CITES and CBNRM

Proceedings of an international symposium on "The relevance of CBNRM to the conservation and sustainable use of CITES-listed species in exporting countries"

Max Abensperg-Traun, Dilys Roe and Colman O'Criodain (editors)

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Max Abensperg-Traun, Dilys Roe and Colman O'Criodain (editors)

The international symposium on

"The relevance of community-based natural resource management (CBNRM) to the conservation and sustainable use of CITES-listed species in exporting countries"

was held in Vienna, Austria, 18 – 20 May 2011, and was co-organized by the Austrian Ministry of the Environment and the European Commission.

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Cover photo: Competition for water between local communities and elephants near the Matambwe Headquaters of the Selous Game Reserve, Tanzania, by Ludwig Siege

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Contents

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Abbreviations and Acronyms

AABG	Addis Ababa Principles and Guidelines
ABS	The Nagoya Protocol on Access and Benefit Sharing
ABS ICNP	Intergovernmental Committee for the Nagoya Protocol on Access and Benefit-sharing
ADMADE	Administrative Management Design (*for game management areas*)
AHTEG	Ad Hoc Technical Expert Group
AMA	Adaptive Management Approach
ASAL	Arid and Semi-Arid Lands
AWF	African Wildlife Foundation
BfN	German Federal Agency for Nature Conservation
BLG	Biodiversity Liaison Group
BMZ	Bundesministerium für Wirtschaftliche Zusammenarbeit
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBC	Community-Based Conservation
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CBO	Community-Based Organization
CEO	Chief Executive Officer
CI	Conservation International
CIC	International Council for Game and Wildlife Conservation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention for Migratory Species
CONICET	National Research Council of Argentina
CoP/COP	Conference of the Parties
CPUE	Catch Per Unit Effort
CSG	Crocodile Specialist Group of the IUCN
DEFRA	UK Department for Environment, Food and Rural Affairs
DFID	UK Department for International Development
DRSRS	Department of Resource Surveys and Remote Sensing (Kenya)
DSE	German Foundation for International Development
EBS	European Biodiversity Standard
EBCD	European Bureau for Conservation and Development
EU	European Union
EWNHS	Ethiopian Wildlife and Natural History Society
FACE	Federation of Associations for Hunting and Conservation of the European Union
FAO	Food and Agricultural Organization
FOM	Forestry Assessment, Management and Conservation Division of the FAO
FWS	US Fish and Wildlife Service
FZS	Frankfurt Zoological Society
GBO	Global Biodiversity Outlook
GECS	South American Camelid Specialist Group of the IUCN-SSC
GEF	Global Environment Facility
GIZ	German Society for International Cooperation
GMA	Game Management Area
GPTF	Game Products Trust Fund
GRN	Government of the Republic of Namibia
GTZ	German Agency for Technical Cooperation
IAS	Invasive Alien Species
ICCD	International Convention on Combating Desertification
ICFFD	International Conference on Financing for Development
ICNP	International Conference on Network Protocols
IFAW	International Fund for Animal Welfare
IGF	International Foundation for the Management of Fauna
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
IPBES	Intergovernmental Panel on Biodiversity and Ecosystem Services
IPHA	International Professional Hunters Association
IUCN-SSC	International Union for the Conservation of Nature – Species Survival Commission
JV	Joint Venture
KfB	German government-owned development bank
KfW	Kreditanstalt für Wiederaufbau
KWS	Kenya Wildlife Service

