A Paradox for Environmental Education: How can we 'deliver training to targets' using 'participatory, reflective approaches'?

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Abstract

Recent advances in environmental education have promoted participatory, active learning approaches. In this context, this paper reports on an evaluation of an environmental training component, integrated within a development programme on the Wild Coast, South Africa. Despite the adaptive planning framework and recommendations from the monitoring team, the programme failed to achieve action-based environmental education to the extent required. In addition, there were tensions between the 'participatory, reflective approach' promoted and the ethos of the development programme that was expected to 'deliver training to targets'. Although problems were experienced in this case, it is proposed that action-based environmental training, combining capacity building and ecological problem solving, is an effective method to incorporate an environmental component into many development initiatives. It is suggested that the paradox observed between participation and delivery is a general feature of such programmes but was exacerbated by the logframe characteristics, structure and constraints of this particular development programme. In future programmes this tension should be acknowledged and exploited positively to improve both environmental education and the development itself. A framework for integration of environmental training within a development or conservation initiative is presented.

Inroduction

Environmental education is seen to be an interdisciplinary and holistic form of education that is geared towards action and change. Recent advances in environmental education have promoted the use of participatory, learning-by-doing, action–based methodologies and a goal of 'beyond awareness' to understanding. These methodologies include Participatory Action Research (PAR) (Mordock & Krasny, 2001) and problem solving approaches (Blanco, 2002; Castillo *et al.*, 2002; Layrargues, 2000). There has thus been a move from passive reception of information to active participation within the learning process, whilst teachers become facilitators of learning.

This outcomes–based, problem solving philosophy has been particularly recommended in developing countries where environmental crises threaten livelihoods (Blanco, 2002; Castillo *et al.*, 2002; Layrargues, 2000). However, it is recognised that a focus on problem solving without

understanding may treat the symptoms of environmental problems without changing fundamental factors (including behaviours) to address the causes (Layrargues, 2000; Rathgeber, 1995).

A theoretical basis for action-based environmental education thus exists, but how easy is it to put such theory into practice? In this paper, I describe an experience in which tensions between the approach and the context in which environmental education occurred inhibited the ability of an action-based approach to optimise environmental training. We observed a paradox between the 'delivery of environmental training to targets' within a development programme framework and the preferred 'participatory, reflective approach'.

I begin by describing the development programme itself and explaining the role of environmental training within this context. I then elucidate the role that I played in evaluation of environmental training, discuss the difficulties in implementing evaluation recommendations and explore the paradox observed. Finally, I propose a framework for integration of environmental training within a development programme that exploits the tensions described as a positive catalyst for transfer of knowledge and skills. Detail of the evaluation process, evaluation results and lessons learnt are expressed elsewhere (White, Sisitka & Dumalisile, in preparation).

The European Union Wild Coast Programme

The Wild Coast region stretches along the coast of the ex-homeland of the Transkei from the Kei River in the south to the Umtamvuna River in the north in what is now part of the Eastern Cape Province, South Africa. The region is biologically valuable and local people live a largely subsistence lifestyle, supplemented by migrant salaries and pensions. The region formed part of the Transkei homeland under the apartheid regime and the consequence of this socio-political history is a legacy of poverty, overcrowding, poor education and growing environmental degradation. Improved livelihood options and maintenance of biodiversity are priority development initiatives.

The European Union (EU) Wild Coast Programme was thus designed to improve the income and employment of local people through assisting them in developing and participating in sustainable tourism initiatives along the Wild Coast. It initiated as a four-year programme in 2000, funded by the EU with the National Department of Environmental Affairs and Tourism (DEAT) as the contracted implementation agency. The implementation of the Programme for the first four years was, however, packaged out to a Programme Management Unit (PMU) and three specialised NGOs: PondoCROP (community enterprise support), Triple Trust Organisation (business and specialist skills training) and World Wide Fund for Nature: South Africa (WWF-SA) (environmental responsibility). The PMU had overall authority and responsibility vested in it to implement the Programme and each NGO reported to the PMU with regard to undertaking their contractual responsibilities and activities.

Programme objectives included raising environmental awareness and capacity to facilitate ongoing community based tourism development after the Programme ends; establishment of environmental management structures and policies; and provision of a development roll out

model for other regions. There were seven anticipated target results, including training in natural resource management.

The Programme was designed around a framework that was developed into a 'logframe': a logical framework approach producing Annual Work Plans (AWPs) in which activities under each performance area had to achieve targets by specified dates, within budget allocations.

