

The EfD Initiative in South Africa

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Use of economic incentives in bioregions workshop

22-23 October 2008

Kirstenbosch, Cape Town



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Environmental Policy Research Unit



The EfD Initiative

- EPRU is a **research unit** at the University of Cape Town whose mission is to use environmental and resource economics to **enhance environmental policy-making** in Southern Africa through rigorous training, research and policy outreach
- EPRU seeks to enhance the interaction between academics, policy makers and civil servants in the environmental policy arena
- EPRU was set up as part of an international network: the Environment for Development (EfD) Initiative, which is funded by Swedish International Development Cooperation Agency (SIDA) for an initial 3 years (2007-2009) to the tune of R45m
- Its overall objective is to support poverty alleviation and sustainable development, through increased use of environmental and resource economics in the policy making process
- The EfD initiative builds on 15 years of Sida-supported capacity building in environmental and resource economics



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The EfD Initiative Centers

- *Environmental Economics Program*, Peking University, China
- *SEBSA*, CATIE, Costa Rica
- *Environmental Economics Policy Forum for Ethiopia*, EDRI/AAU, Ethiopia
- *Center for Environmental Economics Policy in Kenya*, KIPPRA/Nairobi University, Kenya
- *Environmental Policy Research Unit (EPRU)*, University of Cape Town, South Africa
- *Environment for Development Tanzania*, University of Dar-es-Salaam/NEMC, Tanzania

Other International Collaborators

- Centre for Environmental Economics and Policy in Africa (CEEPA); Environmental Economics Unit (EEU) in the Department of Economics at Göteborg University; Resources for the Future (RFF)



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Themes that EfD works on

- Fisheries economics
- Agricultural productivity and soil conservation
- Biodiversity/wildlife conservation
- Economics of forestry
- The economics of climate change



People at EPRU

- Beatrice Conradie (research fellow)
- Tony Leiman (research fellow)
- Edwin Muchapondwa (research fellow)
- Jane Turpie (research fellow)
- Martine Visser (research fellow)
- Kerri Brick (junior research fellow)
- Johane Dikgang (junior research fellow)
- Byela Tabesigwa (PhD student & junior research fellow)
- Josephine Musango (PhD student & junior research fellow)
- Sue Snyman (Mcom student & junior research fellow)
- etc



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Using economic incentives in CORM

- Harry Biggs, SANParks
- Mandy Driver, SANBI
- Frank Matose, University of the Western Cape
- Kevin Moore, SANParks
- Edwin Muchapondwa, University of Cape Town
- Eric Mungatana, University of Pretoria
- Kelly Scheepers, SANParks

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Background on theme selection

- Macro-conservation funding/economics/governances issue – including expanded public works programme
- Bioregionalism – biosphere – NBSAP- multiple land-use – resource values of different options; sustainable resource use
- Ecosystem services - livelihoods, poor people around parks
- Economic values internal to SANPARKS
- Cultural heritage tourism – tourism routes
- Land claims – economic viability of post-settlement
- Damage causing animals – sustainable use issue
- Distribution of benefits to communities especially directly through mechanisms such as gate levies
- Complexity, resilience and adaptive management – large and small parks
- Economic implications of environmental education



Program issues

- We have chosen to work on a theme on the use of economic incentives in bioregions
- The manuscript meant to justify theme as viable
- Now need to come up with the programme portfolio
- Potentially big program which encourages and welcomes collaboration with other academics and ***policy people!***
- EPRU has bread crumbs and the big loaf is locked up in Sweden
- The key that fits into the lock is three-pronged
 - a clear program structure
 - responding to the needs of policy (planning, making, implementation, monitoring, evaluation, reform)
 - at least one of the EPRU people should be involved in any project



Presentation Plan

- Protected areas can't do it alone
- Need for CORM
- Biodiversity is also an economic issue
- Economic incentives crucial
- Response to implementation problem
- Assessing workability of biodiversity plans
- Cost-benefit analysis
- Institutions approach
- The crux of the matter
- The importance of institutions
- Research issues of economic incentives



