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Environmental Education In Costa Rica: Building A Framework For Sustainable Development?

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Abstract

Environmental education is commonly claimed to be at the centre of efforts to achieve sustainable development. Since the 1980s, Costa Rica has been one of the acknowledged leaders in efforts to promote environmental learning, and national policy includes a three-fold national development strategy which simultaneously promotes education, conservation and ecotourism. As of yet, however, what is happening 'on the ground' has not been examined in much detail. This article addresses this gap in the literature by providing an overview of the diverse programmes and actors involved in environmental education in Costa Rica, as well as analysing the politics of its implementation.

Keywords: environmental education, sustainable development, Costa Rica

Introduction

Environmental education has been placed at the centre of efforts to achieve sustainable development for the last several decades[1]. International agreements such as Agenda 21, for example, have called for a 're-orientation' of all education towards sustainability (UNCED 1992, chapter 36). Agenda 21 follows the lead of a number of earlier policies, including The Belgrade Charter and documents arising out of the First Intergovernmental Conference on Environmental Education in Tbilisi, all of which contained similar calls for the promotion of environmental education programmes as a way of raising awareness of environmental issues and halting environmental destruction.

More recently, the United Nations General Assembly also declared the 'UN Decade for Education for Sustainable Development' (2005-2014). The overall goal of the Decade is to integrate the knowledge and values of sustainable development into all aspects of learning, and to encourage changes in behaviour which will lead to a more sustainable and just society[2]. The nature of its implementation varies somewhat from region to region depending on the particular issues of concern and on the relationships between member states. In Latin America and the Caribbean the concept of education for sustainable development itself remains highly contested, with approaches and perspectives amongst policy makers and educators representing a continuum from more science-based to more socially-oriented definitions. Equally, while some member states have expressed a need for greater attention to issues of access in rural areas, others have more of an interest in particular environmental issues such as forest conservation or watershed management. Regionally, collaborators also include a wide variety of actors, including universities and educational research institutes as well as government and non-governmental organisations from more than 20 countries, each with primary interests ranging from pedagogy, to biodiversity conservation, to social justice and peace (see UNESCO and Earth Charter Initiative 2006).

So far, activities have included a number of regional and international conferences hosted by member states, a consultation exercise to share experiences between countries, and a wide variety of nationally-based initiatives. The actual scale and impact of such activities across the region is difficult to assess, however, partly because of the sheer scale of participants involved (both individual and organisational) and because a formal evaluation of the Decade not yet has been conducted. Nevertheless, Costa Rica has certainly been one of the most active regional member states. The first regional consultation for the Decade took place in San José, Costa Rica in late 2006, for example, and was hosted by the Earth Charter Initiative and UNESCO. In October of the same year, a national commitment to the Decade was also signed by the Costa Rican Minister of Education, the vice-chancellor of the *Universidad Nacional*, the director of the UNESCO office in Costa Rica and the director of the Earth Charter Centre for Education for Sustainable Development[3].

Even before the Decade began, however, innovative efforts in environmental protection for the last several decades had made Costa Rica one of the acknowledged leaders in efforts to achieve sustainable development and environmental management, and in the mid-1990s the nation was even offered up to the international community as the 'ideal international test case for sustainable development projects' (see Figueres Olsen 1996). The nation's reputation as 'the green republic' has brought with it both international attention and substantial economic benefits. In addition to profits from a successful ecotourism industry, international organisations have also invested heavily in conservation projects, research, and innovative environmental management schemes, as well as taking part in national policy formation and campaigning. The scale of this international attention is quite impressive: a 1995 World Resources Institute study, for example, concluded that there were more conservation projects in tiny Costa Rica than in all of Brazil (cited in Boza et al. 1995: 684).