WWF-SA had Programme goals to foster an appreciation of the natural environment, encourage community tourism enterprises in environmental best practice, fortify community based natural resource management systems and improve stakeholder relationships. Core interventions included provision of training and capacity building in natural resource management to 324 community members, traditional and elected leaders and fostering of environmental awareness in 5 000 local stakeholders (later changed to 1 000).

Environmental training and other activities were undertaken under contract by successfully tendering service providers, whilst a local WWF-SA coordinator integrated activities. Inception meetings were held between the WWF-SA coordinator, a PMU representative and the service provider and the subsequently developed plan of work was the blueprint to which the contracted service provider was expected to work, with interim and final reporting schedules. Consequently, the details of each environmental training course were provided within the Terms of Reference (ToR), clarified at the inception meeting and adapted depending on the results of the interim reports.

Environmental Training Within the Programme

Environmental education was thus only one of the goals of the Programme and the integrated training was expected to support main development activities. WWF-SA commendably attempted to employ an adaptive, bottom–up, collaborative approach to environmental training. They began by conducting a workshop with trainers to identify perceived training needs for environmental education in the region; later undertook a needs analysis where proposed target groups including government departments, community and municipalities were visited by a team who identified priority and non–priority needs and conducted further needs analyses at the end of Annual Work Plan 2 and Annual Work Plan 3.

In all, a total of 13 courses were provided by a total of six service providers to target groups including community members, people involved directly in the tourism enterprises, traditional and elected leaders, protected area managers and people involved in local Trusts and Committees. WWF-SA further attempted an adaptive planning strategy by implementing a monitoring and evaluation programme in which training could be reviewed and feedback referred back into the planning cycle. This evaluation procedure was implemented through several different projects that were undertaken by the author with other partners (see Table 1).

Table 1. Summary of the review, evaluation, planning and tracking tasks undertaken by the environmental training review team during the EU Wild Coast Programme.

| AWP	Year	Contract	Tasks
1	2000	Trainers' workshop	Organise and facilitate workshop with trainers currently or likely to be working in environmental education on the Wild Coast to determine training needs.
2	2001	Design tracking system	Design a tracking system to follow graduates after training.
2	2002	Evaluation and planning of training	Hold workshop for stakeholder assessment of training to date, evaluate training, propose training plan for final years of programme.
2	2002	Implement tracking system	Track graduates from all courses implemented to date.
3	2002–3	Evaluation of training and strategic assessment	Evaluate training, help develop ToR, review materials, attend course sessions, plan for AWP4.
3	2002–3	Implement tracking system	Track graduates from training courses, recommend methods to enhance implementation of training, measure impacts of training.
4	2004	Synthesis report	Produce desk-top report synthesising evaluation results to date, indicating future training priorities and proposing exit strategy.

Tools used included interviews, questionnaires, workshops, indicators and assessment of outputs and impacts against stakeholder expectations (including Programme objectives). The complexity of the Programme structure and the interactions between role players are shown in Figure 1.

Contradictions in implementation of evaluation recommendations

The details of the evaluation results are reported elsewhere (White *et al.*, in preparation). Whilst many positive results were identified, this section highlights examples of recommendations made that promoted more participatory or action-based approaches that could not be implemented within the framework of the Programme.

The trainers' workshop highlighted the current lack of expertise in the region, with government departments planning to initiate related training and with several consultants involved in specific projects, but few potential service providers for the Programme. Despite a well designed and highly motivating first course, action plans for post-course implementation had not been developed and the focus of the tracking system was altered somewhat to assist in ensuring that proposed action plans could be implemented. However, WWF-SA found it difficult to alter the AWP that was underway to encourage graduates to achieve action plans.

