

RURAL DEVELOPMENT FORESTRY NETWORK

BIODIVERSITY CONSERVATION AND LOCAL PEOPLES' DEVELOPMENT
ASPIRATIONS:
NEW PRIORITIES FOR THE 1990s

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This paper first appeared in: '*Biodiversity Conservation: Problems and Policies*', 1994. Edited by: C Perrings, K-G Mäler, C Folke, C S Holling & B-O Jansson. Published by Kluwer Academic Publishers, Dordrecht, The Netherlands.

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ISSN 0968-2627 (formerly Social Forestry Network ISSN 0951-1857)

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SUMMARY

This paper briefly reviews the performance and prospects of projects trying to translate concepts of biodiversity conservation and sustainable economic development into effective on-the-ground activities in developing countries. Now well established among conservation NGOs, this increasingly popular approach has begun to attract substantial funding commitments from international development agencies. Additional funds are very likely to be committed during the 1990s, mainly through the Global Environment Facility (GEF). But despite the dramatic increase in interest, two key questions remain unanswered: (a) What has been learnt about translating the principles of conservation and sustainable development into effective on-the-ground action? and (b) Can the lessons from promising local conservation and sustainable development projects be used to increase the effectiveness of the larger-scale programmes which will be funded by the international development agencies?

Despite numerous NGO projects during recent years, successful and convincing examples where local peoples' development needs have been effectively reconciled with biodiversity conservation remain difficult to find. Community-based conservation has so far generated few approaches which governments or international development agencies have been able to incorporate into their own programmes. Several factors can help explain these disappointing results: (a) Unproven and optimistic assumptions are not being challenged, leading to unclear project objectives; (b) Projects have not been designed in such a way as to generate useful lessons, lacking the necessary inputs from universities and professional researchers; and (c) Important lessons from the field of rural development have been overlooked, especially the fundamental importance of involving local people, the intended beneficiaries, in all stages of projects.

High priority should now be given to testing ways of translating this approach into more effective on-the-ground action, perhaps through a long-term experimental learning process in conservation and sustainable development. This would consist of a small number of participatory conservation projects, specifically undertaken systematically to test and learn from field experiences, including the challenges of scaling up or linking together projects which seem promising at local levels. These experimental projects should reflect an in-depth understanding of the rural development experience, should be adequately funded, should make strenuous efforts to decentralise strategic as well as day-to-day decision-making to local levels from the very inception of projects, should wherever possible be implemented by a mix of NGO and government grantees, should encourage outside evaluation, and should collaborate with applied professional researchers thoroughly to document, analyze and communicate their results – both successful and unsuccessful. Such an approach should also focus on learning and demonstrating the potential for systematic change rather than solving immediate site-specific problems. The most likely organisations to promote and finance such an approach are private foundations, perhaps in combination with the smaller European bilateral aid agencies.

The current donor fascination with biodiversity conservation and sustainable economic development is unlikely to continue indefinitely without some tangible demonstrations of progress. If serious financial support to community-based conservation activities are to be

provided by conventional and mainstream institutions like the GEF, it will be essential to find ways to come up with more concrete conclusions on project design and management, replicability, sustainability and cost-effectiveness during the next few years. Unless existing approaches can be modified on the basis of a realistic view of the constraints being encountered in the field, biodiversity conservation and sustainable economic development is likely to remain no more than an attractive slogan.

INTRODUCTION

Emergence and growing popularity of the new approaches

Reconciling economic development with biodiversity conservation has become one of the most important elements in the search for sustainable development. This problem is particularly acute in remote rural areas of developing countries where biodiversity is concentrated and where poverty tends to be pervasive. Facing a range of development crises with limited public funds, most developing countries have invested little in biodiversity conservation. Partly as a result, fragile and unique ecosystems are being degraded or converted to agricultural use on a large scale. This trend is exacerbated by policies which encourage land conversion and resource overexploitation, as well as a lack of information about the economic value of biodiversity conservation.

Stating the problem in economic terms, the economic value of biodiversity conservation is of little interest if the individuals making land use decisions are unable to capture the economic benefits from conservation (Pearce et al, 1993). In practice, people situated in or near biologically-diverse ecosystems often capture little economic benefit from conservation or sustainable resource use. In contrast, the costs incurred as a result of conservation measures tend to be felt most severely at local levels, especially in the short-term. The net benefits from conservation are therefore low (and occasionally negative) for members of local communities (Wells, 1992).

Measures designed to conserve biodiversity must therefore provide economic incentives to increase the net local benefits from conservation and sustainable resource use (McNeely, 1988). This has meant a new emphasis on finding ways of deriving income from wildlands and biological resources which do not lead to further losses of biodiversity (Wilson, 1992). Beyond the economic principles involved, it is increasingly recognised as neither politically feasible nor ethically justifiable to attempt to deny the poor from the use of natural resources without providing them with alternative means of livelihood. Enlisting the cooperation and support of local people has thus emerged as a major priority of *in situ* biodiversity conservation (McNeely et al, 1990; Wells & Brandon, 1992).