The state has been applauded particularly for its attention to educational initiatives which are intended to support and encourage the development of sustainable environmental attitudes and behaviours, and national education policies make frequent reference to how these efforts support wider international agendas. The national state school curriculum, for instance, requires environmental learning as part of both primary and secondary education, while state-run national conservation areas provide informal learning opportunities for both domestic and international visitors. The state has received additional support in these efforts from a large number of international and domestic NGOs and for-profit business interests. Leaders from all of these sectors commonly express a commitment to a national development strategy which simultaneously encourages conservation, ecotourism and education. Discussions surrounding this three-fold approach – and critiques of its implementation – can be found throughout a large grey literature authored by government agencies, non-governmental organisations, national university academic studies, and private business interests (e.g. Proyecto Estado de la Nación 2004; Quesada Camacho et al. 1999; SINAC-MINAE 2003). There is also high public awareness of these concerns, at least partly through their frequent discussion in the national media, including newspapers, television and radio broadcasts, and there is

particularly strong public support for environmental education.

This support comes from at least two roots. Firstly, it is related to the substantial economic benefits which the nation has enjoyed through the promotion of the ecotourism industry. Secondly, it is the long-term inheritance of liberal nation-builders, many of whom were educators themselves, who argued that education is an entitlement of all citizens, is essential for the promotion of participation in democratic governance, and is the most important means of promoting the development of the nation and of individual citizens (see Fischel Volio 1987 and 1992). Such deep faith in the transformative possibilities of education has led the state to invest heavily in the national education system. Between 1900 and 1950, for instance, state investment in formal education represented approximately 16% of the national budget, and this had increased to almost 30% by the 1970s (Booth 1998: 94). This intensive investment in education is commonly believed to be the reason for the nation's high levels of social development. By 2003, Costa Rica ranked significantly higher in terms of adult literacy (95.8% of the population over the age 15) and human development (ranked 47th on the human development index) than any of its Central American neighbours (UNDP 2005: 219).

The high profile of Costa Rican efforts in environmental education both nationally and internationally invites a much closer examination of the existing educational infrastructure, and particularly of the potential links between education and sustainable development. While the wide variety of projects and programmes provided by state schools and universities, private schools, international and domestic NGOs, and for-profit businesses suggest that a healthy infrastructure does exist, upon closer examination there are a number of important tensions regarding the aims and goals of these programmes which impact heavily on their implementation. Certainly, the existence of so many and so varied approaches to environmental learning – in formal and informal settings, and addressing a wide range of issues – offer multiple opportunities for young people and adults to learn about and engage with environmental issues in their communities and within wider national discussions. But who is involved in environmental education in Costa Rica? And what are the resulting politics surrounding its implementation?

Research addressing these and other related questions was conducted between September 2002 and September 2003. The work was organised around three principle methods of data collection – formal interviews, participant observation and review of archival and grey literature. The primary research sites were the Monteverde region of Costa Rica and the capital city of San José, and this was complemented by additional work in other areas of the country. This focus on both 'local' and 'national' allowed me to construct a broad understanding of the networks and interconnections (or in some cases, disconnections) between the numerous actors involved in promoting environmental learning in the country. I conducted semi-structured interviews with approximately 50 informants, including environmental educators, teachers and administrators in private and state schools, development project co-ordinators, directors and staff of NGOs, conservationists and protected area managers, scientists and other researchers, tourism business owners and government officials. The majority of the information, however, was gathered through collaborative agreements with school teachers and environmental educators

based within conservation organisations. Through these agreements, I provided support for environmental education programming in exchange for opportunities to observe projects and interact less formally with educators and students. Finally, I also conducted a review of archival material and of the extensive body of grey literature produced by NGOs and relevant government ministries. This material included policy papers and curriculum documents from the Ministry of Education and the Ministry of Environment, project reports and planning documents from local and national NGOs, as well as academic work by educational researchers and anthropologists at three national universities[4].

Environmental Education in the Formal Sector

In the state-funded formal education sector, environmental education topics first began to be introduced in the Costa Rican national curriculum in 1977. Ten years later, the first national 'Environmental Education Master Plan' was published, and in 1993 an Office of Environmental Education was formally established as a separate division of the Ministry of Education (OEA 2002)[5]. The Office is relatively small, but carries large responsibilities – in 2002-2003, it had a staff of only five employees responsible for co-ordinating programmes across the nation on issues such as solid waste management, population growth, sustainable watershed management, and energy conservation. The staff also organised environmental clubs in schools nationwide, and co-ordinated with a range of both state agencies and non-state institutions involved in environmental issues. Other innovative projects included, for example, a 'sister school' experiment, established in 2002, which pairs primary school students in the US and Costa Rica for shared environmental learning experiences over the internet.

