

# **BIODIVERSITY CONSERVATION: STUDIES IN ITS ECONOMICS AND MANAGEMENT, MAINLY IN YUNNAN CHINA**

**Working Paper No. 5**

**Ranking Inter-country and Inter-regional Requests  
for Financial Support for Protected Areas:  
Environmental Economic Guidelines**

by

**Clem Tisdell**

**March 1994**



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<sup>2</sup> School of Economics, The University of Queensland, St. Lucia Campus, Brisbane QLD 4072, Australia  
Email: [c.tisdell@economics.uq.edu.au](mailto:c.tisdell@economics.uq.edu.au)

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Research for ACIAR project 40, *Economic impact and rural adjustments to nature conservation (biodiversity) programmes: A case study of Xishuangbanna Dai Autonomous Prefecture, Yunnan, China* is sponsored by the Australian Centre for International Agricultural Research (ACIAR), GPO Box 1571, Canberra, ACT, 2601, Australia. The following is a brief outline of the Project

Rural nature reserves can have negative as well as positive spillovers to the local region and policies need to be implemented to maximise the net economic benefits obtained locally. Thus an 'open' approach to the management and development of nature conservation (biodiversity) programmes is needed. The purpose of this study is to concentrate on these economic interconnections for Xishuangbanna National Nature Reserve and their implications for its management, and for rural economic development in the Xishuangbanna Dai Prefecture but with some comparative analysis for other parts of Yunnan

The Project will involve the following:

1. A relevant review relating to China and developing countries generally.
2. Cost-benefit evaluation of protection of the Reserve and/or assessment by other social evaluation techniques.
3. An examination of the growth and characteristics of tourism in and nearby the Reserve and economic opportunities generated by this will be examined.
4. The economics of pest control involving the Reserve will be considered. This involves the problem of pests straying from and into the Reserve, e.g., elephants.
5. The possibilities for limited commercial or subsistence use of the Reserve will be researched.
6. Financing the management of the Reserve will be examined. This will involve considering current sources of finance and patterns of outlays, by management of the Reserve, economic methods for increasing income from the Reserve and financial problems and issues such as degree of dependence on central funding.
7. Pressure to use the resources of the Reserve comes from nearby populations, and from villagers settled in the Reserve. Ways of coping with this problem will be considered.
8. The political economy of decision-making affecting the Reserve will be outlined.

**Commissioned Organization:** University of Queensland

**Collaborator:** Southwest Forestry College, Kunming, Yunnan, China

For more information write to Professor Clem Tisdell, School of Economics, University of Queensland, St. Lucia Campus, Brisbane 4072, Australia or email [c.tisdell@economics.uq.edu.au](mailto:c.tisdell@economics.uq.edu.au) or in China to Associate Professor Zhu Xiang, World Bank Loan Project Management Centre, Ministry of Forestry, Hepingli, Beijing 100714, People's Republic of China.

# **RANKING INTER-COUNTRY AND INTER-REGIONAL REQUESTS FOR FINANCIAL SUPPORT FOR PROTECTED AREAS: ENVIRONMENTAL ECONOMIC GUIDELINES**

## **ABSTRACT**

International aid and funding agencies usually receive more requests to support conservation proposals than can be supported by their available funds and therefore have to rank these. A checklist of questions or factors which may be taken into account by funding agencies in prioritising inter-country and inter-regional requests is given. The mechanics of allocation of funds on the basis of net economic benefits are discussed and limitations of the cost benefit approach are noted. A list of factors likely to favour the selection of particular projects is listed. Communicators should take those into account. The possibility of non-economic and strategic factors influencing the distribution of funds for support of protected areas is discussed.

### **1. Introduction**

International aid and funding agencies supporting conservation are often faced by the need to rank conservation proposals received from different countries and regions. To assign priorities to these is no easy task. In part, the way in which competing proposals are ranked will depend on the charter or aim of the funding organization. Some may have a relatively narrow focus eg. conserving particular species of birds. They are likely to give particular weight to this aspect rather than to more general types of conservation. Other organizations such as the World Bank may have primarily an economic focus.