LGMA	Lupande Game Management Area (Zambia)
LIFE	Living in a Finite Environment
LIRDP	Luangwa Integrated Rural Development Project (Zambia)
LSB	Local Skin Buyer
LWF	Laikipia Wildlife Forum
MA	CITES Management Authority
MEA	Multilateral Environmental Agreement
MoP	Meeting of the Parties
MoU	Memorandum of Understanding
MRC	Mpala Research Center (Kenya)
NACSO	Namibia's Communal Conservancies Tourism Sector
NAP	National Action Plan on Biodiversity
NAPA	National Adaptation Programme of Action
NBSAP	National Biodiversity Strategy Action Plan
NDF	Non-detriment Finding
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for Development Cooperation
NRM	Natural Resource Management
NRT	Northern Rangelands Trust
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PA	Protected Area
RAMSAR	Convention on Wetlands
REDD	Reduced Emissions from Deforestation and Degradation
RNR	Renewable Natural Resource
SA	CITES Scientific Authority
SADOCC	Southern Africa Documentation and Cooperation Centre (Austria)
SAPA	Social Assessment of Protected Areas
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SC	Standing Committee of CITES
SCIF	Safari Club International Foundation
SD	Sustainable Development
SLAMU	South Luangwa Area Management Unit (Zambia)
SSN	Species Survival Network
SU	Sustainable Use
TAWIRI	Tanzania Wildlife Research Institute
TCP	Torghar Conservation Programme
TEEB	The Economics of Ecosystems and Biodiversity
TEMATEA	Thematic Environmental Modules As Tools for Environmental Agreements (issue-based modules for the coherent implementation of biodiversity-related conventions)
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce
UK	United Kingdom
UNCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
USAID	United States Agency for International Development
VINCA	Vienna Institute for Nature Conservation and Analysis
WAZA	World Association for Zoos and Aquaria
WB	World Bank
WCS	Wildlife Conservation Society
WHC	World Heritage Centre
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature
YAMP	Yellow Anaconda Management Programme

Foreword

On the 19th of December 2009, the Austrian CITES Management Authority conducted its routine pre-CITES Conference of the Parties meeting with representatives of the national Scientific Authorities of the nine Austrian Provinces, and of Austrian NGOs, to coordinate the Austrian position on documents to be presented at CITES CoP15 in Doha, Qatar, in March 2010. As is usually the case in such circumstances, proposals associated with the African elephant polarized discussions. The Austrian Government was of the view that the Zambian proposal to down-list its elephant population to Appendix II at CITES CoP15 contained significant potential for income enhancement for Zambian community-based conservation programmes such as ADMADE (Administrative Management Design), and associated potential implications for CITES implementation. However, discussions revealed strongly diverging views between the Austrian Government and some NGOs present on the potential contribution that CBNRM can provide to terrestrial species conservation in general, and, by implication, potential down-listing effects on species and community programmes involved. As a consequence, the Austrian CITES MA proposed to host an international symposium to critically examine the benefits – or lack of – that terrestrial CITES-listed species gain through the involvement of local communities in conservation programmes. These symposium proceedings represent the outcome of this initiative, which broadened considerably from its initial intent to examine closely related issues, such as:

- what contributes to successful community-based conservation programmes,
- how do CITES listings impact on CBNRM,
- effects of EU CITES trade restrictions on CBNRM, and
- how the range of relevant Multilateral Environmental Agreements can be used to enhance the role of CBNRM as a conservation instrument.

The development of the agenda, terms of reference for working groups and list of speakers and non-speaking invitees was closely coordinated between the co-organizers, the Austrian Ministry of the Environment and the European Commission. The symposium was an expert meeting; invitees included representatives from EU CITES Management and Scientific Authorities, persons with relevant expertise from around the globe, and a sample range of nature conservation and animal protection NGOs. Presentations included a focus on global perspectives, and relevant case studies with either a national or species level focus. Case studies on terrestrial species were selected on the basis of high CITES relevance and to reflect the spectrum of CBNRM programmes as a conservation instrument at the national level. Persons with well-established on-the-ground CBNRM expertise from countries – such experience being with species chosen for review – were asked to present case studies.

On the basis of presentations made – and under the guidance of working group chairs – working groups were tasked to synthesize pertinent themes. The working group outputs are reports by the chairs and rapporteurs, and, as such, do not claim to be consensus documents. However, all working group chairs emphasized that they reflect the diversity of opinions articulated within each group.

It is hoped that this symposium will contribute to a better understanding among national CITES Management and Scientific Authorities of the European Union, and other relevant EU organizations, of the role of local communities in conserving terrestrial biological diversity, that biodiversity strategies need to be part of the broader social and economic development agenda in the less developed nations of the world, and that this receives more policy coherence in relevant international conventions and conservation and development organizations.