The vast majority of the Office's resources, however, are dedicated to training teachers on the national curriculum's environmental education requirements. This is because – despite the major role that the state universities have played in national conservation efforts since the early twentieth century (see Evans 1999: 21-23) – many educators claim that teacher training programmes do not provide sufficient training in environmental education topics and teaching strategies. Teaching about environmental issues at the state universities has tended instead to take place within other disciplines or areas of action. As early as 1975, for example, the *Universidad Nacional* established a School of Environmental Sciences which included an environmental education programme, and in 1994, the National Council of Vice-Chancellors created an Inter-University Commission for Environmental Education which works to 'environmentalise' (*ambientalizar*) all of the state universities (OEA 2002: 10). Co-ordination between education departments in the state universities – which are responsible for managing teacher training programmes – and the Office of Environmental Education, on the other hand, was minimal during the time of this research. As a result, teachers often commented that they felt unprepared to meet national curriculum requirements for environmental education in their classrooms.

In response to this need, the Office has undertaken its own series of workshops and seminars. Because of its limited time and financial resources, however, it is often difficult for staff to reach isolated (usually rural) schools and school teachers. In 1999, the Ministry and the Office began attempting to address this problem by publishing self-

training guides for teachers. Each of the guides contains lessons and self-guided activities that cover a particular topic area, and teachers are responsible for working through the lessons and sending reports to their regional Ministry of Education representative, who then certifies completion of the training.

The Office is also heavily involved in a larger movement within the Ministry to promote the application of 'transversal themes' (*temas transversales*) as part of the national curriculum. These were initially identified by Ministry policy-makers in 2001 in consultation with representatives from the United Nations Population Fund. In 2002, the themes identified were 'human rights, democracy and peace', 'building a culture of environmentalism and sustainable development', 'health education', and 'sex education' (MEP 2002). Rather than constituting a formal curricular requirement, the themes are intended to cross-cut all other areas of the curriculum through integrated classroom activities. Among the many creative examples of this I heard during my fieldwork stay, one Ministry employee told me that he asks students in his music programmes to listen to 'natural music' (birds, wind, sea), and then engages them in a discussion of what would happen to these sounds if forests are cut down or animals become extinct. Another Ministry employee suggested that, *Environmental themes can be incorporated into any subject. In mathematics, you can teach skills like statistics by discussing population growth or changes in forest cover*.

In addition to the use of transversal themes throughout the state school system, older students in selected state secondary schools also have opportunities to receive specialist training in environmental topics. For the first three years of state secondary school (7^{th}-9^{th} grades), students receive classes in the standard subjects of the national curriculum, including social studies, natural sciences, mathematics, Spanish and English[6]. At the end of the ninth grade year, students are allowed to choose a specialisation. For the last two years students then carry a double course load composed of the basic subjects as well as courses in their specialisation. In 2003, four of the nation's state secondary schools offered specialisations in 'ecotourism', as well as two others that offered a new 'environmental studies' programme. The environmental studies designation was a matter of particular pride within the Office of Environmental Education, with schools offering both intensive studies of environmental issues as well as training in ecotourism and English. According to the Director of the Office, the new schools' explicit mission is to create 'nature lovers' (*amantes de la naturaleza*) who will 'actively share their love of nature with others' after graduation. In more concrete terms, this means that the schools devote a great deal more time and space to environmental studies than any of their state school counterparts. In 2003, Ministry officials had high hopes that many more schools would take on the specialisation in the future.

The ecotourism specialisation has also proved popular with students, especially in areas where the majority of local employment opportunities are in the tourism industry. *Colegio Técnico Profesional de Santa Elena* (a state secondary school), located in the Monteverde region, is one example of this. The programme was first introduced on-site as a technical/vocational qualification in 2002. Prior to this, the school offered a specialisation in tourism which focused on business management aspects such as

accountancy and hotel management, and was intended to provide students with skills for future employment in local restaurants, hotels, and transport companies. The new ecotourism programme, in contrast, focuses on the acquisition of knowledge about the local environment and tourism industry, national environmental history and legislation, and international environmental policy. Rather than seeking to train students to become future business owners, the new programme is intended instead to train them to take up work for local conservation areas and other ecotourism destinations as nature guides, environmental educators or other protected area staff (for example, as guards, administrators or management).