As a result of these concerns, an increasing number of pilot or demonstration projects have been launched in developing countries with the goal of linking biodiversity conservation with improvements in human welfare (McNeely, 1988; Stone, 1991; West & Brechin, 1990). Led by the international conservation NGOs, these projects have mostly been based on innovative land use strategies, including biosphere reserves, multiple-use conservation areas, buffer zones on protected area boundaries, extractive reserves, social forestry and a variety of other approaches. In this paper, these will all be referred to as biodiversity conservation and sustainable economic

development projects¹. These participatory approaches to linking biodiversity conservation with local social and economic development now attract a significant proportion of the international funds available for biodiversity conservation projects. In fact, expansion has reached such proportions that it has become rare to find a forest or park management project proposal that does not talk about local participation in conservation, or link conservation with development (Wells & Brandon, 1993).

International development agencies are committing substantial funds

This message has now reached beyond the NGO community to include the large international development agencies. The US Agency for International Development has financed an increasing number of NGO efforts in conservation and sustainable development since the late 1980s. The World Bank has stated in a recent forestry policy paper that it will "....stress new approaches to management of protected areas that incorporate local people into protection, benefit sharing, and planning....Experimental programmes to test alternative approaches to the participation of local people....will also be financed" (World Bank 1991, p.65). Reconciling local peoples' needs with biodiversity conservation is also a major programme objective of the Bank's first biodiversity strategy, for the Asia-Pacific region (Braatz et al, 1992).

In a further endorsement of the new emphasis on sustainable development, all biodiversity projects of the Global Environment Facility (GEF) are required to include the participation of local communities. The GEF has recently emerged in a very influential conservation role, committing \$300 million to more than 50 developing country biodiversity projects during its three-year Pilot Phase (1991-94) which is being administered by the World Bank, UNDP and UNEP (Reed, 1993). Future GEF phases are likely to be refinanced by the richer nations at similar or even higher levels and – together with the Biodiversity Convention – the GEF seems likely to be the single most important financing source for biodiversity conservation during the 1990s.

Some key questions remain unanswered

The principle of linking biodiversity conservation with sustainable economic development has proven enormously attractive to the NGOs, government departments and international agencies involved in conservation and development. Comparatively large amounts of money have been committed to a variety of projects throughout the developing world, most of which are still in the very early stages of implementation, and much more money is potentially available from the GEF, from bilateral aid agencies (especially USAID), and possibly through the Biodiversity Convention. But in the rush to commit large sums of money and address the urgent problems of biodiversity loss, some important questions have so far received very little attention:

! What has been learnt so far about translating the principles of conservation and

¹ This term is broader in scope than 'Integrated Conservation-Development Project' (ICDP), which has been used to describe projects linking social and economic development with biodiversity conservation **in protected areas** (Wells & Brandon, 1992). The present paper also includes consideration of projects not specifically linked to protected areas.

sustainable development into effective on-the-ground action?

- ! Can the lessons from promising local pilot or demonstration initiatives be used to increase the effectiveness of the larger-scale conservation and sustainable development programmes which will be funded by international development agencies during the 1990s?

TRANSLATING PRINCIPLES INTO EFFECTIVE ACTION

The record so far

Since the mid-1980s, conservation-oriented NGOs have devoted increasing efforts and financial resources to village-level projects in developing countries to demonstrate links between conservation and sustainable development. Most of these ventures have been described as pilot or demonstration projects in recognition of their innovative approaches, limited funds and modest scale. But very few of these projects have so far been able to demonstrate significant improvements in biodiversity conservation which are attributable to, or even connected with, improved local economic opportunities.

Unambiguously successful and convincing examples where local peoples' development needs have been effectively reconciled with biodiversity conservation remain difficult to find. It has become clear that community-based conservation represents an extremely challenging undertaking which has so far generated few clear successes (Oldfield, 1988; Sayer, 1991a; Wells & Brandon, 1992, 1993). NGOs have some very talented and committed individuals doing excellent work in this area. But the most promising initiatives are still no more than that – promising initiatives.

There are several reasons why progress in demonstrating the feasibility of community-based conservation has been limited. In addition to a lack of appreciation of what local participation really involves in practice, most existing NGO projects have been implemented on a very small scale, with little financial support, and with insufficient political backing. The projects have also been confronted, and often confounded, by policy and legal constraints originating far outside the individual projects' spheres of influence (Wells & Brandon, 1992). The very limited human and financial resources available to implement community-based conservation projects have invariably been absorbed in addressing day-to-day site-specific issues. As a result, there have been few opportunities to incorporate the valuable lessons from the field of rural development, only limited use of the latest ecological and social science techniques, minimal attention to monitoring and evaluating progress, and little advancement towards the strategic objective of demonstrating the potential for systematic change on a meaningful scale.