Figure 1. Structure of the EU Wild Coast Programme demonstrating the role players, complexity of interactions and number of structural levels through which the review team had to communicate
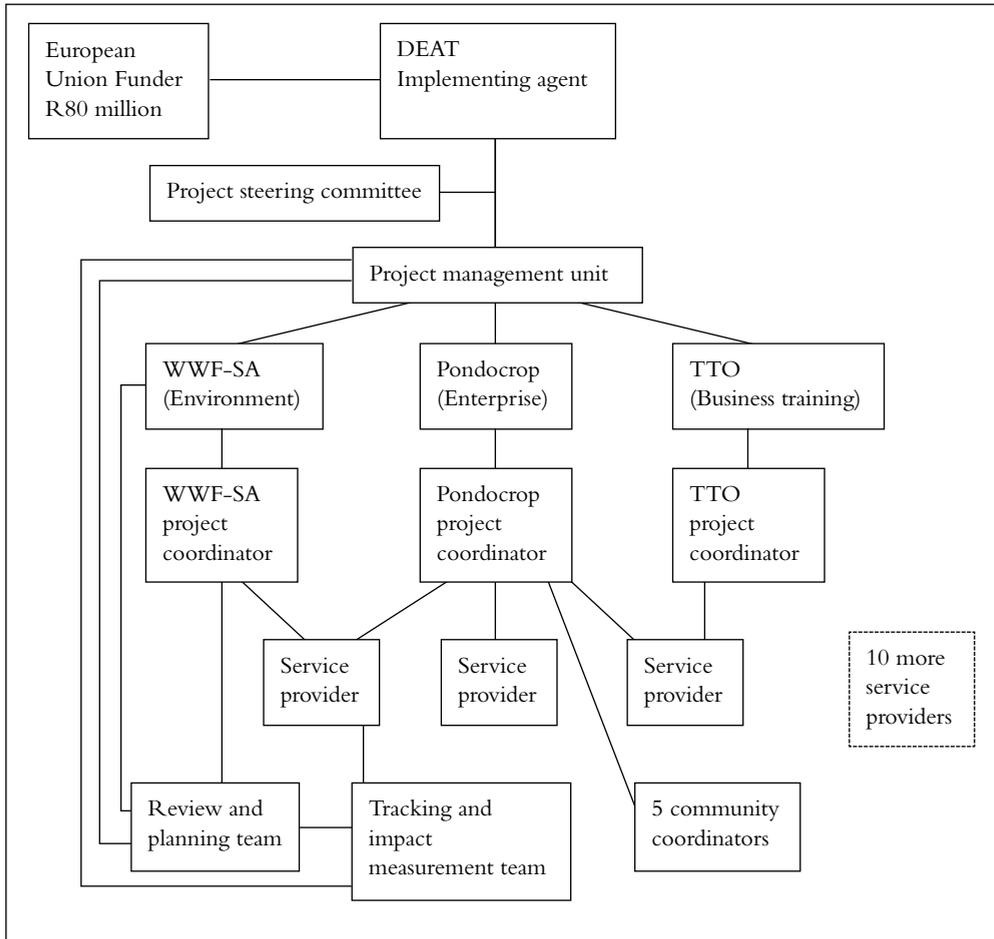
A more participatory approach to course design was recommended for a course for protected area managers. However, despite some discussion with senior government officials, a lack of active participation limited its adoption by the department.

During evaluation, a paradigm shift was proposed from the concept of a training course to that of a training programme where: *training programme = course + action plan*. This shift supported a participatory, action-based, problem solving approach. Whilst WWF-SA and the PMU embraced this concept in theory, it was not very strictly regulated in subsequent ToR that were to guide ongoing course development. Even where it was made clear, most service providers were reluctant to adopt this principle, possibly because of inexperience in environmental education or with conditions on the Wild Coast. Late release of ToR and the need to appoint service providers registered for the South African National Qualifications Framework (NQF)

assessments limited service provider choice and this impacted hugely on the ability to deliver training using adaptive, participatory approaches.

For example, the action component was not effectively delivered in an environmental management planning course in which the trainer was expected to deliver a basic, contextualised theoretical basis and then mentor the practical development and initial implementation of environmental management plans for each enterprise. The trainer developed materials that were far too complex for the learners and on request for practical modification included only a single site visit.

A further example was the course for land use planning that was also meant to provide basic theory, supported by practical examples, and followed up with the participatory development of land use plans. This course was reduced to a three-day introduction to the concepts of land use planning. A course to train managers in the development of management plans through mentoring of plan development after a basic introduction to theory initiated an exemplary process, but managers had such limited initial levels of capacity that they failed to achieve targets and the trainers were unable (or unwilling) to adapt the course by intensifying mentoring, providing other support or modifying course goals.

It was recommended that, where possible, future courses should include participants from different groups to enhance relationship building and collaborative benefits; this successfully occurred in some subsequent courses. A recommendation for participatory curriculum development and subsequent facilitation with previous graduates was followed although in practice the curriculum development was rushed and organisational problems limited the success of this course.