Emerging challenges and opportunities in listing species on the CITES Appendices, and in ensuring effective implementation

Statement by John E. Scanlon

Secretary-General, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

I would like to express our sincere thanks to the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, in cooperation with the European Commission, for taking the initiative to convene this meeting. Based upon the email exchanges I have read in the lead-up to this meeting, it already appears to have generated a very healthy debate.

I enter this discussion from an implementation perspective, noting that the importance of achieving full implementation of the Convention is reflected in Goal 1 of the CITES Strategic Vision 2008-2013.

Other Goals of the Strategic Vision are also relevant to implementation: Goal 2 aims to secure the necessary financial resources for implementation and Goal 3 aims to ensure that multilateral environmental agreements and processes are coherent and mutually supportive in addressing biodiversity loss. In the context of Goal 3, CITES implementation will contribute to delivering on the outcomes of the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD), and in particular the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets.

The Convention consists of 25 articles, which address various aspects of international trade regulation, and three Appendices, which contain approximately 34,000 animal and plant species subject to such regulation. The criteria for listing a species on Appendix I or II under CITES are known. Listing is founded on sound and relevant science, and the trade and biological criteria agreed upon by the Parties. This is not open to debate, unless the Parties choose to enter into such a debate.

But the listing of a species in CITES is the start of a process, not the end. It is the listing that triggers the application of the Convention to that species.

CITES Parties have recognized that the implementation of CITES-listing decisions should take into account potential impacts on the livelihoods of the poor – positive and negative. The Parties have also recognized that commercial trade may be beneficial to the conservation of species and ecosystems and/or to the development of local people when carried out at levels that are not detrimental to the survival of the species.

The need to involve local people in the implementation of CITES-listing decisions is therefore well accepted in Decisions and Resolutions of the Conference of the Parties, as well as through agreement on broader concepts such as Principle 10 of the Rio Declaration on Environment and Development. We are seeing concrete opportunities for such engagement through the work initiated by the Parties on CITES and Livelihoods and bushmeat.

One way in which local people can become involved in CITES implementation is through community based natural resources management (CBNRM). The application of CBNRM, however, must be consistent with the obligation of a State Party to effectively implement the Convention and to ensure that CITES trade is legal, sustainable and traceable.

Under such circumstances, CBNRM becomes a CITES implementation tool that has as its central component the building of local people's capacity to conserve and sustainably use, and derive equitable benefit from, the wild animals and plants that surround them.

Implementation concerns are not limited to CITES, of course, as is apparent from Global Biodiversity Outlook 3. The challenge of convention implementation also cuts across other high priority issues such as climate change, land degradation, hazardous chemicals and wastes and ozone depletion. In order to stimulate implementation measures for addressing these other issues, however, States have put into place significant financial mechanisms, for example the Global Environment Facility (GEF) for climate change, biodiversity, desertification and chemicals management and the Multilateral Fund for ozone depletion.

CITES has no financial mechanism, and the Joint Inspection Unit of the United Nations found in a recent report that CITES has not benefitted from GEF funding either directly nor indirectly through the CBD window. In this context, it is worth noting that the GEF has invested in excess of USD 9.5 billion over the past 20 years into eligible activities and over USD 2.6 billion has been invested in eligible activities through the Multilateral Fund.

CITES does include significant international obligations on its Parties, and it has developed over the years a powerful compliance mechanism under which the Standing Committee of the Conference of the Parties can adopt recommendations to suspend trade with a Party in one or more CITES species.

In the absence of an international financial mechanism, developing and developed countries which are Parties to CITES have had to rely on their own human and financial resources to implement the Convention – and they have accomplished a great deal. We should also recognize that donor States have generously invested in multiple projects over many years which have supported CITES implementation, for example the current European Commission CITES capacity-building project.

We are now exploring all possible financial options for supporting CITES implementation, including the possibility of bringing it within the GEF. We are also looking at whether capacity-building for science under the (proposed) Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES) could focus on the making of non-detriment findings under CITES. If so, the skills and knowledge obtained through such capacity-building could be immediately applied and the investment will provide a double benefit, namely strengthened capacity to make scientific findings and more effective implementation of CITES.