Topically, the ecotourism specialisation encompasses five broad subject areas: environmental education, environmental management, ecology, ecotourism, and English. The tenth grade curriculum, for example, allows for 80 student contact hours in 'environmental education', 40 hours on 'environmental contamination', 40 hours on 'environmental legislation' and 80 hours on 'rural tourism' over the course of the academic year. Overall, the specialisation requires intensive study of ecology (especially including identification and memorisation of endemic species of flora and fauna), discussion of environmental concerns and management, and an understanding of national and international environmental legislation and the agencies involved in it. Ministry of Education policy advises teachers to orient these discussions towards local ecology and local environmental concerns and management, with the understanding that the majority of students will seek work in their local tourism industry. Indeed, as the majority of Monteverde's population is either directly employed or indirectly involved in the tourism economy in some way, this is the most likely outcome.

The *Colegio's* students also benefit from additional support from a local conservation area – the *Reserva Santa Elena* – to which the school is administratively linked (see Wearing 1993). This support has proven highly valuable to the often financially-strapped school. Such collaborative relationships between schools and the private sector can be found throughout the nation, most notably in areas where conservation NGOs take an active role in local environmental management.

Education in Conservation Areas

In fact, a significant amount of the environmental education found both in schools and within communities is provided by either the Ministry of Environment or by private conservation organisations. At its inception, the state's strategy for management of the national park system focused on strict protection – an approach which often marginalized neighbouring communities – but in 1995 it was re-organised into a National System of Conservation Areas (SINAC)[7]. Nationally, there are now of these ten state-owned conservation areas, each of which includes a core area for biodiversity conservation (usually a national park) and buffer zones for sustainable development activities such as controlled timber or firewood extraction, wildlife management and ecotourism (Vaughn & Rodriguez 1997: 446).

Although officially under the centralised authority of the Ministry of Environment and SINAC, the differing character of each conservation area (in terms of ecology, geography

and relationships to local communities) has resulted in a relatively diverse range of local management schemes. This individualised management has in turn resulted in a similar diversity of approaches to environmental education, and in a few cases – despite national policy commitments – to a lack of any programming at all. Regions which have received greater public attention, for example, such as high density tourist destinations, are more likely to have the necessary resources and staff to run programmes, while less well-known or popular sites often suffer from serious shortages of funding and staff. Among those that do offer programmes, there is a great deal of variation in both their content and goals. Some of these differences are based on the ecological character and specific conservation needs of individual areas (the educational content of projects organised in a forest ecosystem is understandably different than for those located in coastal areas, for instance), but programme content and orientation also depend heavily on the perspectives of influential regional and local policy-makers and educators. According to one of the Ministry of Environment's national-level environmental education co-ordinators, programming offered in Guanacaste province, for example, focuses largely on teaching the natural sciences, and is labelled by its organisers – one of whom is an internationally-renowned biologist – as 'biological education'. Programmes in the Osa Peninsula, on the other hand, tend to be more strongly oriented towards teaching about local social issues and their connections to environmental management, as well as to more generally encouraging community involvement in protected area management decisions. Again, this is largely due to the perspectives of the individual educators involved in organising programmes.

In addition to state conservation areas, private conservation organisations also protect an additional 1% of the national territory (SINAC-MINAE 2003) and offer further educational opportunities for visitors and local residents. The size of individual private land holdings varies widely, from large areas covering tens of thousands of hectares to small-scale projects aimed at protecting community forests or watersheds. Many of these both large and small projects receive financial and administrative support from international organisations such as The Nature Conservancy, Conservation International and the World Wildlife Fund, among others, many of which use Costa Rica as their base in the Central American region. As the nature of private conservation organisations in the country is quite varied – ranging from small locally-based NGOs to large international scientific research organisations to for-profit tourism businesses – the educational programming which they offer is correspondingly diverse. While some groups focus their efforts on specific local concerns (such as watershed or forest protection) and aim environmental messages at local residents, others focus on international initiatives (such as carbon trading programmes or sustainable timber trade) and more often target visiting (foreign) ecotourists. Despite their relatively limited geographical coverage, a few of these privately managed areas are among the nation's most popular tourism destinations and therefore may reach a bigger audience than their state counterparts (cf. Aylward et al. 1996). As such, their role in, and influence over, the overall educational effort within the country should not be underestimated.