A training plan was developed that envisaged a foundation environmental and tourism awareness course followed by building blocks of specific courses related to enterprise development, capacity building of people on trusts and legislation and natural resource management for leaders. Some of these courses were later provided but the delayed implementation of the foundation course precluded its foundation function for further courses, and the impediments to enterprise implementation and Trust establishment within the Programme prohibited specific environmental training in certain areas. Overall, Programme constraints delayed the strategic plan timescale such that by the time of implementation the plan did not fit the logframe and the final year of training was curtailed.

In an attempt to improve communication amongst Programme actors, templates for reporting by service providers and an evaluation protocol were developed, but were not employed. Evaluation indicated that adaptive planning principles were not followed within all courses despite recommendations for change from both WWF-SA and the PMU. It suggested that quality was being sacrificed in the quest for quantitative training targets. An early goal of WWF-SA that indigenous knowledge be recognised and incorporated into training along with Western views of the environment was not carried out by service providers despite its incorporation into ToR.

Results from the tracking system projects produced specific course recommendations that were mostly concerned with the implementation of skills, but were hindered because clear action plans had not been developed for most of the previous courses. A major positive finding

was the extent to which benefits not directly linked to knowledge gained were obtained, including improved relationships, better understanding of the views of others, self confidence and improved skills in presentation, communication and conflict resolution.

Whilst internal Programme issues caused delays that impacted on the environmental training component, external constraints such as poor transport and communication systems, severe weather, poor literacy levels in the region and a social authority undergoing transformation also impeded the implementation of recommended training plans.

The paradox: conflicting approaches

This development programme attempted to integrate environmental training using commendable approaches; they tried to implement an adaptive planning, needs-based, bottom-up approach to training and invested in not only monitoring and evaluation but also tracking exercises to permit feedback to the planning of training. In practice, however, feedback was not easily incorporated within the Programme, especially over the latter half of the Programme.

In addition to mechanical failures, there were tensions between the ethos of the desired training approaches and the need to fit training into the logframe. The tensions between the Programme structure and the adaptive, participatory requirements of environmental education are illustrated by the discourse used. Initially the Programme referred to recipients of training as passive 'trainees', but later they were acknowledged to be 'learners'. Only in one course, an extended workshop on legislation for natural resource management, were the 'learners' referred to as 'participants'. In many documents they were depersonalised and referred to as 'targets'; in some cases this was in the context of 'target groups' for training.

'Trainers' were more commonly termed 'service providers', a term that implied a technical actor rather than the participatory 'facilitation of learning' desired. The programme referred to the 'delivery of training', with little recognition of the 'participatory methodologies' recommended by the review team and in fact employed by some facilitators. The 'logframe' provided a rigid framework in which true adaptive planning was disrupted by schedules for reports, approval, payments and deadlines. It seemed that the Programme activities were forced by, rather than supported by, the logframe.

As an evaluation team we felt frustration that the potential of the environmental training within the Programme was not being realised. The tension between delivery by deadline and participation/reflection was also mirrored in other events in the Programme (such as the establishment of Trusts) and was felt by the NGOs and PMU coordinators.

In this reflection I now ask three questions: Why was the action-based participatory approach to environmental education not fully adopted by all role players? What were the causes of the tension between delivery and participation? Can we resolve these tensions and successfully integrate environmental training within future development programmes?

Difficulties in implementing the action-based approach

The overall Programme constraints indicated above included the delays in the development of tourism enterprises and co-management agreements that the environmental training was supposed to support. These delays arose partly because of the over-ambitious nature of the

Programme and partly due to complex unforeseen external local impediments, but they certainly strained the environmental training plan because of the asynchrony that grew between training and other activities.

Secondly, Programme training goals were quantitative and not qualitative. The complex structure of the Programme (Figure 1) inhibited the flow of information such that qualitative concerns and on–the–ground experience were difficult to translate into changes in logframe planning and further service provider activities.

Finally, despite the Programme flaws, it did attempt an adaptive training plan and promote the recommended action–based environmental training, yet some service providers did not embrace this strategy. This was partly because of the contextual isolation of service providers contracted to deliver a certain course without sufficient understanding of the broader context of the Programme activities. It also appeared that service providers felt uncomfortable moving from a teaching to a facilitation perspective and from a curriculum development to a problem solving approach. This is a common barrier to the implementation of PAR (Mordock & Krasny, 2001) and may have been exacerbated by the lack of training experience of some of the service providers employed under Programme constraints.

Hence it was difficult to implement the action–based approach because of the complex structure of this particular Programme, with difficulties exacerbated by the inability or unwillingness of trainers, external constraints and tensions between the participatory/reflective/action–based versus delivery/logframe approaches.

