

GOVERNANCE AND ECOSYSTEM MANAGEMENT FOR THE CONSERVATION OF BIODIVERSITY IN DEVELOPING COUNTRIES

B. Manos, S. Arampatzis, A. Terry, O. Papadopoulou, J. Papathanasiou
Aristotle University of Thessaloniki, Department of Agricultural Economics, 54124,
Thessaloniki, Greece,
Tel (+30) 2310 998805, Fax (+30) 2310 998828, Email manoseb@agro.auth.gr

ABSTRACT

This paper was developed in the context of the research project entitled GEM-CON-BIO (Governance and Ecosystems Management for the Conservation of Biodiversity), which is a European FP6 funded project under Priority 7 – Citizens and Governance in a Knowledge-Based Society. Its strategic objective is to explore the interactions between governance modes and sustainable development objectives in view of identifying what governance processes and institutions can best contribute to the conservation of biodiversity.

To achieve its objective, GEM-CON-BIO investigates types and modes of governance that are related to biodiversity conservation and sustainable development, identifies the critical characteristics and threshold factors that exist in the environment of an ecosystem management authority (environmental, social and economic factors), as well as who controls them, and conducts research on a range of thematic and case studies, with particular emphasis on innovative and market-based approaches to govern the use of ecosystems and individual species. GEM-CON-BIO explores these relationships between communities, their access to natural resources and the conservation of biodiversity in countries both inside and outside the EU.

Especially for developing countries, the sustainability of the use of natural resources is crucial to their economic development. As countries go through rapid development with the assistance of the EU and EU member states, they are putting an increasingly large pressure on their ecosystems, both in terms of resource extraction and infrastructure development. Communities rarely see the benefits of this development, but experience the disadvantages in factors such as lack of food security.

Specific GEM-CON-BIO case studies in developing countries explore the relationship between the governance of natural resources at the community level, the equitable sharing of costs and benefits, and the protection of biodiversity. Furthermore the case studies aim to influence policy decisions at the local level in their respective countries by developing materials in local languages.

Research will draw conclusions on the strengths, weaknesses and impact the governance structures had in each case, and assess the transferability of best practices to wider contexts. A participatory process through a science-policy interface will lead to the development of a set of policy guidelines applicable at different levels of government and in a variety of biodiversity contexts.

Results will be disseminated to those involved in the formulation, implementation, monitoring and evaluation of policies - at the international, national, regional and local level, involving public authorities, legislators and citizens and their organisations.

Keywords: governance, sustainable development, ecosystem management, biodiversity

INTRODUCTION

This paper was developed in the context of the research project entitled GEM-CON-BIO (Governance and Ecosystems Management for the Conservation of Biodiversity), which is a European FP6 funded project under Priority 7 – Citizens and Governance in a Knowledge-Based Society. Its strategic objective is to explore the interactions between governance modes and sustainable development objectives in view of identifying what governance processes and institutions can best contribute to the conservation of biodiversity.

When looking at the global use of natural resources, Europe has a special place. The long history of landscape modification to use them either for production of foods or materials led to rapid declines in the species that inhabit these landscapes and in the ability of ecosystems to provide goods and services [1]. Elsewhere in the world, Europe increasingly had major impacts on biodiversity, either through the introduction of alien species (both intentionally and unintentionally) and through the trade in products. Now Europe has a vast ecological footprint on the rest of the world. The EU is the world's biggest trading block and, together with its Member States, by far the largest provider of development aid. Through its overseas regions and the overseas territories of some of its Member States, it also has huge responsibilities for the conservation of biodiversity worldwide.

On the site of the developing countries, there exist far larger rural communities than Europe and these communities are far more reliant on the direct use of natural resources. Furthermore developing countries generally have extremely important stores of biodiversity or ecosystems. This presents a classic conflict between communities who need and use natural resources, the development objectives of regional and national authorities and the need to protect these stores of biodiversity.

MATERIALS AND METHODS

The link between Natural Resource Use and biodiversity in Developing Countries. Developing countries, quite correctly argue that natural resources provide one of the essential components of their strategies for development. Recently the global community, both international organisations and donors, have identified poverty alleviation as one of the most important issues in global development assistance. The Millennium Development Goals call for the halving of people living in extreme poverty by 2015. In a very prescient observation, Sanderson and Redford [2] identify that, “achieving the goal of liberating half the world's poor from their poverty by 2015 will either mark the true beginning of sustainability or the end of biodiversity at the hands of best-intentioned policies”. In fact, when we look at the interaction between the concerns for biodiversity conservation and the agenda for sustainable development, we see that conservation issues have all but disappeared or have been ‘mainstreamed’ into development agendas. On one level this is entirely correct in that biodiversity should provide the basis for development and poverty alleviation. Also a recent analysis by the Poverty Environment Partnership found that environmental assets account for 26 per cent of the wealth of low-income countries – compared to only 2 per cent in OECD countries [3]. Well functioning ecosystems that are managed sustainably will provide clean water, protection from extreme weather events, and food [1]. In many cases, natural disasters have been caused or exacerbated by the complete degradation of natural landscapes and ecosystems.