Prospects for conservation and sustainable development in the GEF

Whether or how the relatively large GEF projects (which will range from \$1 million to \$30 million and average \$5.6 million during the GEF Pilot Phase) will manage to involve local people effectively in biodiversity conservation will not become clear for some time. Numerous internal and external evaluations of World Bank and other large agency projects have pointed out the need for a more participatory approach to development. But Bank-financed projects which effectively incorporate local participation are very difficult to find, even though the Bank periodically

reaffirms its commitment to popular participation and well-qualified Bank staff have been at the forefront of analytical work in this area (Wells & Brandon, 1992). One reason for this is that the majority of the Bank's clients – developing country governments – perceive participation and related concepts such as empowerment and decentralisation as threatening their political power.

But a more critical constraint is that participatory projects take a long time to plan, they need substantial management inputs and they require relatively small amounts of money to be disbursed slowly over long periods. This makes them unattractive to an organisation which measures success by the volume of new projects which it generates. Given these constraints, effective local participation in more than a handful of the GEF Pilot Phase biodiversity projects is unlikely, and the staff of the large agencies will be looking for ideas and models to improve on this performance in the design of their future projects.

But these constraints do not give the whole story. Surprisingly few of the GEF biodiversity projects are attempting to copy, build on or simply finance existing conservation projects – even those GEF projects which are specifically designed to elicit community involvement in conservation. This suggests a lack of successful – or even promising – conservation initiatives. It implies that the wave of recent conservation NGO-inspired projects attempting to link biodiversity conservation with sustainable development have so far generated few models which development agencies or governments perceive as being potentially applicable on a larger scale with greater financial support.

EXPLAINING THE RELATIVE LACK OF PROGRESS

The practical reality of project experience has so far fallen short of the hopes and expectations for biodiversity conservation and sustainable economic development. This is in contrast to some optimistic plans and claims, and despite the efforts of the many extraordinarily talented and dedicated people implementing field projects. Several factors can help explain projects' generally disappointing experience to date.

Unproven and optimistic assumptions are not being challenged

! Biodiversity conservation is generally compatible with sustainable economic development

It is far from clear what trade-offs and choices need to be made in reconciling development with conservation (Brandon & Brandon, 1992). In conservation circles it has become fashionable to take it for granted that social justice and economic development are necessary preconditions for conservation (Soulé, 1991), and that biodiversity conservation in the tropics is *de facto* compatible with sustainable economic development. But simply to assume that people will be more inclined to conserve local biodiversity if their living standards improve or that there are always ways to improve local incomes without depleting biodiversity is, at best, naive. In the haste to demonstrate some progress, many new programmes have been launched without adequate research or reflection on the circumstances in which biodiversity conservation and sustainable economic development are compatible, or even how these terms should be defined (Redford & Sanderson, 1992).

This is more than an academic debate. Many biodiversity projects which have broadened to focus on local economic needs have lost sight of their original conservation goals and are unable to establish a coherent link between their conservation and development activities. In these circumstances it is often impossible to determine whether local development initiatives have a negative or positive impact on conservation. It is essential to clarify whether projects are attempting to improve local welfare through economic development as a principal objective or, more simply, as a means of enhancing biodiversity conservation (Brandon & Wells, 1992). This distinction, which most existing projects have simply passed over, has profound implications for project design and implementation.

! A project-based approach can achieve conservation and sustainable economic development

A project-based approach has inherent limitations which are often overlooked. Factors leading to the loss of biodiversity include public ownership of extensive areas of land, unmatched by the capacity of government agencies to manage the land; powerful financial incentives that encourage resource overexploitation; as well as laws, policies, social changes, and economic forces over which poor communities in remote rural areas have no influence. The inability to change the parameters of the environment in which they are operating is a serious weakness of most projects. Even under the best of conditions, projects centred on areas of high ecological value and targeting local populations can play only a modest role in mitigating the powerful forces causing environmental degradation. When these projects are also trying to develop new approaches with small budgets, inexperienced implementing organisations and limited access to usable technology, and when the projects are constantly struggling for official recognition, their ambitions must realistically be limited (Wells & Brandon, 1992). Individual projects must therefore be recognised as one component of broader-based conservation programmes that also include a variety of policy and institutional initiatives.

