's is strongly committed to working with our principal counterpart, the Ha Long Bay Management Department, to design and bring into existence a community-based organization (VO) that will be able to continue a robust, high-quality environmental awareness programme. Our challenge to find the least intrusive way of satisfying the "control" needs of the Vietnamese political-administrative system, a form of coordination with the Management Department that preserves for the VO de facto independence in key areas of programme and financial management.

7. Dissemination

Outside Quang Ninh province, FFI's dissemination activities have been of two sorts: briefings to the rest of the NGO community and Vietnamese educators on our experiential approach to environmental education (still rare here) and an intensive marketing effort to trip planners and teachers at international schools in cities from Singapore to Hong Kong. As discussed above, we will continue the marketing effort in lower key, reserving for later a decision as to whether an international dimension of the EcoBoat Project ought to continue as the programme is localized.

Our intensive work on curriculum development will bear plentiful fruit in the course of this year, as "lessons from the EcoBoat" are disseminated through the provincial secondary school system. By the end of the year, we expect to publish in handbook form a *User's Guide to HaLong Bay* that is easily comprehensible to Vietnamese middle schoolers. If a small grant can be secured to defray publication expenses, we will also publish an English-language version aimed at tourists.

8. Project Expenditure

Table 2 Project expenditure during Defra Financial Year 01 April 2006 to 31 March 2007

9. Outstanding achievements during the reporting period

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

The thousands of towering limestone islands of Vietnam's Ha Long Bay have been for centuries the stuff of legends. The Bay is magically beautiful. It well deserves its designation as a World Heritage Site. Yet lately it has been hammered on all sides by high-speed economic growth.

Landfills, toxic waste, sewage runoff, dredging, mangrove destruction, over-fishing and reef destruction threaten the marine environment and the livelihoods of many people who live there.

It is critically important that a better balance be found. Popular attitudes about waste disposal must change. Strengthened public policies are needed to preserve the Bay's seascapes as a tourist mecca and its unique habitats as a regional reservoir of biodiversity.



With those goals in mind, FFI and the Ha Long Bay Management Department have launched a community Environmental Awareness Programme in the communities that border the Bay, home to nearly a million people. The programme's centerpiece is the EcoBoat -- a floating classroom that uses the bay as its campus.

During the nine month-long Ha Long Bay summer, youth groups from nearby Vietnamese cities and towns board the EcoBoat for a hands-on adventure. Sometimes they are joined by classes from international schools elsewhere in south east Asia. The teenagers explore caves, mangrove forests and tidal lakes, interview fishers and their families, learn skills in systematic observation of reefs, water quality and navigation, and take part in lively debates on how best to preserve the bay's unique culture and biodiversity.

Other FFI activities are drawing community leaders into discussion of policies that reconcile the twin imperatives of economic development and environmental protection.

The [Darwin Initiative](#)-funded programme will morph by mid-2008 into a successor organization that is rooted in and owned by the community, is committed and equipped to continue the aims of the project, and advocates effectively for sound management policies and environmentally friendly decisions on matters affecting the bay.

To learn more, visit www.ecoboat.org.

Annex 1 Report of progress and achievements against Logical Framework for FY 2006/07

This section has been submitted as a separate Word document in landscape format.

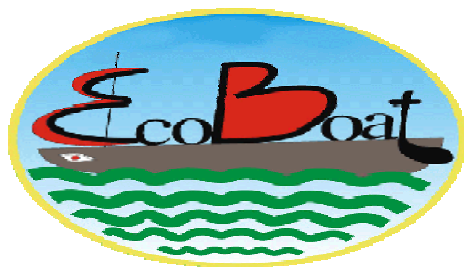
Annex 2 Project's full current logframe

NOTE: In consequence of decisions made at FFI's midterm review re reducing reliance on revenues from marketing EcoBoat trips to international schools, design of the projected Voluntary Organization (VO), and advisability of issuing a "State of the Bay" report, this logframe is no longer valid. FFI will consult the Darwin Secretariat on revisions.