Therefore, there is need for new approaches and strategies to bridge the development and conservation needs in the developing countries. Sanderson and Redford [2] identify that

conservation should be treated as a partnership opportunity for poverty alleviation. Long-term field conservation in small communities in fragile ecosystems can and does sustain biodiversity, as well as supporting vanishing folk ways, languages and communities [4].

The rise of co-management in developing countries. From the early 1990s, a form of governance called co-management of natural resources (CMNR) has become an increasingly visible governance option for natural resources under common property, communal property or mixed property, and has been increasingly "adopted" in a variety of settings. Co-management is based on the recognition of a multiplicity of entitlements and/or valid claims of social actors interested to have a say in the management of a given body of natural resources. It implies a partnership among such actors, and a process by which they negotiate management agreements and institutions among themselves. The partnership can involve local communities, organised resource users, local authorities, governmental agencies, non-governmental organisations, private operators, and many others. Among such stakeholders, primary attention has to be given to indigenous peoples and local communities.

Conservation and Human Equity. There is an argument that conventional conservation approaches have harmed local communities. The rapid increase in the designation of protected areas has led to the displacement or dispossession of millions of people around the world and until recently international agendas took little account of the role of local communities [5]. For the World Conservation Union (IUCN) the need for social equity is embodied within its mission, "to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable". Therefore, wherever possible, indigenous people and local communities have to be directly involved in the costs and benefits of conservation.

However, it is also not clear, to what extent co-management experiments have helped communities to find a legitimate role in deciding about natural resources, or to what extent such experiments have prevented harming and impoverishing indigenous people or ensuring a better respect of human rights. In some cases co-management processes may have even "hurt" communities, for example in bringing land that had been theirs by customary rights into the public domain or helping introduce "alien" stakeholders who carved out new entitlements over the resources of historical "rightholders". In general, it is thus not clear whether co-management efforts "perform" in terms of both sound environmental management and lasting improvements in the livelihood conditions of the relevant communities. Can we thus affirm that co-management has "improved" the governance of natural resources? Moreover, avenues other than co-management may be equally or more effective, rapid and/or long-lasting in effectively managing natural resources and mainstreaming equity, accountability and environment-related rights. For instance, how do co-management experiences fare when compared with specific legal procedures, top-down policy change, well-organised and media-backed civil disobedience (e.g., land occupation), union-supported movements or even outright collective buying of land and natural resources, possibly with the help of third-party financing? These different avenues refer to different forms and scales of interventions, and may be hardly comparable. Their analysis, however, can shed light on ways to improve natural resource governance, provided that the questions are asked and answered by people directly involved.

The Role of GEM-CON-BIO. It is this interaction between the rights and responsibilities of the three main stakeholder groups: national authorities, civil society and local communities that is at the heart of GEM-CON-BIO. The governance of natural resources is a fairly new topic on the international agenda and it has a broad perspective looking at institutions, structures, processes and behaviours, and then all the interactions between them. Numerous studies have shown that it is not only what structures and processes are in place that is important, but also how the different stakeholder groups interact within these. For example, low trust among the local communities of the management authorities will lead to little consultation and increases the likelihood the attempts at collaborative management will fail. However, there are a number of reasons why trust may be low, and there are a number of actions that can be taken to improve this situation.

The World Parks Congress in 2003 in Durban developed a set of principles in relation to the governance of protected areas around a rights based approach. As yet there is still little information concerning the protected and non-protected areas that are under forms of community management. But it has been estimated for example that between 400 and 800 million hectares of forested land are under community ownership or administration [5].

GEM-CON-BIO is a case study based project. The theoretical concepts that are currently being constructed will be tested and observed in a series of case studies from Europe and developing countries. This approach provides the project with a strong basis from which to make conclusions and recommendations on the interactions between governance processes and the management of natural resources.