Public Education Initiatives

In a more general sense, education and environmental management are never far from

public attention in Costa Rica. National media, including newspapers, television and radio broadcasts routinely deal with issues of current environmental concern or promote participation in conservation projects[8]. For instance, the popular newspaper, *La Nación*, which has an average daily circulation of 200,000 copies nationwide, carries almost daily coverage of both educational and environmental issues. The paper also regularly publishes environmental education (*Aula Verde* or 'Green Classroom') and science education (*Zurquí*) supplements for use as study guides at home or in classrooms.

State agencies and non-profit conservation organisations also use radio and television broadcasts to advertise their work, to publicise new initiatives or to attract participants to public events. In 2003, for example, the Ministry of Environment actively promoted a campaign urging citizens not to buy or procure wild birds for sale as pets. One television advertisement for the campaign began with a rather dramatic scene of a bulldozer crushing a pile of metal bird cages. This was followed by an emotional plea from a group of primary school children who asked members of the public to 'leave animals in the forest where they belong', adding that 'when your parrot dies, destroy the cage, so that one more bird can stay in the forest'.

Radio and television broadcasts have proven an especially useful tool for reaching isolated rural populations where access to environmental learning and resources is limited. The Ministry of Education, for instance, supplies teaching and learning support for teachers and students in rural areas via serial radio programmes. By 2002, these radio broadcasts had already been utilised to offer instruction in environmental education, mathematics, and English.

In addition to national campaigns, NGOs have also increasingly taken up the goal of public education at the local level, especially through the organisation of public meetings, workshops, and seminars. Such gatherings are used communicate information about local events and concerns, and also as a means of encouraging participation in local decision-making. This is particularly the case in isolated rural areas, where the state has often historically had little influence and residents have instead organised themselves to solve local problems. In the Monteverde region, for instance, there are more than 40 committees and 12 membership organizations involved in local development, conservation, environmental management and education (Burlingame 2000: 378).

Not only have these groups played an influential role in local decision-making, they have also provided important sites for the exchange of information and perspectives. Previous research suggests that residents themselves recognise their reliance on local non-state organisations as sources of information about local events and happenings, and that as much as 61% of residents prefer to receive information about local affairs in these ways rather than through more formalised or written modes of communication (MVI & USF Globalization Research Center 2002). As such, these efforts by local organisations are another dimension to the educational work being done within the country as a whole.

Of course, the nature of the relationships between local organisations, community members, and state agencies vary widely. While in some locations there is considerable

antagonism between groups, in others there are high levels of cooperation and collaboration. These relationships can have a significant impact on the implementation of both environmental education programmes and local development schemes.

Further complicating the overall picture of environmental education in Costa Rica is the influence of for-profit businesses and private investors, especially in the ecotourism industry. Like NGOs, these organisations have complicated relationships with campaigners, conservation groups, and the state, and there are on-going discussions within the country about how to find a balance between profits and environmental protection. One note-worthy example of this kind of effort is the National Biodiversity Institute (INBio) and its flagship institution, *INBioparque*. The park, first established in 2000, is a more that 5 hectare site in which visitors – many of them Costa Rican student groups – can experience three 'life zones' characteristic of Costa Rica, each of which contains appropriate floral and faunal species, as well as a butterfly garden, an aquarium and a model farm. The park's Biodiversity Education Programme also offers student workshops, teacher training, and publication of learning resources for students and teachers throughout the country. INBio's other projects centre on biodiversity research, and one of its most high profile projects is an on-going effort to catalogue the nation's biodiversity. This has involved training a large corps of 'parataxonomists' to collect and identify hundreds of thousands of specimens.