<i>Project summary</i>	<i>Measurable Indicators</i>	<i>Means of verification</i>	<i>Important Assumptions</i>
<p><i>Goal:</i></p> <p><i>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</i></p> <p><i>the conservation of biological diversity,</i></p> <p><i>the sustainable use of its components, and</i></p> <p><i>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources.</i></p>			
<p><i>Purpose</i></p> <p><i>To establish a financially sustainable environmental educational programme structured as a public/private partnership focusing on the Ha Long Bay area as a living classroom.</i></p>	<p><i>Independent PVO (Private Voluntary Organisation) registered and operational</i></p> <p><i>Educational cruises being purchased by educational establishments covering costs of programme</i></p> <p><i>Educational cruises being provided to local schools, local leaders and community groups.</i></p>	<p><i>VO registration documents, constitution, and Board of Trustees.</i></p> <p><i>Audit of VO books.</i></p> <p><i>VO periodic reports.</i></p> <p><i>Audit of VO books.</i></p> <p><i>VO financial and progress reports.</i></p> <p><i>Work plans and booking schedules.</i></p>	<p><i>Local and regional educational establishments, especially international schools, continue to flourish.</i></p> <p><i>Educational interest in environment continues.</i></p>
<p><i>Outputs</i></p> <p><i>1. Educational and research programme and materials based on the Ha Long Bay area developed.</i></p>	<p><i>Programme curriculum development process completed.</i></p> <p><i>Draft curriculum ratified by Ha Long Bay Management Authority.</i></p> <p><i>Programme materials development process completed.</i></p>	<p><i>Workshop reports.</i></p> <p><i>Draft curriculum document.</i></p> <p><i>Signed ratification of curriculum.</i></p> <p><i>Workshop reports.</i></p>	<p><i>Local and national educational institutions and the WHS Management Authority play an ongoing role in curriculum development.</i></p> <p><i>Research continues to be a priority for the Ha Long Bay WHS Management Authority</i></p>

	<p><i>Data base established and data entered.</i></p> <p><i>Research data and analysis appearing in local and publications and bi-annual 'state of the bay' reports.</i></p> <p><i>Research findings integrated into education programme and materials</i></p>	<p><i>Published / printed awareness and educational materials.</i></p> <p><i>Data bases and summary statistic reporting.</i></p> <p><i>Prepared reports.</i></p> <p><i>Publications.</i></p> <p><i>Annual "State of the Bay" reports.</i></p> <p><i>Educational materials contents</i></p>	
<p><i>2. Operational requirements for the Eco-Boat established and programme implemented.</i></p>	<p><i>Project and partners staff trained in programme development and implementation.</i></p> <p><i>Practical field studies programme designed to respond to curriculum.</i></p> <p><i>Business plan developed</i></p> <p><i>Safety requirements researched and put in place.</i></p>	<p><i>Training reports.</i></p> <p><i>Number of trained staff.</i></p> <p><i>Range of field study itineraries, and associated educational activities.</i></p> <p><i>Detailed financial costings and projections.</i></p> <p><i>Marketing plan and materials</i></p> <p><i>Safety plan.</i></p>	<p><i>Preliminary business plan is correct.</i></p> <p><i>Funds earned during the project are set aside to capitalise the operation and provide cash flow for future operations.</i></p> <p><i>Educational institutions actually use the programme.</i></p>
<p><i>3. Independent VO is operating the environmental awareness programme by end of project.</i></p>	<p><i>Identify or help establish a suitable VO to take on the programme.</i></p> <p><i>Build structure of and capacity within selected institution.</i></p> <p><i>Open dedicated bank account for VO and Eco-Boat programme</i></p>	<p><i>Minutes of meetings.</i></p> <p><i>Workshop reports.</i></p> <p><i>Training reports.</i></p> <p><i>VO constitution and Board of Trustees.</i></p> <p><i>MOU with VO.</i></p> <p><i>Bank books.</i></p>	<p><i>Local and national government supports and promotes the creation of a VO.</i></p>

Annex 3 EcoBoat Project Lessons and Activities



These are lessons the EcoBoat team is able to teach in 2007. All but a few of the activities have already been field-tested, but we are continually finding new sites and developing new materials and approaches. Teaching materials can in some cases be distributed to schools prior to the EcoVoyage to allow the class to become familiar with concepts, and so maximize learning on the voyage.

Most lessons and activities are designed to be the major event of a morning or afternoon on the EcoBoat. The village visits include several activities and altogether require most of a day. For interviews, EcoBoat staff can assist as interpreters.

We are extremely flexible in the development of our programmes to meet your needs. Please discuss the development of your ideas for an Ecovoyage with us.

Human Ecology: Việt Hải Village – Visit a rural hamlet deep within Cat Ba National Park. There learn about bee-keeping and why it is environmentally important. During a one-hour jungle hike, learn about edible and medically useful wild plants. Break into several small groups to develop topics and questions, e.g., on the daily life, yearly rhythms and economy of farm families, then visit and interview families in their homes; later, back aboard the EcoBoat, report and discuss findings. Have lunch on-shore catered by a Việt Hải family. Senior high students analyze the economics of community-based eco-tourism.

Human Ecology: Cửa Vạn – Lesson begins with orientation to the remarkable history and culture of Ha Long Bay's fisher people at a UNESCO-sponsored cultural center in this "floating village" in the heart of the World Heritage Site. Then, with guidance on local cultural values, student groups develop their own structured set of research topics and questions to interview fisher families, then visit and interview fisher families in their homes; meet again on the EcoBoat to report and discuss findings. Junior high groups practice fishing techniques with local fishermen. Senior high students analyze the economics of aquaculture vs. traditional fishing.