There are significant advantages to having the ‘carrot’ of financial support in addition to the ‘stick’ of recommended trade suspensions. It is also important to be able to demonstrate benefits to local people, from well-regulated wildlife trade, in order to obtain their help with achieving compliance with the Convention. Involving them in the process of managing the nearby natural resources on which they depend is an important step in ensuring local ‘buy-in’.

A concern has been expressed by some people that to involve local people in CITES implementation and address socio-economic issues may somehow ‘contaminate’ or detract from the application of agreed listing criteria. This is not the case. The listing criteria have been adopted by the Parties. Proposals to amend the Appendices are all assessed against these criteria.

However, if we listen to the debates, and to the talk in the corridors, it is apparent that there are concerns in some cases about how the implementation of a proposed species listing may affect local people and their livelihoods. Such socio-economic concerns are to be expected and listing proposals have been voted down notwithstanding clear scientific justification for their adoption. To date, the response to implementation concerns has been to delay the entry into force of a listing beyond the 90 days provided in the Convention. This approach has been applied to marine and timber species but could also be applied to other terrestrial species if similar implementation concerns were raised.

CITES is not the only convention where Parties may not follow the science that is presented to them. We are all familiar with the advice of the Intergovernmental Panel on Climate Change (IPCC) and the policies adopted by States Parties to the United Nations Convention on Climate Change and its Kyoto Protocol in response to such scientific advice. An underlying concern for

many Parties to the Protocol is whether the IPCC's advice can be implemented on the ground and, if so, by whom. We see similar concerns being expressed in negotiations under the various chemicals conventions, when new chemicals are proposed for inclusion before measures are in place to support implementation of such decisions.

In appropriate circumstances, therefore, why not anticipate and address implementation issues when a Party is considering the development of a proposal to amend the CITES Appendices? Why do implementation issues tend to be left until after a listing is made? Consideration of such implementation issues during the listing process would not contaminate the basis for determining whether to list a species or not, but it would enable Parties to take such a decision with the benefit of considered advice on how such a decision might be implemented, together with the measures that could be put into place to facilitate implementation.

Why not present a package of information to the Conference of the Parties, in appropriate cases, which would provide the scientific and trade-related reasons for listing a species as well as the measures for implementing the proposed listing so that both are presented to and considered by decision makers at the same time?

CBNRM is not a panacea, and its application must be consistent with a Party's obligations under the Convention. But it is one viable option to explore when determining how to achieve more effective implementation of the Convention. CBNRM as a CITES implementation tool therefore merits deeper examination as to how it works, when it works and when it does not work.

Much of my professional experience relates to the freshwater sector in Australia where considerable authority has been devolved to the local level based upon water catchment boundaries. Such devolution of power has always carried with it the responsibility to operate in accordance with overarching national and regional objectives and obligations.

Today we have the opportunity to share experiences and to listen to and learn from one another, and I again thank the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, in cooperation with the European Commission, for making this valuable opportunity possible.

I wish you well with your deliberations.

Section 1. Introduction

CITES and community-based conservation: The need for constructive engagement

Max Abensperg-Traun, Ministry of Agriculture and Forestry, Environment and Water Management, Department for Species Conservation and National Parks, CITES Management Authority, Vienna, Austria; and
Hugo-Maria Schally, European Commission, Directorate General for the Environment, Multilateral environmental agreements, processes and trade issue, Brussels, Belgium

In many developing countries of the southern hemisphere, a large proportion of their often considerable biodiversity is located outside of protected areas (PAs) where it shares space and resources with rural people. In fact, about 1.4 billion of the world's extremely poor people live in such areas (http://www.ifad.org/pub/ar.htm), particularly in sub-Saharan Africa and South Asia where they often depend upon species of wild animals and plants for their survival (Roe *et al*. 2002). In addition, the mostly colonial and post-colonial pillars of conservation, national parks and other PAs, while retaining a key conservation role, are no longer sufficient to meet biodiversity conservation goals. They also often fail to meet their mandate due to poor governance, lack of funds, human population increases along their perimeters, and lack of incentives for affected rural people to help conserve wildlife (Smith *et al*. 2003; Cumming 2004). Conserving wildlife populations outside of PAs, where governments have limited capacities to influence sustainable resource use, has thus become an increasingly high priority.