Although originally envisioned as a government institution, when the state did not have sufficient resources to fund the project, members of the commission appointed to develop the project proposal decided to seek private funds. INBio was established in 1989 with large grants from the Swedish International Development Agency (SIDA) and the US MacArthur Foundation (Zeledón 2000). By all accounts, the project has been an overwhelming success. In 2003, a total of 82,327 individuals visited *INBioparque* (INBio 2003: 16), and in the same year the organisation received a total of US $6.1 million in funding and other income (INBio 2003: 27). Of this total budget, 48% came from external funders (including the Norwegian Development Agency, the Dutch government, the World Bank, the Inter-American Development Bank, and UNDP), the remainder of funds came from income earned through research contracts and various other commercial activities (INBio 2003: 27). Despite depending on funding from foreign agencies and its own income-generating activities, however, INBio maintains strong ties to the Costa Rican state. The vast majority of the collection and identification work for the biodiversity cataloguing project, for example, is carried out within the national system of conservation areas, and in close collaboration with the Ministry of Environment.

Programmes initiated by the state and a wide range of organisations and interests thus form a deeply complicated network of efforts in conservation, research, development, and environmental education in Costa Rica. Educational programmes from the state and from national and international NGOs combine – directly and indirectly – with the actions of other privately-funded actors, including private schools, ecotourism businesses and individual citizens working as environmentalists, scientists, educators and campaigners, and result in moments of both collaboration and conflict. Furthermore, as sustainable development initiatives have received increasing attention at the international level

through initiatives such as the UN Decade for Education for Sustainable Development and through efforts at the national level in Costa Rica, the ideological, political and economic connections between education, conservation and development have continued to strengthen.

Attention to these links internationally has resulted in higher levels of available funding for sustainable development projects, and has encouraged the re-orientation of projects initiated by the Costa Rican state and domestic and international NGOs. Indeed, because so much of the social and economic support for education in Costa Rica has centred around environmental issues, environmental education has become an important point of intersection between state, non-state, domestic and international actors, as well as a focal point for debates about the appropriate content and aims of environmental education and its relationships to sustainable development.

Implementation and Effectiveness

Despite this strong network of public and private support for environmental education, however, there remains a fair amount of critique of existing efforts within the country. In the formal education sector particularly, many educators and policy makers are troubled by the overall educational quality offered by the state system. Educators cite particular problems with inefficient administration, a lack of resources and training, and the heavy demands of the national curriculum and assessment system.

One central, and long-running, concern is the tendency of many schools and teachers to place emphasis on teaching through memorization and rote learning. As Humberto Pérez, a leading authority on Costa Rican education, succinctly describes:

> 'Learning to learn: this is rarely taught in our schools. We often see primary, secondary, or university students copying information from a notebook or an encyclopedia, only to repeat it later in an exam without analysis or question. Our education continues to be bookish and by rote. It is believed that to read books *about* biology and history is to study biology or history.'(Pérez 1987: 56, original emphasis; translation cited in Biesanz et al. 1999: 207)

Classroom teaching methods, for example, frequently centre around teachers writing information on a chalkboard and requiring students to copy it into notebooks for later memorisation; alternately, they may read aloud and ask students to repeat the recitation. Student boredom with such teaching methods is often cited as a reason for misbehaviour and a general lack of interest in studying, particularly within adolescent age groups. Educators with an interest in promoting social values through environmental education see this kind of pedagogical orientation as particularly troubling, and in some cases even counter to the central goals of programmes.

Ministry of Education policy and teacher training programmes in the national universities do actively encourage teachers to use more innovative teaching methods, and there are many dedicated and creative teachers working in the country, however a significant number of educators continue to feel limited by a widespread lack of resources or

appropriate training. As mentioned previously, many educators argue that teacher training programmes are not effectively co-ordinated between the Ministry and the state universities, leaving new teachers unprepared for the demands of the curriculum and the classroom. Classroom teachers also often complain that they are expected to 'be creative' and at the same time to prepare students for the Ministry's national exams – which centre on mastery of a particular set of facts. These exams are required at the end of the sixth, ninth and twelfth grades, and teachers routinely comment that the majority of class time, especially in these years, is spent on preparation for the exams. Unlike the basic subjects, however, environmental education (like the other transversal themes) is not examined by a separate national exam, and so it is often neglected in classroom instruction.