! NGOs working alone can implement effective conservation and economic development projects

NGOs usually seem better than governments at using people-oriented approaches to environmental conservation. In practice it is common for conservation NGOs to try to ignore government agencies, to work around them, or to target sites which are so remote that the agencies have little interest in what happens there. This is sometimes the only way to get anything done without getting bogged down in bureaucratic disputes over jurisdiction and authority. For many good reasons, NGOs will undoubtedly continue to be the driving forces behind biodiversity conservation and sustainable economic development projects. But relying exclusively on NGOs can place some important limitations on development and conservation programmes (Wells & Brandon, 1992). Many of the strengths for which NGOs are acclaimed can also be serious weaknesses – ‘small-scale’ can merely mean ‘insignificant’, ‘politically independent’ can mean ‘powerless’ or ‘disconnected’, and ‘innovative’ can mean simply ‘temporary’ or ‘unsustainable’ (Annis, 1987).

The fact that the vast majority of the world's financial resources for conservation and development flow through government channels – and the GEF is no exception – underscores the importance of finding ways to encourage government agencies to adopt and implement participatory and

environmentally-friendly strategies. Projects emphasising local participation often cannot succeed without the basic services that only government can provide on a necessary scale – such as education, health care and infrastructure. Every effort must therefore be made to constructively engage government agencies in biodiversity conservation and sustainable economic development. The growing pattern of interaction between development-oriented NGOs and government agencies is an important sign that such cooperation is feasible (Paul & Israel, 1991).

Projects have placed insufficient emphasis on learning

Labelling small-scale and under-funded initiatives as 'pilot' or 'demonstration' projects does not automatically mean they will generate valuable lessons. In practice there has been an acute shortage of biodiversity conservation and sustainable economic development projects implemented in a way that would allow their experiences to be seriously analyzed and lessons to emerge. Few existing projects have systematically studied or adequately understood the basic biological and socio-economic systems which they are attempting to influence. Changes in biodiversity have tended to be measured in only the very crudest terms – if at all. Even project working definitions of biodiversity often seem inconsistent with the scientific literature. Key socio-economic variables have not been measured or monitored, and little progress has been made in critical new areas such as developing indices to monitor qualitative concepts like local participation. Project objectives stated in idealised or general terms have led to the design of individual components where conservation and development activities often seem unrelated or contradictory, making progress impossible to assess.

Applied research is needed to support pilot initiatives, virtually by definition. Conservation and sustainable economic development projects represent unique laboratories for testing badly-needed new approaches in the social and biological sciences, as well as exploring the all-important overlaps between these disciplines. But universities have generally been excluded from the projects, and independent viewpoints and theoretical foundations have so far been conspicuous by their absence. Innovative and usable biological and social science methodologies are needed to expand our understanding of what is happening in the field, especially in pilot projects. New methods of short-cut and cost-effective methods of gathering and interpreting both socio-economic as well as ecological information gathering need to be rigorously tested. University-based professional researchers therefore have key roles to play in biodiversity conservation and sustainable economic development projects.

Important lessons from rural development have been overlooked

Projects attempting to use social and economic incentives to strengthen biodiversity conservation are likely to involve a variety of activities aimed at eliciting local participation, intensifying land use and increasing local employment, productivity and incomes – in other words, rural development. Rural development is a field with an immense analytical literature and decades of field experience, much of it disappointing. But surprisingly few of the new generation of conservation and sustainable development projects appear to have learnt from the well-documented lessons of rural development or to have drawn sufficiently on organisations and individuals with experience in promoting long-term change in rural communities (Wells & Brandon, 1992).

Rural development is sometimes treated, by the World Bank at least, as synonymous with the huge integrated rural development projects financed by the international development agencies since the 1970s, many of which failed to provide sustained benefits and were later judged failures (Lewis, 1988; World Bank, 1988). But the rural development components of conservation and sustainable development projects have tended to be much smaller in geographic and financial terms than the much-criticised projects of the large agencies. These more recent and smaller projects bear more resemblance to the 'bottom-up' models of participatory development pioneered and tested by organisations such as the Aga Khan Foundation, CARE, Ford Foundation and World Neighbors. The bottom-up approach incorporates many of the lessons from the unsuccessful large agency projects by emphasising building slowly from a small scale, flexible and adaptive management, learning by doing, and – of critical importance – involving local people, the intended beneficiaries, in all stages of projects (see, for example, Bunch, 1982). Eliciting more effective participation in projects has been considerably facilitated by recent advances in shortcut techniques for gathering social information from rural communities (see, for example, Chambers, 1991). But biodiversity conservation and sustainable economic development projects have so far been slow to take advantage of these advances, and most have failed to elicit effective local participation (Wells & Brandon, 1992, 1993).

Eliciting effective local participation in projects is not easy. There are relatively few convincingly successful rural development projects in developing countries. Conservationists are therefore attempting to implement an approach which has challenged experienced development practitioners. An influential study of projects in Asia concluded that the determinants of success in rural development cannot be found in an easily replicable programme variable. Instead, project success is based on "...a high degree of fit between programme design, beneficiary needs, and the capacity of the assisting organisation" (Korten, 1980, p.497). Achieving this 'fit' requires organisations "...with a well-developed capacity for responsive and anticipatory adaptation – organisations that embrace error, plan with the people, and link knowledge building with action." (Korten 1980, p.498). These are all key elements for translating conservation and sustainable development into viable on-the-ground programmes.