For both moral and strategic reasons, conservation practitioners have recognized the need to address the dual goals of biodiversity conservation and poverty alleviation, and community-based natural resource management (CBNRM) has been a logical strategic response of the 1980s, benefitting in particular from early southern African initiatives (Martin 1986; Murphree 1991; Adams and Hulme 2001). By transferring ownership or user rights from the Government to e.g. the producer level, such as local communities, CBNRM can provide affected communities with the necessary economic incentives to effectively conserve and sustainably utilize, rather than to "mine", terrestrial biological diversity outside the PA system, despite many short-comings in national CBNRM implementation (Hulme and Murphree 2001; Baldus 2009; Roe, Nelson and Sandbrook 2009; Torquebiau and Taylor 2009; NACSO 2010; see also case studies in this volume). Neither does this ignore the fact that many governments are reluctant to relinquish control over natural resources by providing communities with adequate tenure (Hulme and Murphree 2001), or the debate whether CBNRM can adequately address rural poverty (Roe 2008; Adams *et al*. 2004) – but in biodiversity conservation terms, there really seems to be no alternative to CBNRM outside of PAs.

CITES tries to serve the interests of conservation by trying to ensure that international trade in specimens or products and derivatives is sustainable. But the Convention has limited capacities to ensure that trade is sustainable (e.g. Jenkins 2000; Abensperg-Traun 2009), and it is no coincidence that the preamble of the Convention text states that "*peoples and states are and should be the best protectors of their own wild fauna and flora*" (Wijnstekers 2011). The widely recognized link between poverty and biodiversity loss has been expressed in a statement of the secretariats of the five major biodiversity-related conventions at the World Summit on Sustainable Development in Johannesburg, South Africa, in 2002, namely CITES, the CBD, Ramsar, CMS and WHC. Effective implementation of CITES is therefore difficult to achieve without recognizing the economic, cultural and social concerns of affected communities. It would thus be in the strategic interest for an effective implementation of CITES to win over rural communities as real conservation partners because traditional CITES control measures to effectively conserve its listed species have often not been very effective, particularly the economically valuable and charismatic species such as elephants, tigers and rhinos (Bennett 2011). In combination with international trade controls and national enforcement, CBNRM has the potential to effectively address this problem for terrestrial species. Rural communities should

thus be recognised as actors of critical importance for the implementation of CITES (Hutton and Leader-Williams 2003). It could even be argued that rural communities can themselves be seen as an additional enforcement and implementation instrument, supporting national efforts.

The international community has set itself ambitious biodiversity conservation goals, as in the 2020 Aichi Biodiversity Targets of the CBD (http://greenwave.cbd.int/en/resources/target). However, as long as the world's poor have to carry the bulk of the burden in terms of lost livelihoods and even lost lives, in the absence of financial incentives, these goals will not be achieved. To assist them to achieve their goals, the sustainable commercial use of populations of wild terrestrial species has become central to the philosophies and strategies of international conservation agreements and organizations such as those of the CBD and the IUCN, as well as CITES (e.g. CITES Resolution Conf. 8.3 Rev. CoP13; http://www.cites.org/eng/res/index.shtml).