Frequent budget shortfalls further exacerbate the existing scarcity of resources which educators – especially in poorer, rural areas – continually face. These large-scale shortages of funding are due to both internal organisational problems, as well as the state's larger economic difficulties. A national economic crisis during the 1980s and the impacts of subsequent IMF-imposed Structural Adjustment Packages have had especially significant and long-term impacts on the state's educational infrastructure (see Carnoy & Torres 1994).

Scarce funding and resources are, of course, especially problematic at the level of the school and classroom. Many school buildings are in need of repair, and classrooms frequently lack basic supplies such as chalk, paper and textbooks. These are issues which have a significant impact on the education system as a whole, but they also have particular impacts on environmental education because schools and educators who struggle with a lack of access to sufficient classroom materials and training are less likely to devote time and resources to special curricula. As a result, many students receive little or no environmental education in practice, and schools may rely on outside organisations such as conservation areas or NGOs – where they are available – to provide lessons and materials. While the aims and goals of privately-funded programmes often echo those found within Ministry of Education policy, however, they tend to be much more firmly tied to the demands of particular funders (scientific research organisations, for example, who demand absolute protection of forested areas and seek to promote educational programmes with mirror this perspective) or the needs and perspectives of individual organisations (especially in terms of wider organisational goals), and so may offer somewhat different content and orientations (see Blum 2006).

Indeed, despite the relatively uniform appearance of environmental education policy within the country, what falls under the umbrella of 'environmental education' in national, regional, and local discussions and practices is often the subject of intense debate. These discussions centre on both the content and the aims of programming. As cited above, some educators advocate more science-oriented styles of environmental education and argue for an emphasis on teaching about ecological and biological issues, claiming that when students are taught about these issues they will learn to love – and therefore be inspired to protect – the natural world from destruction (cf. Ham 1992). Supporters of programmes with a stronger social-values orientation, on the other hand, claim that environmental issues cannot be studied in isolation, but should instead be

taught in relation to human needs and activities. This perspective encourages critical thinking about issues such as human rights, peace, poverty, and gender inequality, and writings on the subject tend to use a more explicit language of values and responsibilities. Wals claims, for example, that environmental education should be 'a learning process that seeks to enable participants to construct, transform, critique and emancipate their world in an existential way' (1996: 301).

In Costa Rica, a social values orientation for environmental education fits well within existing discourses of the role education in society, and national policy makers are often the first to support this kind of approach. The head of the Office of Environmental Education, for example, argues that this is precisely why environmental education is a transversal subject, rather than a single component of the national curriculum: *It isn't like other subjects. It is fundamentally about values, and changes in attitudes and aptitudes… environmental education should provide content – in terms of the curriculum – and also allow students to be reflexive about their own ideas and behaviours.* This kind of orientation is frequently criticised within the conservation and scientific research community, however, by those who favour a more science-based approach to environmental education. Reflecting on environmental education programmes run by NGOs which use activities such as theatre exercises and group discussions of social issues, for example, one biologist in Monteverde frankly commented: 'that's just not environmental education'. Such fundamental disagreements over the content and goals of environmental education are familiar within both academic and practitioner discussion in Central America and elsewhere (cf. McKeown & Hopkins 2003, Palmer 1998, Huckle & Sterling 1996, Jickling 1992), and much more attention is needed to understand how they take shape in specific contexts.

Building a Framework for Sustainable Development?

Fundamental to all of these debates, of course, is the issue of whether environmental education – in whatever form – actually supports and promotes more sustainable development in practice. Certainly, in the Costa Rican case, the nation's environmental situation has improved significantly since environmental education programmes were introduced alongside the development of progressive environmental management legislation and programmes. The situation was quite different during the 1980s when the nation was losing an estimated 4% of its forest cover annually – the highest deforestation rate in the western hemisphere at the time (Carriere 1991: 188). Concern had been steadily increasing since the early 1970s, when biologist and co-founder of the respected Tropical Science Centre, Joseph Tosi, famously predicted that if deforestation continued unabated, Costa Rica would have virtually no forested areas left by 1985 (Evans 1999: 50). Indeed, between 1970 and 1980 more than 7,000 square km were cleared, and by 1987 total forest cover had been reduced to only 31% of the land mass or approximately 16,000 square km (Carriere 1991: 188). The current expansive network of efforts in conservation, environmental management, education and ecotourism were a direct response to these concerns.