WHAT NEEDS TO BE DONE

High priority should now be given to examining and testing ways of translating the growing enthusiasm and commitment to this critical area into effective on-the-ground action on a meaningful scale. Two critical needs have become apparent:

- ! To develop and systematically to test new approaches and methodologies for conservation and sustainable economic development with a re-examination of assumptions and objectives, and a renewed emphasis on local involvement, community organisation, applied research and adaptive learning. These efforts should draw on a wider range of human and organisational resources, and employ the latest techniques from the ecological and social sciences.
- ! To explore ways of influencing the biodiversity conservation investments of large international programmes, especially the GEF, by supporting grantee explorations of the

feasibility, economic viability and cost-effectiveness of conservation and sustainable economic development under a variety of conditions, as well as expanding the influence of promising small-scale initiatives. In practice, this means nurturing promising local initiatives and encouraging their careful expansion or replication towards a scale where they can influence official programmes.

To address these needs, a long-term experimental learning process in conservation and sustainable development is needed. This would consist of a small number of participatory conservation projects specifically undertaken to test and learn from a variety of approaches and experiences, including the challenges of scaling up or linking together cost-effective initiatives which appear promising at local levels.

To take a critical step beyond existing community-based conservation programmes, these projects should reflect an in-depth understanding of the participatory rural development experience, should be adequately funded, should make strenuous efforts to decentralise strategic as well as day-to-day decision-making to local levels from the very inception of the programme, should wherever possible be implemented by a mix of NGO and government grantees, should encourage outside evaluation, and should collaborate with applied professional researchers to thoroughly document, analyze and communicate their results – both successful and unsuccessful. Such a programme would also need to maintain focus on the strategic objective of learning and demonstrating the potential for systematic change rather than solving immediate site-specific problems.

The GEF implementing agencies appear to be constrained from carrying out such a programme by their inappropriate project cycles. These inhibit thoughtful innovation and experimentation, and require large amounts of money to be spent very rapidly, implicitly assuming that the capacity for effective action already exists among the recipients and that only money is lacking. But this is rarely the case. Private foundations and their NGO grantees are the most likely and appropriate implementors, possibly in combination with some of the smaller European bilateral aid agencies which are seriously committed to environmental conservation and a participatory approach to development. In practice, this means the Danish, Norwegian, Swedish and Dutch aid agencies and environment ministries.

ELEMENTS OF A NEW APPROACH

The analysis presented here suggests that biodiversity conservation and sustainable economic development projects are unlikely to be effective unless they embrace the elements summarised in the following paragraphs.

- ! **Involve local people** in all aspects of project consultation, identification, design, implementation and evaluation, including strategic as well as day-to-day management. Draw on indigenous knowledge and technologies. Foster local ownership of and commitment to projects, and stimulate the emergence of local leaders and organisations to sustain project activities.
- ! Clearly **define project objectives** in ecological as well as socio-economic terms. Identify

the various social, economic, political and scientific interests which need to be reconciled (ie, the trade-offs) for these project objectives to be realised.

- ! Develop social, economic and ecological criteria for project **site selection** (within the priority "hot spots"). Be prepared to carry out extensive pre-feasibility work prior to final site selection. Recognise that little can be achieved without strong local political commitment to project objectives and the existence of an **adequate policy and legal framework**.
- ! Mobilise a wide array of **human and organisational resources**. Engage and encourage collaboration between NGOs, universities and government agencies. Be prepared to support the strengthening or reorienting of NGOs to improve their effectiveness. Invest heavily in training people.
- ! Carry out projects in a spirit of **applied research and adaptive learning**, moving often between the drawing board and field testing, making adequate provision for the analysis and communication of results. Involve professional researchers. Explicitly identify the hypotheses which projects are exploring. Acknowledge and learn from failures. Disseminate findings on a timely basis and share information between projects.
- ! Conduct extensive ecological and socio-economic **baseline studies**(a) sufficient to understand local systems, including their external linkages and dependencies, and (b) as a basis for monitoring changes in key variables during project implementation.
- ! Develop quantitative and qualitative techniques and indices for **monitoring and evaluation** (including participatory evaluations), to measure progress against project objectives, to guide project management and to assess progress towards **sustainability** once external project support is withdrawn.
- ! Assess the biodiversity impact of all investments and project interventions designed to generate **local economic incentives** for conservation. Ensure an adequate balance between positive incentives (investments in social and economic development) and negative incentives (policing and enforcement) for conservation. Pay attention to who benefits, how they get to benefit and how much they benefit from project development activities.