General Methodology. GEM-CON-BIO aims to form a strong link between work on the governance of natural resource in developing countries and that in Europe. Two-way feedback for information has been identified. Each of the case studies will contain a review component that will assess the historical situation in the specific area. This information will feed into the development of the models for GEM-CON-BIO. Also the results generated within the European work will be applied within the case studies in the developing countries. Some of the benefits of this approach include:

- The case studies will build strong links between conservation and the governance of natural resources in developing countries and Europe.
- The issues covered in the developing countries will build strong links between NGOs and researchers in Europe and the developing countries, facilitating the future exchange of knowledge.
- European experts will benefit from the wealth of experience and information from the situations faced in the developing countries.
- The Case studies in the developing countries will benefit from the experience and support that can be provided from European researchers.
- The exchange of information and data will raise the profile of innovative governance regimes and will hopefully lead to the improved conservation of sites within the world's biodiversity hotspots.

In each case study, work will be conducted at the local level with experts from the region. Following a project workshop in September 2006, 9 case studies from the developing countries have been selected:

- The Danau Santarum National Park, Indonesia.
- The Parapeti River Basin, Bolivia
- Nagaland and Orissa, India

- Sarstoon Temash National Park, Belize
- The Gobi Gurvan Saikhan National Park, Mongolia
- Ngöbe-Bugle region, Panama
- Himalayas, Karakoram and Hindukush mountain ranges of Pakistan
- Peruvian Amazon
- Kwa Kuchinja, Tanzania

The selection is based on the following criteria:

- Importance of the area or areas to the conservation of global biodiversity
- Presence of community structure within the case study sites – case studies initially selected have a diverse and well understood community structure.
- Importance of natural resources to the daily lives of these communities.
- Knowledge of governance structure and history.
- Success and failure of governance types. Case studies were chosen to reflect both successes and failures in the regimes used to manage natural resources.

Case studies methodology. Each of the Case Studies will follow a similar approach to ensure consistency. They will be implemented according to the model “Plan-Collect-Analyse-Adapt” that is a standard benchmarking implementation process. The project will focus on identifying best practices and providing recommendations for best policies.

1. Plan: Design the project around the key issues
2. Collect: Identify best practices and collect data
3. Analyse: Compare performance and identify areas for improvement
4. Adapt: Implement best practices and monitor the project

The duration of the case studies performed in the developing countries will be one year. Each of the case studies will have the following general structure:

Phase 1: Initial data collection

- Basic description of the area or set of natural resources
- Current governance setting (in particular describe whether and how co-managed or community managed) and official tenure status
- Status of biodiversity
- Management objectives and main issues
- Relevant governance issues, e.g. rights of indigenous and local communities, conflicts, collaboration etc.
- Relevant concerns regarding landscape, habitats and species, e.g. landscape ecology, resource extraction etc.
- Relevant socio-economic concerns, e.g. problems of the local communities, markets, illegal and legal operations, etc.

Phase 2: Field Studies

- Visits made to the specific sites
- Participatory survey made of natural resource use and management
- Data collection primarily through interviews with stakeholders – special importance will be placed on the relationships and interactions between the key players in the management of natural resources

- Workshops will be arranged towards the end of the case studies to discuss the results and share experiences. Feedback from these workshops will be fed into phase 3.

Phase 3: Data analysis

- Implementation of the GEM-CON-BIO project results from Europe in the case study areas in the developing countries. This will see the application of data that is being generated in Europe to the developing countries case studies.

Phase 4: Communication and Dissemination

- Each case study will produce a single report (in English and in the native language) to be shared with project partners and the research community
- Peer reviewed articles. Partners will aim to also produce articles for journal publication.
- Audio-visual material – videos are an important way of sharing information with stakeholders in the area, and will provide a very useful tool to document the situations faced in each country.
- Policy recommendations – these will constitute locally relevant policy recommendations made to regional and national authorities.
- General communications materials both for the local community which is extremely important and also for the European community.

RESULTS AND DISCUSSION

The GEM-CON-BIO research project aims to answer fundamental questions and develop innovative approaches to the management of natural resources in the developing countries. The following sections provide a preliminary summary of some of the issues that will be assessed in order to provide the required results:

- Access to natural resources for local communities. Often states declare areas to be protected, which have communities dependent on the natural resources found there. Many of these areas are managed for protection and production. But the production benefits large companies and not local communities. In contrast, the communities have reduced access to resources and, in many cases, are forcibly moved from protected areas. Land quality often also decreases in responses to intensive production oriented management policies.
- The role of women in poverty alleviation and biodiversity conservation. In many societies women occupy an important position in relation to the use of natural resources.
- Lack of clear management structures. When authorities are put in place but do not have a clear mandate they can create ambiguity in the management of areas. This can have the result that illegal activities flourish. This situation is experienced in the Danau Sentarum National Park in Indonesia where illegal logging is reaching extremely high levels. Collaborative management offers one alternative solution.
- Human rights issues. Many communities become ‘marginalised’ and involving them in resource management without the specific authority of their patrons or large landowners becomes difficult.
- The territorial and political rights of different groups change and are also recognised or ignored by government agencies.