### **2 Preliminary Questions likely to be asked by Funding Agencies**

Before providing funds for conservation, funding agencies are likely to ask a

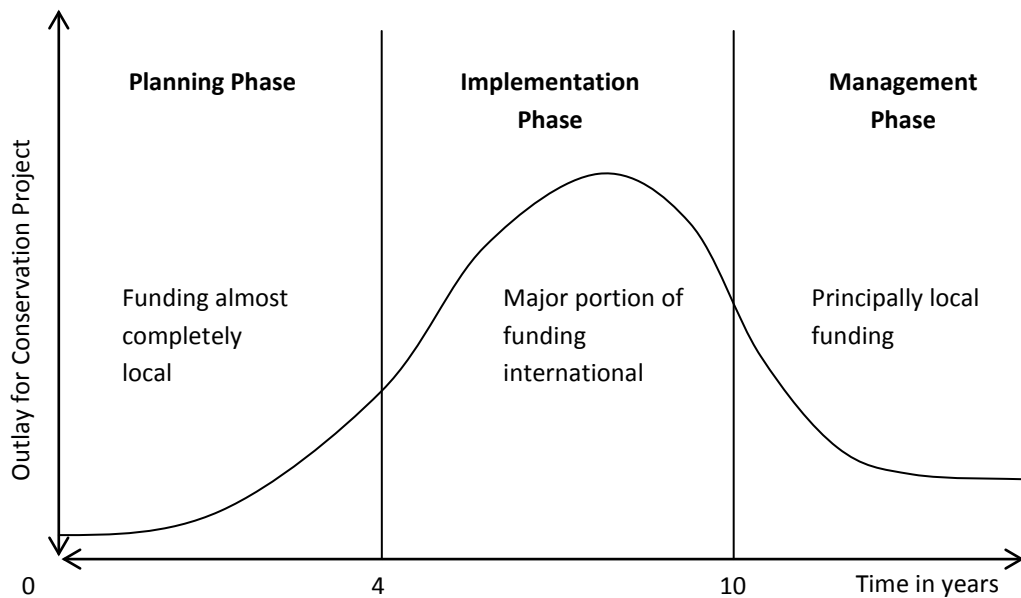
number of questions. These might be expected to include the following:

- (1) Have the costs of the project for which funding is sought been realistically determined?
- (2) Have the objectives of the conservation proposal been clearly specified and the reasons given for seeking the funds?
- (3) Is the success of the project dependent upon funds being available from other funding sources apart from the funding agency being approached? What is the likelihood of these complementary funds being raised?
- (4) Are there sources of funds within the country which could be tapped but have not been tapped?
- (5) Will funding by the agency lead to a significant reduction in financial support from local sources or add to such support?
- (6) What ability do those managing the conservation project have to carry it out successfully?
- (7) Are there good prospects for continuing financial support for the completed project sufficient to maintain or manage it on completion?

If funds are not likely to be available for continuing maintenance of the project after its implementation, then it will not be sustainable. An article in *Ecologica* by Brian Houseal (1992) brings attention to this problem. He claims that there is a typical financial cycle for the establishment of protected areas involving three phases: (1) planning, (2) implementation and (3) management or maintenance.

In his view, the planning stage usually takes 3-4 years with the implementation stage commencing in about the fifth year and lasting 3-5 years. After this, approximately from the tenth year onwards the long term management plan begins and this basically involves maintenance of the project. He suggests that it is only during the implementation phase that international funding is likely to be available as a major source of finance. The planning and management phases must as a rule

depend mainly on local finance. The typical outlay pattern suggested by Houseal for a conservation project is indicated in Figure 1.



**Figure 1: Typical cycle of outlays and funding for conservation projects as suggested by Houseal (1992)**

### 3. Some Observations on Economics and Allocation of Funds

If the benefits of all competing conservation projects could be quantified in terms of say, monetary values, then the process of allocating available funds so as to maximize global benefit would be relatively straightforward. Projects with the highest benefit-cost ratio would be preferred.

However, actual quantification is difficult. For one thing, it may not be possible to quantify all benefits and express these in monetary terms. In such cases, economists traditionally proceed by quantifying what can be quantified and put into monetary values. Using these values gives a first ranking. This ranking may then be altered to take account of values which are not captured by the economic analysis. This allowance can introduce considerable subjectivity. However, in some cases the 'preference' ordering of alternatives based on economic valuations will be the

same or similar to that based on more general considerations. In these cases, the economic evaluation reinforces the general valuation.

In practice, estimates of costs and benefits are likely to be un-certain. One should ask how accurate are the assessments? Furthermore, how sensitive are they to variations in any of the parameters, or the most important assumptions. For example, an economic benefit of a project might be predicted to be an increase in the net revenue from visitors to the protected area. But how sensitive is the predicted increase in net revenue to variation in the predicted increase in visitors to the area?

After such probing, some projects may still have a very high benefit to cost ratio and therefore a high priority. They may be doubly acceptable on economic and other grounds.

While it would not be appropriate to discuss the matter in depth here, the question arises of what data, economic and otherwise should be collected, analysed and presented. There is a need for an appropriate balance in the type of data collected and analysed. Economic assessments are frequently reliant on inputs of biological and non-economic data for the valuation process. Therefore, an appropriate balance in collecting economic and non-economic data and analysing it needs to be struck (Tisdell, 1983).

Furthermore, different types of economic data can be collected and analysed. Some benefits may be tangible, e.g. increased net revenue from visitors, to a protected area and other benefits intangible, eg existence value (McNeely, 1988; Tisdell, 1991; DeGroot, 1992), or benefits may be classified according to whether they are obtained on-site by visiting the protected area or are off-site benefits. For some purposes, it may also be important to specify the level of economic benefits appropriated by: the authority managing the protected area, or by the locality in which the protected area exists or by the nation in which it exists. If benefits on a **global** scale are considerable but the protected area or the host region is unable to appropriate these to any great extent, then there is a strong case for an international subsidy for the area or for adopting economic measures to ensure greater appropriation of benefits by the host region.