DISCUSSION OF KEY PRINCIPLES

Involve local people at all stages

Conservation and sustainable economic development projects are focused on people and on changing human behaviour. It is therefore not surprising that virtually all such projects begin with the intention of addressing peoples' needs through a significant emphasis on local participation. "Putting people first" is a slogan which conservationists have not hesitated to borrow from development practitioners. But so far they have had limited success in implementing it. Although relatively new to conservationists, the importance of local participation has been recognised for some time in the development field. It has been described as "...empowering people to mobilise

their own capacities, be social actors rather than passive subjects, manage the resources, make decisions, and control the activities that affect their lives" (Cernea 1985, 10). In practice, this means involving people in the identification of their priorities and needs, as well as project design, implementation and evaluation.

Participation cannot be treated as a single component of development projects or, by logical extension, of conservation and sustainable economic development projects. Neither is it just a humanitarian appeal for social equity or ethical advocacy. It is a basic requirement for inducing development (Cernea, 1991a). Whenever people do not have a stake in a project, or perceive their stake as diminishing in value, projects fail. Participation must therefore be seen as a fundamental building block and not as just another element of projects (Dichter, 1992). Many so-called 'participatory' conservation projects treat people as the passive beneficiaries of project activities – for example, by hiring them as short-term employees – rather than involving them in real decision making throughout the project cycle (Wells & Brandon, 1992).

Bringing beneficiaries into project planning and implementation requires investments in training, supportive research and evaluation, as well as a staff skilled in catalyzing the social organisation of project beneficiaries (Tilakaratna, 1987; Uphoff, 1991). Participation means bringing people not only into decision making but also resource mobilisation and management. Procedures for introducing participation need to be worked out to acquaint beneficiaries with project objectives at an early stage; to elicit their ideas and suggestions; to encourage and assist in organising and institutionalising participation; and to monitor progress and respond to needed changes in approach. Project implementors must be prepared to give up some degree of control in this process. They must continually ask *who* is participating, *what* are they participating in, and how do they get to participate (Uphoff, 1991), recognising that popular participation is not merely a way of getting people to agree with what projects want to do (Dichter, 1992).

Eliciting increased local participation in projects can be a complex and time consuming undertaking. But the development literature provides extensive treatment of the theoretical issues, social scientists have recently developed usable techniques, and several organisations with experience in grass-roots development have prepared implementation manuals to guide field practitioners. The kinds of institutions that work well to promote participation are also becoming better understood (Carroll, 1992). Conservation and sustainable development projects must develop approaches based on their own specific needs, addressing questions such as: how to elicit participation in specific cultural and environmental contexts; what procedures and methods should be used by planners and managers; and what should be done to organise participation at different stages of conservation project design and implementation.

Some barriers to local participation are common to any development project. Rigid authority structures in many societies inhibit widespread participation in decision making and national governments may limit the extent of local empowerment, particularly where they perceive a threat to their own authority (Wells & Brandon, 1992). But it is also important for conservation and sustainable development projects to work out just how much local participation is consistent with the projects' objectives, and to be honest about the answer. It is easy to overlook the fact that, for biodiversity conservation to be achieved, people can only be empowered in aspects of development, including local resource management, that do not lead to overexploitation or degradation of valued species and ecosystems. In practice this can be very difficult to achieve solely by using economic incentives. There will always be the potential for conflicts of interest between rural people's ability to earn a living and the conservation of areas of high ecological

value. Conservation and sustainable development projects can aim to mitigate such conflicts of interest by promoting alternative income sources and education programmes. But the conflicts cannot be expected to disappear and the need for protection of biodiversity through policing and enforcement – even if this is carried out by local communities themselves – will often be inescapable (Brandon & Wells, 1992).

Participatory projects usually require relatively modest funds to be disbursed gradually over comparatively long time periods. It may be necessary to develop mechanisms that can accommodate slower funding or 'stop and start' funding, allowing for shifts as NGOs grow and as project participants understand better where projects are leading. In particular, mechanisms may be needed to 'park' money temporarily and pause in implementation until NGO absorptive capacity increases or participants reorient themselves (Dichter, 1992). It will also be necessary to finance preliminary investigations of potential project sites without certain knowledge that a project will be appropriate. These considerations are all very difficult for large development agencies to accommodate.

Emphasise adaptive learning

Conservationists should consider borrowing a potentially powerful approach from rural development – the 'learning process' (Korten, 1980). This was conceived as a way of using social science methodologies to organise communities to participate in rural development projects. It is based on the realisation that when new capacities are to be developed, the need is for a process rather than a comprehensive plan. The process must allow for small-scale trial-and-error; continuous examination of village-level work to identify problems, issues and successful approaches; and adjustments in policy, procedures and organisational structures in response to field-level experiences and articulation of changing needs. The process itself must be shaped to develop both the individuals and the organisational systems needed for eventually implementing the new approaches on a larger scale (Bagadion & Korten, 1991). Different versions of this approach have been applied in a variety of rural development sectors although not specifically in environmental conservation.