Việt Hải Trekking – Orienteering practice using GPS devices; either hike up a well-built trail to the top of Navy Peak, which affords a spectacular view of the Bay and Cat Ba Island (2 hours); or hike overland via Frog Lake to National Park headquarters; there learn about efforts to save the Cat Ba Golden Headed Langur from extinction (6 hours).

Ha Long Bay's Spectacular Geology – Karst, Caves and Pools, or what happens when water meets limestone. The geological history of Ha Long Bay is explained back to 340 million years ago when limestone deposition began in warm tropical seas. The physical and chemical processes that have formed the landscapes are presented and modeled – including new concepts not widely recognized. Sea water also shapes the limestone and it is possible that sulphuric acid derived from bacterial breakdown of coal deposits was once also a factor.

Exploration of Đông Tiên Ông Cave & lagoon – EcoVoyagers visit a well-mapped, medium-sized cave that has been preserved in its natural state (i.e., not altered for purposes of mass tourism). Bearing electric torches, often ducking low in narrow passages, students are guided through a series of chambers, each with remarkable features and formations that illustrate the action of water and salt on the limestone rock. Cave insects are noted. A side entrance to the cave gives out onto a lovely tidal pool. An ancient shell mound provides a peg for discussion of human habitation in the Ha Long area during the last ice age, when the area of the Bay was a fertile plain inhabited by the first people in present northern Vietnam who knew how to catch fish and plant crops.

Kayaking -- Level one (Familiarization) – In a lagoon, students learn how to handle a simple two person kayak; good exercise, games, races. Level two (Kayak based activities in cooperation with Handspan Adventure Travel, and using sea kayaks). Activities include navigation practice with compass and GPS; competitions to see which team of kayakers can collect the most floating trash (CAS credit!); exploration of grottos and reefs. We can also conduct scientific monitoring expeditions and other parts of our programme by kayak – some areas of Ha Long Bay can only be accessed by shallow draft boats. Kayaks provide an excellent form of discovery learning, bringing students much closer to the physical environment.

Biodiversity: The Plants of Ha Long Bay – For plants especially, Ha Long Bay is a biodiversity “hotspot.” This lesson features the Bay’s endemic plant life, plants well-adapted to the difficult environments of the karst islands. After discussion on board of how plant species evolve to cope with specific soils and climatic conditions, the class hikes from a beach over a low ridge to a lagoon, recording along the way the types of plants found in sandy shore, slope, cliff and summit habitats. Seasonal changes in these plants and their cyclic involvement in the food chain keeps this walk always interesting.

Introduction to the Birds of Ha Long Bay – A short slide presentation introduces the birdlife that may be observed during the EcoVoyage.

Biodiversity: The Fish and Shellfish of Ha Long Bay – Now and Then. There are many ways of discovering environmental changes without hard data. A simple but very effective method is to ask the people who have lived in the area for generations. After guidance on local cultural values, student groups develop their own structured set of questions, then interview fisher families in Cửa Vạn village on changes in the composition of marine resources over the last fifty years. From the information thus collected, students construct Bay food webs “then and now” and attempt to agree on how and why the changes occurred. Its also a great opportunity to interact with the local community in their own village and to share cultures. (This lesson is more suitable for senior high groups, but can be developed for younger students).

Biodiversity: What’s Happened to the Reefs? Coral reefs are highly sensitive indicators of changes in water quality, and are indeed a threatened habitat worldwide. 90% of coral reefs in Asia have either already been destroyed or are under severe threat of being destroyed. We discuss the importance of reefs for biodiversity, food security, amenity and other economic values. Features of healthy and stressed reefs are introduced in a slide presentation. Then, in a sheltered bay, student groups receive a lesson on the use of masks, snorkels and fins, prior to exploring a highly stressed reef. They observe and record the various live coral, fish and invertebrate species, and also the remains of coral that have not survived recent disturbances. We run beginner, intermediary and advanced classes based upon the “Reefcheck” survey method. (Beginner classes involve coral structure identification and identification of stress sources, intermediate builds on this with more focus on indicator species, advanced classes use the Reefcheck method to make a systematic 200 metre transect from the beach to the far side of the reef).

Mud and Mangroves – Students spend two to three hours planting young mangroves in the EcoBoat mangrove rehabilitation project. Figuring out the most efficient way to do this job is good teamwork practice with an important CAS content. It’s a muddy but fun activity with an important theme that allows students to get their hands really dirty and achieve something very “concrete”. The lesson includes discussion of the importance of mangrove forests/sea grasses to the maintenance of biodiversity, food security, coastal protection and other economic activities. Mangroves are under huge threat from a variety of sources worldwide, and can be easily lost forever. Rehabilitation of any lost habitat is difficult – the trees themselves are only a small part of the mangrove forest biodiversity.