Tensions between delivery and approach

Were there factors beyond the attributes of this particular Programme that caused these tensions? In its optimal form, a logframe approach includes participatory planning in its development and extensive room for adaptation, but commonly these aspects are neglected in the application of logframes (Sartorius, 1996). In this case study, a more participatory team approach to planning and space for reflection and true adaptation would have reduced the tensions and made environmental training more effective. However, I argue that the different natures of participatory, action–based environmental learning and logframes mean that even in the best designed programmes, tensions will arise.

Participatory training approaches should be driven largely by internal factors, yet logframes, even with input from local expertise, remain externally driven. Participatory approaches are fluid, and may demand exploration of tangents identified by local needs; they recognise the need to respond to internal issues related to the actions being taken, relationships between players and changes that arise during the course of training. Indeed, a success indicator for PAR is a willingness to alter training as needs arise (Mordock & Krasny, 2001). On the other hand, logframes predict targets and set timetables.

Recommendations for future integrated environmental training programmes

The paradox has been highlighted. So how can future development programmes manage these tensions? Is it possible to successfully undertake an environmental training programme promoting participation and action–based training as part of an externally funded, donor–driven

development programme? I argue that it is, and that it should be encouraged. In company with others, I suggest that the environmental imperatives in developing countries are such that environmental education should be action-based and should combine problem solving and capacity building (Blanco, 2002; Castillo *et al.*, 2002).

In this case study, the tensions had negative impacts, limiting the extent to which participatory processes could be implemented. An uneasy and unacknowledged compromise was reached between the two approaches, with the logframe process seeming dominant. However, if carefully managed, there can also be positive aspects from the tensions between approaches. Both approaches have their merits; participatory, adaptive, action-based environmental training is well documented to have benefits, and the support of a framework that can link training to initiatives, thereby grounding it and sustaining its momentum, can be beneficial. The broad nature of environmental education means that a strategic framework within a context is required for it to be effective (Fien *et al.*, 2001) and limited resources can be effectively allocated to priority training goals. Even in this case study, some advantages of both approaches were observed. The Wild Coast of South Africa is a difficult place to implement a development initiative for the bio-physical and social reasons already outlined. Without a timeframe, it is possible that attempts to perfect the approach in each course would have been delayed by people, place and circumstance to the extent that little was achieved. Perhaps it was better to have achieved substantial amounts of non-optimal training under pressure from the logframe approach than to have only undertaken a minimum of training that fulfilled completely all of the participatory, action-based requirements.

But had the tensions been acknowledged, a process more accepting of the participatory approach would have occurred, and an insistence on participation, adaptation and appropriate action would have altered the Programme rollout such that other aspects would also have benefited.

A framework for integrated environmental training within a development programme

To consolidate the lessons learnt, I offer a framework for use by future development or conservation initiatives, particularly but not exclusively those in developing countries, to enhance a combined approach to capacity building and environmental management (see Table 2).

The literature on development programmes is extensive; this framework expands on lessons learnt in this case study to emphasise particular points and is not intended to comprise an exhaustive checklist. In recognition that the logframe approach adopted by the Programme in this case study was a potential strength, I suggest retaining it, but greatly increasing the participation in its planning and continual adaptation and recognising and exploiting the tensions between approaches that will emerge.

The development programme itself must meet the needs of the local communities and national agenda and hence requires a bottom-up, collaborative approach to determination of goals and significant participation of local structures within it. Too often development programmes, especially those addressing environmental issues, reflect the agenda of the donor country or funder (Rathgeber, 1995). This framework proposes participation of local bodies in the initial planning stages of the programme, plus an early assessment of environmental training

Table 2. A framework for integration of an environmental component founded on action–based environmental education into a sustainable development initiative

Programme Development Step	Actions Towards Action–Based Environmental Education
Planning of development or conservation programme	Participatory appraisal of livelihoods. Preliminary training needs analysis linked to activities. Explore need for capacity building of local institutions. Preliminary analysis of available trainers. Explore sustainability options for skills and activities.
Design structure of development programme	Ensure simple structure. Include local practitioners in participatory planning process. Embed in local government, link to regional and national drivers. Combine local coordinators with external expertise as required.
Develop key performance areas	Include local/national priorities. Include quality as well as quantity-based goals.
	Each task should be an action for which a capacity building element is required. Ensure monitoring processes are prominent.
Set up adaptive planning framework	Ensure targets are realistic. Ensure time for reflection and adaptation. Allow for meetings and feedback points. Agree on payment and reporting schedules at all levels.
Environmental education component	Conduct detailed needs analysis. Explore best approach in context (include recognition of indigenous knowledge, promote participation, allow for train the trainer, link training to action). Design training plan (may include foundation course followed by specific training linked to tasks in key performance areas). Take cognisance of other potential benefits (mix groups to strengthen relationships, potential market for skills developed, etc.). Ensure training contextual and on site. Establish monitoring programme with evaluation, feedback, tracking and impact measurement. Strengthen internal evaluation procedures for each training task. Enhance ability of graduates to spread understanding through provision of presentation skills and resources.