The learning process requires a certain humility on the part of the implementors. In biodiversity conservation and sustainable economic development, as in participatory rural development, the steps to be taken have not been tried before, and no one knows exactly what they should be. Appropriate methods must be learned through action (Bagadion & Korten, 1991). A key component of the learning process is 'action-research', consisting of actual tests in the field and community planning experiments, a willingness to learn from mistakes, and repeated returns to the drawing board (Cernea 1991b; 1992). The 'product', the new methodology, will be a conceptual framework and a set of procedures, rules and approaches establishing interactions, field assessments and information exchanges between local people and outside experts. Such methodology creation is urgently needed in organisation building at grassroots, to aggregate and enhance individuals' capacities to participate in conservation and development: "high-yielding social organisations are no less important than high-yielding crop varieties" (Cernea, 1991b, p.27). The concept of adaptive learning for natural resource management has been demonstrated in industrialised countries (see Holling, 1978) but has received less attention in the developing world.

Make economic incentives effective

There are now many examples of projects attempting to use local economic incentives for the protection or sustainable use of biodiversity (for examples, see Dixon & Sherman, 1990; Kiss, 1990; McNeely, 1988; Poole, 1989; Sayer, 1991b; Stone, 1991; Wells & Brandon, 1992; West & Brechin, 1990). Other closely-related approaches include extractive reserves (mainly limited to Amazonia) and social forestry and joint forest management (most common in Asia), although none of these have biodiversity conservation as a principal objective. These approaches have been widely discussed in the literature (for examples and bibliographies, see Browder (1992) on extractive reserves; Gregersen *et al* (1989) on social forestry; and the publications of the Ford Foundation in New Delhi on joint forest management).

Promoting development activities that not only improve local living standards but also conserve biodiversity is an enormously challenging undertaking and can create difficult dilemmas for project managers. For example, building an access road may enhance local development by improving access to markets so that local people can sell agricultural products – but experience shows it may also improve wildlands access for activities which threaten biodiversity like hunting, timber cutting and settlement. Improving farming tools or introducing draught animals or new crops may allow farmers to increase productivity – but it may also free up labour which leads to more land clearing and an expansion of the agricultural frontier. Agricultural development may principally benefit smallholders – but the rural landless may represent a greater threat to biodiversity. Subsidising schools or health clinics may build local goodwill for projects – but it is not clear how this contributes to conservation and sustainable local use of biological resources (Wells & Brandon, 1992).

In practice, biodiversity conservation and sustainable economic development projects have supported activities in the several different sectors, although a clear conservation rationale has often been lacking:

- ! **Natural resource management** in agriculture, agroforestry, forestry, irrigation and water control (for crops or wildlife), and wildlife. The goal here will usually be to intensify resource use on the most productive lands, thereby reducing pressure on marginal lands which can be used more efficiently to conserve biodiversity. Land tenure reforms as well as locally-proven technical options for boosting productivity are often critical (Wells & Brandon, 1992). Ironically, this approach means less attention on valued habitats, instead focusing on the productivity of lands already converted to agriculture, logged or otherwise degraded from a biological perspective.
- ! **Exploitation of marketable biological products** including edible fruits, oils, latex, fibres, medicines, bushmeat, hunting trophies, construction materials, and so on (see, for example, de Beer & McDermott, 1989 and Falconer, 1990). The conservation literature (often citing Peters *et al*, 1989) points out that the sustainability of these activities depends on their value being greater than the economic benefits from the next-best alternative which, in the case of tropical forests, is often clear-cut logging and/or conversion to agriculture. But sustainable exploitation limits for biological resources are difficult to determine in ecological terms and difficult to regulate without enforceable local access and ownership rights. Without soundly-based and enforceable harvesting limits, local communities may not be able to derive increased economic benefits from – or perceive any incentive for – conservation or sustainable use.

- ! **Community social services** including infrastructure for schools and health clinics, as well as environmental education, family planning, sanitation and nutrition programmes, especially in areas beyond the reach of government social programmes. Project support for humanitarian social services has been provided as a response to the expressed needs of communities, as compensation for setting aside protected areas or simply as an incentive for cooperating with project conservation objectives (Wells & Brandon, 1992). But the conditions, rights and obligations of such arrangements are usually ill-defined, and formal contracts are rare. There are obvious questions of equity (how much compensation should be provided for protecting how much biodiversity, for how long?) and enforcement (what sanctions can be applied if communities do not protect biodiversity?).
- ! **Nature tourism** or ecotourism has a substantial and well-publicised potential to boost local economies, provide long-term local employment and provide new funds for conservation. But in the absence of needed policy reforms, this financial potential has usually remained unrealised and excessive tourism continues to seriously damage many biologically-diverse and fragile areas which could potentially make substantial contributions to national and local economies (for example, see Wells, 1993).
- ! **Biological prospecting** has so far been introduced only at a few sites in Costa Rica but offers considerable potential to expand our knowledge of biological resources and to provide sustainable commercial opportunities and positive local incentives for conservation. It has also attracted considerable attention from developing country governments, who perceive a valuable opportunity to generate tangible economic benefits from biodiversity conservation. The replicability of the ground-breaking agreement between the government of Costa Rica and the transnational pharmaceutical corporation Merck (described in Janzen, 1992) is one of the key questions in conservation.