Comparative Caving – Tourism is considered an “economic spearhead for development” in Vietnam, and there is enormous pressure to increase tourism volume and develop natural sites for tourism. Tourism is also the world’s fastest growing industry. Tourism always affects the natural environment in some way, and there are many ways of trying to manage these impacts. Also, tourists have differing expectations from a “product.” We visit both a natural cave (see Đông Tiến Ông Cave, above) and a large cave developed and modified for easy access by large groups of tourists. Using materials adapted to a class’s level of sophistication, we lead a session on Tourism Management and the many issues that are faced by site managers. A moderated discussion centers on the values that may be lost when adapting natural sites to serve large numbers of visitors, and what may be gained, and on how environmental conservation values can be effectively presented to mass tourists.

Observation & Measurement (In three or four small groups, students do all of these activities during a multi-day EcoVoyage)

Map-Reading and Navigation – Students use maps and hand-held GPS devices to plot the EcoBoat’s course; can be extended to individual navigation in the Kayak module. Optionally, an instruction navigation module can be taught in the classroom before the voyage to prepare students to begin practical exercises immediately.

Tides and Storms -- Students log weather station data; discuss tides, storms and the annual weather cycle with the EcoBoat’s captain. The Ha Long Bay tides are unusual as have effectively only one tide per day. This affects tidal flushing of sediments from the bay.

Water Quality, and why it matters; students log data from simple equipment such as the Secchi Disk and also collect samples for lab analysis. Segment concludes with discussion of why measurement is important – is HLB getting more or less healthy? If not, why not? How can good data make a difference? Can simple measurements still be valuable in monitoring the health of the bay?

Sketching (or Water Color painting)

Traditional Boat-building – Mr. Quy’s family has been building wooden boats (including the splendid models at the Cũra Vạn Cultural Center) for thirteen generations. Classes visit to Mr. Quy’s workshop in Bãi Cháy to learn about the many types of wooden sailing boats that once plied Ha Long Bay.

“Looking Beyond the Brochure” -- Cultural Perspectives of Tourism – Tourism impacts stakeholders unevenly: some will benefit greatly, others may not benefit at all. Here we follow an excellent learning pack and video developed by “Tourism Concern,” one of the world’s leading tourism lobbying groups. The study focuses upon how tourists view the place they visit on a holiday, and how local people view the tourists, all in a developing country context. Tourism perspectives can be used as a project theme for your EcoVoyage.

Managing a World Heritage Site – Issues of Sustainability – With specific reference to Ha Long Bay, we investigate the complex of concerns facing managers of World Heritage Sites. We use an education pack developed by the UNESCO World Heritage Centre, and begin with an introduction to the concept of World Heritage Sites throughout the world before examining issues relating to biodiversity, sustainability, culture and peace. World Heritage Site Management can be used as a project theme for your EcoVoyage.

SUMMARISING ACTIVITIES

Ha Long Bay is a classic example of a multi-use economic area, with many complementary and contradictory activities taking place. It is an excellent site to demonstrate the needs of economic development with biodiversity conservation, and that there are no simple solutions.

We strongly encourage students to debate what they have seen during their visit. These issues will affect students during their lifetimes – they must find their own solutions.

Role play is an excellent medium to understand the perspective of a wide range of stakeholder groups. We guide and moderate the following role play-based debates, which emphasize critical thinking, and can be presented at different levels according to the capabilities and levels of understanding of the students:

1. Our Impact on Ha Long Bay (a theme spaced over a multi-day EcoVoyage) –We observe the different land uses and economic activities and develop an understanding of how coal mining, shipping, aquaculture, nutrient flushing, inadequate sewage treatment, reef-pillaging, and so on have impacted Ha Long Bay. We look at how these issues are being tackled currently and how impacts can be minimized. We examine the impacts of pollution, in particular sediment and floating plastic, on marine and bird life. We guide students into a moderated debate to discuss problems and solutions from different stakeholder perspectives in Ha Long Bay.

2. The Environmentalist’s Dilemma – What is the right strategy to get appropriate consideration of environmental preservation objectives in Ha Long Bay? If economic development could double everyone’s income, how much environmental degradation is acceptable? Would the answer be the same in Europe, the US or Australasia? We guide students into a debate aiming at balanced and workable solutions.

3. Imagining Different Futures for Ha Long Bay – Students take the roles of key stakeholders in the Bay, representing the major economic industries, conservationists, management institutions and the local community. Each has a say in the management and development of the Bay. Is there a solution that can fit everyone’s needs? Who wins? Who loses? When development confronts preservation can there be a perfect solution?

The EcoBoat Project also features Just Plain Fun – swimming off sandy beaches, beach games, team-building games & games with an environmental twist, kayaking, Blue Planet documentaries, singing competitions, maybe a campfire.