Protected areas can't do it alone

- biological diversity has traditionally taken place within protected areas
- protected areas are not meeting and may never meet biodiversity targets in terms of representation and persistence despite adequate management within their borders
 - initial protected area placement was not necessarily meant to achieve currently envisaged biodiversity targets
 - protected areas are often parts of larger ecosystems such that land use change in the areas adjoining the protected areas may lead to changes in the functioning and biodiversity within the protected areas
- the first response was management of lands around protected areas along a gradient of decreasing intensity of use towards the protected area boundaries
- but there may be critical biodiversity areas far from the protected areas that are relegated to high intensity use in that approach



Need for CORM

- thus biodiversity conservation ought to take place both inside and outside protected areas, if biodiversity targets are to be met
- given the potential interlinkages of areas inside and outside protected areas and interlinkages of areas outside protected areas themselves, regional landscape/seascape management is needed
- thus **we need some level of conservation-oriented regional management (CORM)** encompassing either the protected or unprotected or both portions of the ecosystem
- managing inside the protected area is relatively easy to arrange – they are already in this business
- but once you are outside you need a way to tackle heightened complexity: strict protection alone has no chance of achieving all of the biodiversity targets
- the challenge therefore lies in getting the areas outside protected areas to contribute to biodiversity conservation – the unconverted!



Biodiversity is an economic issue

- the biodiversity community has called for mainstreaming as the solution
- mainstreaming requires changing the behaviour of economic agents to support biodiversity conservation
- the widely cited mechanism of mainstreaming is effective communication of issues to key stakeholders
- the most effective mechanism of mainstreaming may well largely be economic since biodiversity conservation is also an economic issue
 - biodiversity and the ecosystems, as components of natural capital, provide flows of valuable ecosystem goods and services
 - the norms and practices of market economies have largely alienated biodiversity conservation due to pursuit of “environmentally unfriendly” economic optimization objectives
 - selfish economic agents can not handle public goods, open access resources and non-competitive sources of livelihood



Economic incentives crucial

- many (V-STEEP) factors are likely to be important in determining biodiversity conservation outcomes
- a potentially more effective mechanism for mainstreaming biodiversity conservation might be the use of economic incentives
- economic incentives are potentially capable of correcting market failures in biodiversity conservation by binding economic agents to supporting norms, values, and practices that promote biodiversity
- An effective response to ensure the mainstreaming of biodiversity conservation would include actions such as:
 - greater use of economic instruments and market based approaches
 - the incorporation of nonmarket values in management decisions



Response to implement problems

- we have learnt that SCP is one useful tool that can help us determine which areas (or biodiversity) ought to be conserved
- the use of economic incentives can assist the realization of the goals of a biodiversity conservation programme and avoid implementation problems
- so, we generally need to know the extent to which economic incentives impact on CORM outcomes since biodiversity assets could have any of these characteristics: public good, open access, weak source of livelihood
- we also need to know the exact ways through which these economic incentives impact on regional management outcomes
- therefore there is a need to unravel how (in what ways) to institute economic incentives and over what range of activities



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Assessing workability of plans

- in thinking about establishing and implementing a programme to enhance biodiversity conservation we probably have got two worries
- one worry is that we want to come up with a program of biodiversity conservation that will work
- another worry is that we would want to come up with a program that costs us as little as possible to implement (budget constraint)
- we can investigate the workability of the program using at least two approaches:
 - using cost-benefit analysis we will need to find the costs and benefits and evaluate them – this should tell us whether the program will be acceptable ecologically and economically
 - investigating one type of socioeconomic arrangements called “institutions”, which is directly associated with economic incentives can help us determine whether conservation will be sound