Usually, funding for international conservation projects is limited in relation to the demand and available projects. But it is possible due to special circumstances for funding in relations to a particular country or conservation objective to exceed absorptive capacity. In the case of GEF (Global Environmental Facility) Funds from the World Bank for Brazil and Bhutan, it has been suggested that size of these funds and their rapid availability will make it difficult for the countries in question to absorb them most effectively for conservation ends, particularly since the funds are only available for a comparatively short-term—e.g., around three years. From the viewpoint of the countries concerned, less funds per year over a longer time period would most likely be more effective. The funding seems essentially to be donor driven and may be inspired by the political motive of the appealing to the electorate in more developed countries. A trust-type fund or more even funding is likely to be more productive from a conservation viewpoint. Donors should take this into account in their funding arrangements.

In calculating benefits, economists have traditionally put questions of income distribution to one side. Benefits are usually estimated given the existing distribution of income and by initially supposing that a unit of money is of the same value to everyone. At a later stage, weights may be introduced to take account of changes in income distribution. For example, a dollar increase in income for a poor person may be counted as \$1.50 (given a weight of 1.5) compared with an increase of a dollar in income for a rich person. This weighting, however, involves value judgements.

In some cases, it **might** even be supposed that the only benefits that count for this exercise are those appropriated by the citizens in the country in which the conservation project is implemented. But in some ways this is an extreme assumption. A case can be made out for an international funding agency taking into account benefits not only to residents of a recipient country but also to citizens in other countries even if a lower weight is put on benefits to citizens from other countries than on gains to local residents. Within the country, benefits appropriated by the poor might be given a higher weight than those received by the rich. Benefits to those in the park or its vicinity may also be given an extra weighting. It should be noted that there can be a good deal of argument about the



appropriate weightings to assign. However, projects which benefit the poor and those located in or near parks or protected areas possibly should be preferred, given prevailing sentiments

From what has been said so far, conservation projects requiring international financial support are likely to be favoured which have the following features:

- (1) are well presented,
- (2) have capable managers,
- (3) provide benefits for local people especially the poor and those in protected areas or their vicinity,
- (4) are expected to attract continuing financial support,
- (5) provide positive net economic benefits, and,
- (6) are incapable of being financed without international aid.

#### **4. Discussion**

As noted earlier, not all funding agencies are likely to take an economic point of view or even an entirely anthropocentric one in allocating funds. Some may have as their aim to preserve particular life forms. They aim to save those life forms which they find relatively most valuable in relation to the cost involved. In essence, they are philanthropists who impose their values on others by sacrificing their own resources. But even they are affected by economics. For example, a conservation organization may want to save two species, X and Y. However, its resources may not be sufficient to save both. It will then have to make a decision about which species to save if it has sufficient resources to save only one. But if more cost effective management or methods of conservation of the species could be adopted, the agency might be able to save both species. So the economics of management of protected areas and the efficiency of conservation techniques adopted will be of interest even to an agency which has ecocentric rather than anthropocentric goals.

Strategic factors may also influence funding by international agencies. For example, the imminence of the loss may be a consideration. Areas which are under greatest immediate threat may be targeted for conservation support. A number of conservation agencies in the USA have adopted this approach, e.g. they have pushed ahead with proposals for marine national parks in areas where the granting of leases for seabed oil mining have been imminent. At first sight this may not seem to be an economic approach but a realistic political one given the irreversibility factor. However, it can also be regarded as an economic one if the aim of the protection body is to obtain maximum gains from using its available funds or resources for promoting conservation. In pursuing this objective it should take into account the plans, actions and behaviour of other decision-makers in society if it is to be realistic. While timely intervention by conservationists may not stop imminent development, it may enable a compromise solution to be reached.

## 5. Concluding Comments

While economic factors should influence decisions by international funding and aid agencies to support conservation projects, they are unlikely to be sole consideration. To some extent, donors like to impose their own value judgements e.g. in favour of biodiversity *per se* or maintenance of particular species, and are willing to fund projects which they believe have value in that regard. Many funders look on conservation generally or conservation of particular living things as **merit** goods. This must be recognised. Where an individual or group believes that a particular "commodity" is a merit good, they attempt to influence individual free choice in favour of more of the good in question.

Note that some conservation projects may be funded or countries granted funds for these even when the projects are not efficiently managed. Ideally one would like management to be efficient in the sense of achieving results at minimum cost or almost so. But the level of expertise and social structure in some countries may not be such as to make this possible in the time required for the conservation action. Provided a positive net conservation benefit is achieved from this funding, this may be sufficient to justify the project. Up to a point we have

to live with the world as it is, "warts and all", and sometimes fund conservation projects which are executed less efficiently than is possible.

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