- Conflict is often used for political interests with local communities forced into the middle.
- Lack of public or political awareness as to the issues faced by communities.
- Increasing commercial interest and exploitation of natural resources is aided by divisions between communities and the national or regional authorities.
- A lack of understanding of the important environmental issues at the community level, can allow people to take short term decisions that will have negative impacts on their future security.
- The presence of legislation is not enough. Many countries have legislation for co-management or the respect of land tenure in place. But it is either poorly implemented or not at all. Translating the policy into effective action is very important.
- Coordination among different agencies and the different stakeholder groups is also important. Otherwise there can be too many initiatives and interventions that never become implemented. Also people need to understand the legislative processes that can empower them otherwise they will not feel that they have real ownership.
- Different regions are often managed under different legislative tools, especially when protected areas are involved. The case studies will look at the implementation of these different tools.
- In many of these areas, tourism can provide a significant source of revenue. But managing this and the associated services so that income is provided to local communities requires special attention.

The results of the case studies will be developed into reports in local languages and English, policy documents and broad communications materials. The results will improve/initiate the communication with local stakeholders, the international community and the development cooperation community (e.g. DG Development and EuropeAid in the EU) to show how biodiversity conservation and development assistance can be better integrated at the local level in developing countries.

CONCLUSION

The research project GEM-CON-BIO identifies as its starting position that biodiversity is the basis for the successful provision of ecosystem services on which humans rely and therefore a key component of sustainable development. Removing the capacity for these services to be delivered has immediate short-term impacts (such as flood protection) and also significant long-term impacts (e.g. ability to respond to climate change).

Many developing countries are going through massive economic development. The sustainability of the use of natural resources is crucial to this development. However, the rapid expansion is mostly happening at the cost of natural resources which are being used either directly to generate revenue (e.g. forestry or fisheries) or enabling the generation of revenue (e.g. ecosystem services). Communities rarely see the benefits of the development, but experience the disadvantages in factors such as lack of food security.

GEM-CON-BIO carries out specific case studies in developing countries exploring the relationship between the governance of natural resources at the community level, the equitable sharing of costs and benefits, and the protection of biodiversity. The research is focused on the interaction between the rights and responsibilities of the three main stakeholder groups: national authorities, civil society and local communities. A common approach of “Plan-Collect-Analyse-

Adapt” is adopted for all case studies in order to ensure consistency and illustrate the different conditions found in each of the regions.

Based on the fact that there is a strong link between the use and management of natural resources in Europe and that in developing country, GEM-CON-BIO uses a two-way feedback for information. Each of the case studies performed in developing countries will feed information regarding the historical situation in the specific area into the framework developed during the European research. On the other hand, the results generated within Europe will be applied within the case studies in the developing countries. This process will assist forming a strong link between work on the governance of natural resource in developing countries and that in Europe. GEM-CON-BIO will therefore develop recommendations and new knowledge as to future changes to the management of natural resources in the developing countries.

ACKNOWLEDGEMENTS

This research of GEM-CON-BIO is supported by the European Commission DG Research, coordinated by the Department of Agricultural Economics of the Aristotle University of Thessaloniki, Greece, and supported by all the partners of the GEM-CON-BIO consortium. More information can be found at www.gemconbio.eu.

REFERENCES

- [1] Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, DC.
- [2] Sanderson, S. E., and K. H. Redford. 2003. Contested relationships between biodiversity conservation and poverty alleviation. *Oryx* 37:389-390
- [3] Hamilton, K., Ruta, G., Markandya, A., Pedroso, S., Silva, P., Ordoubadi, M., Lange, G-M, Tajibaeva, L., Gronnevet, L. and M. Dyoulgerov. 2005. Where is the Wealth of Nations? Measuring Capital for the 21st Century (Washington, DC: World Bank).
- [4] Redford, K. & Padoch, C. (1991) Conservation of Neotropical Forests: Building from Traditional Resource Use. Columbia University Press, New York, USA.
- [5] Borrini-Feyerabend, G., Pimbert, M., Farvar, M.T., Kothari, A. & Y. Renard. 2004. Sharing power: learning-by-doing in co-management of natural resources throughout the world. IIED and IUCN/ CEESP/ CMWG, Cenesta, Tehran, 2004.