CITES seems well aware that the effective implementation of a species listing is often dependent on the support of affected rural communities (e.g. Mathur 2009; Velasquez Gomar and Stringer 2011; see also CoP15 Doc.14 on "CITES and livelihoods", http://www.cites.org/eng/cop/15/doc/index.shtml), and this is reflected in several Resolutions of the Convention, including:

i. Res. Conf. 8.3 Rev. CoP13 ("Recognition of the benefits of trade in wildlife"), which "*Recognizes that implementation of CITES-listing decisions should take into account potential impacts on the livelihoods of the poor*";

ii. Res. Conf. 9.24 Rev. CoP15 ("Criteria for amendment of Appendices I and II") where
   a. the preamble states "*Noting the objective to ensure that decisions to amend the Convention's Appendices are founded on sound and relevant scientific information, taking into account socio-economic factors, …*";
   b. in Appendix 6 ("Format for proposals to amend the Appendices") under paragraph 8 on "Species management", proponents for a proposal to amend the Appendices are asked to provide details of programs in place in the range States to manage populations of the species in question. In addition, where applicable, the proponent is to provide details of any mechanisms used to ensure a return from utilization of the species in question to conservation and/or management programs, such as "*…, community ownership …*";

iii. Res. Conf. 13.2 Rev. CoP14 ("Sustainable use of biodiversity: Addis Ababa Principles and Guidelines") where Practical Principles 2 and 12 clearly articulate the need to involve local communities in resource management, and as beneficiaries of associated economic benefits;

iv. Goal 3 of the CITES Strategic Vision 2008-2013 (Res. Conf. 14.2) states "*Contribute to significantly reducing the rate of biodiversity loss by ensuring that CITES and other multilateral instruments and processes are coherent and mutually supportive*" which, by implication, includes the sustainable development goals of the IUCN, CBD and the MDGs of the United Nations; and

v. Res. Conf. 15.2 ("Wildlife trade policy reviews") where parties are "*Encouraged to take into account the needs of indigenous people and other local communities when adopting trade policies concerning wild fauna and flora*".

But CBNRM remains controversial for a variety of CITES-relevant reasons:

- reservations about what CBNRM has achieved;
- lack of understanding that CBNRM is a lengthy process and existing programmes are in various stages of development;
- poor knowledge of the opportunities to be gained through CBNRM;
- differences in cultural and ethical values regarding the extractive use of species; and
- because addressing poverty alongside the sustainable use of species is considered by many to be outside the mandate of the Convention, something that should more appropriately be dealt with by the Convention on Biological Diversity.

While the discussion about linking conservation with poverty reduction goals within CITES is far from new (see also Hutton and Dickson 2000; Dickson 2002; Hutton and Leader-Williams

2003), the role of CBNRM in CITES decision-making processes remains marginal at best, and remains restricted to the implementation phase of a species listing (Res. Conf. 8.3 Rev. CoP13). Furthermore, where CITES decisions involve the issue of extractive use, not all species are equal, which reflects political sensitivities towards certain taxonomic groups (Webb 2000; Velasquez Gomar and Stringer 2011). Clearly, CITES has yet to demonstrate that its decisions are compatible with relevant CITES Resolutions, including Goal 3 of its current Strategic Vision.

Decisions on international trade in species and their products made at CITES Conferences of the Parties are binding and legally enforceable which, in combination with CITES' strong compliance mechanism (Reeve 2006), further underlines the need to ensure that impoverished rural communities are a part of the conservation equation, and not its victims economically and in health terms (e.g. De Boer and Baquete 1998; Chardonnet *et al*. 2010), particularly considering the enormous economic potential that terrestrial wildlife can bring to many rural people (Chardonnet *et al*. 2002). While donors have invested substantial financial resources to support national implementation in developing countries, such as the current European Commission CITES capacity-building project, many Parties find it difficult to effectively implement and enforce the Convention. However, in the absence of effective enforcement (e.g. to control illegal hunting), unsustainable use and illegal trade, frequently involving members of impoverished rural communities, is often the inevitable outcome.

At CITES Conferences of the Parties, the position of the European Union on species listing proposals, or proposals to change the annotations of a species listing, often determines their success or failure. Many proposals potentially impinge on community-based conservation programmes and their livelihoods, with associated implementation consequences. Currently, the quality of discussions within the EU on such proposals invariably suffer from lack of relevant information, which makes the formulation of sensible EU positions difficult.