Cost-benefit analysis 1

- in the CBA framework, biodiversity can be seen to be contributing to the production of valuable ecosystem services
- in reality, most decisions are influenced by ecosystem services entering the market such that non-marketed benefits are often lost or degraded
- non-marketed benefits are often high and sometimes more valuable than the marketed ones
- it is imperative that decisions be improved to by considering total economic values of alternative land uses
- also imperative that the relative values of biodiversity conservation experienced by decision making units be enhanced
 - greater use of economic incentives and market-based approaches in biodiversity conservation
 - elimination of perverse subsidies, taxes and user fees for externalities, creation of markets, payment for ecosystem services, biodiversity offsets



Cost-benefit analysis 2

- biodiversity conservation usually compares more favourably to alternative land uses after incorporating the value of ecosystem services
- even if biodiversity does not fare well in a CBA it is not necessarily a cause for concern as it only signals the kind of intervention needed if biodiversity conservation should take place



Institutions approach

- using the institutions approach we will need to analyze the institutions in a particular jurisdiction and judge whether they are conducive for the workability of the program (otherwise institutional change needed)
- “institutions” refer to the (implicit and explicit) rules, norms and strategies adopted by individuals operating within and across organisations and exist in the minds of the participants
- such rules confer a spectrum of rights over biodiversity and determine biodiversity outcomes
- the different bundles of rights can be in terms of rights of access, withdrawal, management, exclusion and alienation of biodiversity assets
- the knowledge of how institutions function in relation to biodiversity assets is thus critical to the (design and) implementation of effective biodiversity conservation



The crux of the matter

- the threat of the lack of biodiversity conservation because of its public good, open access and weak source of livelihood characteristics of biodiversity creates the need to constrain human/enterprise actions
- one could constrain human/enterprise actions by use of (i) command-and-control or (ii) economic incentive instruments
- each of these options is likely to be better in particular circumstances; depends on nature of threat to biodiversity
- command-and-control has the disadvantage of requiring huge enforcement effort (resources) so one could take refuge in economic incentives
- the more biodiversity is conserved through incentives the more resources remain to conserve economically unviable ecosystems
- in many cases a change in “institutions” is all that needs to be done to give economic incentives



The Importance of Institutions 1

- institutions influence the decisions for land use, investment, natural resource use and therefore biodiversity conservation
- with strong tenure biodiversity conservation improves as financial value could approach economic value
- the literature and empirical evidence on how to influence land use decisions outside protected area boundaries is mostly focussed on the engagement of communities in biodiversity conservation
- focus is on the various initiatives aimed at decentralizing decision making
- a group of policies that are closely related to each other are included in this: deconcentration—decision making authority to lower levels of government; decentralization—decision making and payment responsibility to lower levels; privatisation—public sector functions to the private sector or individuals; devolution—rights and responsibilities to user groups at the local level



The Importance of Institutions 2

- the key decentralization strategies that have been used in biodiversity conservation since the 1980s are the integrated conservation and development projects (ICDP's) and community based natural resources management (CBNRM)
- many studies have been done to date on the successes and impacts these strategies have had on biodiversity
- in a recent review of the ICDP/CBNRM literature, Shyamsundar (2005) investigated the following key questions:
 - What do we understand about the impacts of devolution in terms of poverty reduction and biodiversity conservation?
 - What are some of the conditions that contribute to success?
 - What does the future hold for decentralized biodiversity conservation; that is, what are some emerging challenges?



The Importance of Institutions 3

- on the first question, the empirical evidence can be summarised as:
- devolution contributes positively to poverty reduction, especially if one is willing to accept that enhanced community level benefits make a significant contribution to poverty reduction
- where the opportunity costs and transaction costs of biodiversity conservation outweigh their benefits, biodiversity conservation cannot be enhanced
- devolution programs' impact on biodiversity conservation could be influenced by the household's perception of the distinction between community and household benefits; and how these relate to the biodiversity stock supplying these benefits
- there is strong evidence to the effect that devolution reduces poaching; improves perceptions, strengthens rights and reduces the liability aspect of biodiversity



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The Importance of Institutions 4