Careful assessment of the costs and benefits of project conservation or development activities is necessary, both from the financial perspective of the individuals expected to undertake the activity and from an overall economic perspective based – as far as possible – on analysis which internalises environmental costs and benefits. The net benefits of the potential activity must also be compared to the net benefits other potential land or natural resource use options, to determine which option is most worthwhile as well as which is most likely to be adopted (Barbier, 1992).

Expanding the impact of pilot projects

With very few exceptions, biodiversity conservation and sustainable development projects have been implemented on a small scale – at least in comparison to the magnitude of the problem they are trying to address. Even the most effective projects have therefore had relatively modest impacts on either biodiversity conservation or economic development. If this approach is to make a significant contribution, ways must be found to make a greater impact. The GEF represents a major opportunity to introduce new approaches on a much more significant scale than previously attempted. But what is the best way to influence the design and implementation of GEF and other large development agency projects? Conventional concepts of replication and scaling up are based on the assumption that a blueprint based on local initiatives can be replicated on a large scale by development bureaucracies (Paul & Israel, 1991). But this may only result in more large-scale, top-down failures. Are there other options?

In practice, few promising village-level NGO development efforts develop capacities for sustained action on a significant scale (Korten, 1980). With expansion, the unusual drive and individual leadership associated with local efforts become diffused (Bhatnagar & Williams, 1992), local adaptations and speedy responses become more difficult, closeness to the people and the capacity to get people to participate become harder, and bureaucratisation increases. In other words, scaling up risks precisely the features and strengths for which NGO-led initiatives are valued (Paul & Israel, 1991). Also, government agencies may perceive larger NGO programmes as encroaching on their territory, and erect political barriers.

This is a complex dilemma. Money is not the immediate constraint to scaling-up projects – as the large development agency record clearly shows and the GEF is probably about to demonstrate once again. The local capacity for effective action is a more critical constraint. Scaling-up cannot be attempted in advance of the expansion of local capacities to cope with increased responsibilities and funding. Gradual and careful expansion of pilot programmes should probably only be attempted once projects have gone through early developmental and learning phases emphasising the elements described earlier in this paper. Even during expansion, evaluation of the fit between project objectives, beneficiary needs and organisational competence should continue, the learning process should be re-emphasised, and basic assumptions and objectives revisited often to ensure their continuing relevance.

Demonstrating the feasibility of implementing – and then scaling-up – small, promising biodiversity conservation and sustainable economic development projects is critical. But this cannot be achieved in isolation. For biodiversity conservation and sustainable economic development to be effective on any meaningful scale, more attention needs to be given to at least two additional areas within an integrated programme approach. First, conservation NGOs must recognise that effective government agency participation in project implementation is virtually unavoidable. Second, conservation NGOs must be prepared to pay more attention to analysing and attempting to improve the legal, policy and institutional context in which they are carrying out projects.

PRIORITIES FOR THE 1990s

It can be argued that the community-oriented approach to conservation is too new and the pioneering efforts are at too early a stage in their implementation for clear successes to have emerged. But the current donor fascination with biodiversity conservation and sustainable economic development is unlikely to continue indefinitely without some tangible demonstrations of progress. If serious financial support to community-based conservation activities is to be provided by conventional and mainstream institutions like the GEF, it will be essential to find ways to come up with more concrete conclusions on project design and management, replicability, sustainability and cost-effectiveness during the next few years. Unless existing approaches can be modified on the basis of a realistic view of the constraints being encountered in the field, biodiversity conservation and sustainable economic development is likely to remain no more than an attractive slogan.

ACKNOWLEDGEMENTS

This paper is based on ideas developed during the author's studies for the World Bank's Environment Department and for the World Environment and Resources Program of the John D and Catherine T MacArthur Foundation, although the views expressed should not be associated with either organisation. A considerable debt is owed to discussions over several years with many people but especially Katrina Brandon, Gloria Davis, John Dixon, Jeff McNeely, Alison Richard, Jeff Sayer, Mingma Norbu Sherpa and Michael Wright. None of these should be held responsible for the result.

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Editor of this paper:	Gill Shepherd
Layout:	Ivana Wilson
Printed by:	Russell Press Ltd, Nottingham on recycled paper

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