In contemporary Costa Rica, there is also very strong evidence of a high level of public awareness of environmental issues which is likely the result of the sustained educational

efforts of both the state and private organisations. A survey conducted in 2002 by UNIMER Research International in conjunction with the national newspaper *La Nación* reported that respondents believed that environmental degradation was among the five most significant problems faced by the nation, along with unemployment, violence, poverty and the high cost of living (UNIMER 2002; see also Proyecto Estado de la Nación 2004: 29). The survey also showed that the vast majority of respondents saw environmental education as a key to environmental conservation (Proyecto Estado de la Nación 2004: 30). This awareness among the general public is a powerful force, and alongside an even longer-term national commitment to peace and democratic governance, it sets the stage for a significant shift towards sustainable development[9].

Conclusions

The central place given to environmental learning within contemporary international policies such as Agenda 21 and initiatives such as the UN Decade for Education for Sustainable Development requires an examination of what is meant by the term 'environmental education' in particular places, as well as of the relationships and tensions which are involved in its implementation. Costa Rica's network of diverse approaches to environmental learning – in formal and informal settings, and addressing a wide range of topics – offers significant opportunities for both young people and adults to learn about and engage with environmental issues in their communities and within wider national discussions. A strong national policy framework, support from NGOs and private partners, and high public awareness of environmental concerns suggest that this network is both far-reaching and effective. However, significant tensions remain amongst educators, policy makers and practitioners about the appropriate content and goals of environmental education programming – a situation that is further complicated by on-going resource limits from the state. These tensions are not only about theoretical considerations, however, but are also linked to complex relationships between the state, NGOs and business interests.

In many ways, the case of Costa Rica directly reflects the debates and tensions found within the existing environmental education research literature. However, the nation's particular society, economy, and history have also led to a highly individualised style of implementing programmes. This particularity calls into question the often simplistic conceptualisations of environmental education which can be found in many international policy documents – claims which suggest that the simple provision of information or environmental knowledge will bring about changes to attitudes and behaviours and lead to the creation of a more sustainable society. In order to better understand the potentials and limits of environmental education as a tool for achieving sustainable development, therefore, this research suggests that far more research is needed which explores the wider social and economic relationships which effect the implementation of environmental education in particular contexts.

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[1] It is important to acknowledge some of the long-running debates around terms and definitions in this area, especially regarding the perceived differences between 'environmental education' and 'education for

sustainable development' (cf. McKeown & Hopkins 2003, Jickling 1992). While recognising the importance of these debates, I use the term 'environmental education' (*educación ambiental*) here because it is the term most commonly used in Costa Rica, where it describes a wide range of environmental teaching and learning activities.

[2] For a full description of the Decade and its goals, see http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html.

[3] Known as the *Compromiso Nacional sobre la 'Década de la Educación para el Desarrollo Sostenible'*. The full text is available on http://www.earthcharter.org/foro2006/files.cfm.

[4] In the following, material taken from all of these sources is denoted in one of two styles: direct quotations taken from recorded interview transcripts or publications are placed in inverted commas, while paraphrased passages taken from my interview notes are in italics. Although passages in italics do not represent direct quotations, they are true to the intent of the conversation in which they took place. All translations of interview material and of published resources are mine, unless otherwise noted.

[5] In Spanish, the *Oficina de Educación Ambiental* (OEA).

[6] Additional courses may also be offered in subjects such as French, psychology, religion, music education, philosophy or physical education, depending on the availability of a qualified teacher.

[7] In Spanish, the *Sistema Nacional de Areas de Conservación* (SINAC).

[8] Some educators do believe, however, that national media ought to be doing more to promote environmental awareness. Costa Rican historian Astrid Fischel Volio (also recently Minister of Education) argues that 'The mass media have not participated directly but have contributed to the debate by influencing public opinion. The major newspapers, and most radio and television stations, are in the hands of conservative sectors and reflect their views about the role of the state' (1992: 141).

[9] There are, of course, a number of further important issues related to how this increased knowledge might or might not bring about actual behavioural change. Some discussion of this can be found in the existing literature. See, for example, Courtenay-Hall &Rogers (2002) and Kollmuss & Agyeman (2002).