needs and the availability of suitable trainers. This could shift the focus of the early parts of the programme to capacity building of local institutions if required. A skills and training needs analysis, including all needs, could at this stage indicate feasibility of the activities identified.

The development programme structure can then support an adaptive, needs-based and monitored training plan with goals linked to activities in the programme. There should be an emphasis on quality rather than merely quantitative targets. These goals and timeframes should be reviewed and if necessary adapted at stages within the programme. Embedding structures within local institutional planning and association with recognised regional goals is important. A simple programme structure would enhance communication processes and regular meetings of key stakeholders would facilitate communication of qualitative issues better than reports.

Investment in an evaluation process that comprises both formative evaluation during the training programme and summative evaluation at its completion (Robottom, 1985) should be made. The formative, monitoring process must combine quantitative methods to provide a general frame that qualitative methods complete (Rovira, 2000), with particular emphasis on the qualitative methods (Schultze, 1991; Robottom, 1985) and is critical to manage and exploit the paradox identified in this paper. Methods could include discussion with course graduates, trainers, local community leaders, government officials and other stakeholders. Results from this evaluation should feed back into the training programme with sufficient time for reflection on learning and space for adaptation based on recommendations. The summative evaluation should also acknowledge the value of non-quantifiable outcomes; many impacts tend to be vague, dynamic and value laden so are difficult to assess (Fien et al., 2001), but if the participatory approach is followed, they will hopefully include important outcomes. The evaluation should expand beyond the measurement of knowledge, attitudes and behaviour proposed by Hungerford and Volk (1990) and Knapp and Poff (2001) to include general life skills, confidence and abilities, relationships, livelihood changes and impacts of the training approach on other aspects of the programme. In this way, long-term social consequences as well as effects on conservation and environmental degradation may be acknowledged.

The advantages of an environmental training programme integrated within a larger development programme should be exploited. Evaluation of this training programme illustrated that action-focussed training enhanced understanding and implementation of learning, as has been proposed previously (Blanco, 2002; Castillo et al., 2002; Layrargues, 2000). Environmental education is a multidisciplinary form of education that can transcend the boundaries of traditional disciplinary teaching (Rathgeber, 1995) and so is better suited than many other forms of education to integrate into a development initiative. Whilst being grounded in action, it has a political character (Layrargues, 2000; Robottom, 1985). Our experience in this case study, and the proposals of many other authors, indicate a much stronger potential role for environmental training than in the provision of technical skills. If a participatory, action-based approach to environmental training is effectively followed, environmental education can become a process of mediating social–environmental conflict (Layrargues, 2000), and, more, can provide a sociological perspective to allow people to improve their livelihoods and adapt to change (Barraza et al., 2003). Provision of such lifeskills and social empowerment goes beyond the capacity of 'traditional' environmental education to combine capacity building and problem

solving functions (Blanco, 2002; Castillo *et al.*, 2002). Whilst extensive debate rages regarding the role/form of environmental education within/for sustainable development (e.g. Reid, 2002; Gough, 2002; Stables & Scott, 2002), I propose that environmental training integrated within development programmes will enhance the sustainability of the development initiative providing the tensions between participatory, reflective, action based and logframe, delivery approaches are managed.

Conclusions

A paradox between the approach of participatory, reflective, action-based environmental education and of the implementation of a logframe-driven development programme was highlighted. It is proposed that in future development and conservation initiatives, this tension can be managed to positively improve the initiative by encouraging an adaptive, participatory approach, yet also enhancing environmental training by ensuring the momentum of training and the linkage between training and environmental problem solving. The additional benefits of environmental education in conflict resolution, relationship building and the development of other lifeskills are acknowledged. A framework for integrating action-based environmental training within development programmes is offered to enhance livelihoods and biodiversity conservation, particularly in other developing countries.

Notes on the Contributor

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