- on the second question, the existing empirical evidence suggests that factors that can contribute to the better devolved biodiversity conservation are:
 - congruence between clearly defined resource and governance boundaries
 - congruence between appropriation and provision rules and local conditions
 - collective choice arrangements
 - localised monitoring
 - graduated sanctions
 - rapid access to low cost conflict resolution mechanisms
 - minimum recognition of rights by government authorities
 - governance activities being organised in multiple layers of nested enterprises in sync with resource complexity



The Importance of Institutions 5

- on the final question, the challenges that need to be addressed by decentralized biodiversity conservation are summarised as follows:
- **communities versus households**—biodiversity conservation ought to bring some benefits at the household level which are significant relative to total household income
- **heterogeneity within and between communities**—communities engaging in biodiversity conservation are rarely homogeneous entities that harmoniously agree to undertake biodiversity conservation
- communities are characterised by heterogeneity of endowments and interests
- these differences can lead to unequal costs as a result of institutional change; differing stakeholder needs can contribute to conflict and impact conservation efforts; compensation schemes might be necessary to redistribute costs and benefits



The Importance of Institutions 6

- **competition/complementarity of organisations**—decentralised biodiversity conservation generally involves either the creation of new competing organisations or the assigning of new powers to an existing organisation. Any changes made affect both formal and informal institutions
- **tenure over land and resources**—biodiversity conservation programs usually confer only usufruct rights to local stakeholders, while ownership rights remain with the state. One needs to know whether the lack of ownership will weaken conservation efforts in the long run
- **financial sustainability**—financial support for these programs usually comes from tourism, national governments and international donors. Financial sustainability is an issue that each conservation area will need to confront and one needs to investigate the question of whether conservation programs promote future investments in conservation



Research on use of incentives 1

- what innovations can be made to the apparently more successful CBNRM model to establish greater linkages between the bioregional model and biodiversity conservation, upon which benefits are funded?
- how can stakeholder heterogeneity be factored in the design and implementation of systematic biodiversity conservation plans?
- what is the best way of implementing institutional change to reduce the potential for conflict between current institutions and desired institutions?
- what economic models could be used to get the long term commitment of stakeholders to conserve biodiversity within their bioregions while ownership rights remain with the state?
- the cost benefit analysis of bioregional conservation projects with special emphasis on the role of donor support



Research on use of incentives 2

- when we think about benefits from bioregional biodiversity conservation, whose benefits are we thinking about? Global actors benefits are different from benefits to locals.
- how do we know and measure some of the unknown and unmeasurable benefits to locals in bioregions?
- how do you make a case for biodiversity conservation to policy makers when it does not bring about tangible benefits today compared to an alternative activity such as biofuel production by a foreign firm which brings employment and other benefits today?
- what institutional mechanisms do we need to protect critical biodiversity areas from unsustainable land and resource use especially by global capital?
- what is the relationship between economics and spatial planning? At the end of the day, can we write the importance of spatialness in economics?



Research on use of incentives 3

- how do you manage to have bioregional conservation in spatial areas where you have less control unlike in a protected area where you have total control?
- which institutions are important in curbing the key drivers of biodiversity loss such habitat loss, flow modification, invasive species and overharvesting in specific bioregions?
- what can economics do to corroborate the results from systematic conservation planning framework?
- what advice would you give to bioregions about what incentive mechanisms work best at what spatial scale?
- how do you deal with tenure changes under claims for land restitution without decreasing biodiversity conservation outcomes in bioregions?
- what is the role of different tenure systems in different bioregion configurations?



Research on use of incentives 4

- social grants can divert dependence on some resources – there is an ecological value of the social grants system; this might be a motivation for external support for a bioregion since social grants would be a key driver of a bioregion
- integrating economic costs and benefits into systematic conservation planning through valuation of ecosystem services for a large number of estuarines (Jane Turpie); more protection is better from an economic perspective than needed just to meet biodiversity targets
- the significance of payment for ecosystem services for biodiversity planning (Kevan Zunckel); quantifying ecosystem services can leverage in getting more resources for conservation