This symposium was the first international initiative of its kind that brought together key interest groups to synthesize the achievements of CBNRM for terrestrial CITES-listed species in exporting countries, and to provide the knowledge base necessary for a broad, balanced policy discussion within the European Union and beyond, regarding the role of rural communities in CITES decision-making processes. The symposium conclusions should be helpful in identifying options to enhance the current CITES Strategic Vision beyond 2013, and other relevant CITES regulatory mechanisms to strengthen the role of CBNRM in CITES. This applies particularly to the effective implementation of the Convention as stated in Goal 1 of the CITES Strategic Vision 2008 – 2013 (Res. Conf. 14.2, http://www.cites.org/eng/res/index.php). In addition, the symposium has identified important links between CITES and other relevant multilateral instruments, especially within the CBD, or the proposed Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES). Furthermore, it can provide guidance on how best to proceed with existing Memoranda of Understanding between CITES and other organizations like the IUCN, CMS, FAO and UNCTAD, to maximize relevant synergies with these organizations.

We hope that the international CITES community and relevant organizations, will take advantage of the information compiled in the Symposium proceedings, to engage with a constructive spirit in a debate on the best possible use to be made of the concept of CBNRM while striving to achieve the goal to effectively conserve biological diversity.

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Section 2. Global context

Sustainable livelihoods, community involvement and awareness as driving forces for biodiversity conservation

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Biological diversity is important for life on earth and is one of the pillars of sustainable development. Our continued derivation of benefits from biodiversity, both now and for future generations, will depend upon how we use it and how our activities impact upon ecosystem functioning and goods and services. This includes species in international trade. Markets and technologies make the need for commodities vary in time, in many cases with an unpredictable pattern, and when a conservation action is decided and implemented, it is possible that similar species are targeted for exploitation at an unsustainable level to replace those that have been targeted by conservation initiatives. International trade is, however, only one of a range of factors that can detrimentally impact upon biodiversity. Changes in land use and climate, pollution, habitat degradation and fragmentation are among the major drivers of biodiversity loss. A holistic approach should therefore be considered when making decisions on wildlife conservation, management and long-term exploitation.

When wildlife is confined to protected areas in developed countries, conservation efforts generally put strict limits on human activities such as inhibiting harvest and changes in land use. However, in developing countries, a significant share of biological diversity is found outside protected areas where local communities are often dependent on wildlife for their daily sustenance. Under such circumstances, CBNRM serves as a necessary additional conservation strategy to protected area systems.

The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity reflect international recognition of this inclusive approach and provide a framework for assisting Governments, indigenous and local communities, resource managers, the private sector and other stakeholders, about how to ensure that their use of biological diversity will not lead to its long-term decline. Among these principles, it is noteworthy that Practical principle 12 states: *"The needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources"*.

Conserving endangered species is costly and can often be perceived as a hindrance to economic development. Here, different and often complex (holistic) solutions may be needed to effectively conserve biodiversity. However, within CITES, the on-going debate about the need to consider local communities' livelihoods normally arises during decision making processes at CITES Conferences of the Parties, which are not conducive circumstances to adequately address both conservation and human development agendas. This is in stark contrast to the Convention on Biological Diversity (CBD) where both sustainable use and livelihoods are not only core elements of the Convention, but where they are addressed simultaneously.

Current evidence clearly demonstrates that a minimum standard of living and governance appear to be basic conditions for the effective conservation of biological diversity, particularly outside protected area systems. The establishment of CBRNM programmes may be one of the tools that can help in this respect. Where local people see themselves as stakeholders in the preservation of wildlife because they hold a significant economic interest in wildlife exploitation ("incentive measures"), sustainable management, reduction in illegal activities and effective enforcement becomes more realistic. Under specific conditions such an approach could be a more cost-effective strategy to conserve endangered species outside protected areas.

In addition to security in land tenure and sustainable use options, implementation of environmental education and awareness raising is key to achieve cooperation through local communities in conservation programmes in developing countries. This includes more effective methods of

communications between and among stakeholders and managers. Local communities need to be informed about the value of the natural resources surrounding them, of the potential for long term sustainable use and on successful and comparable CBRNM programmes elsewhere.

Wildlife can have a direct impact on poor rural economies through competition for basic resources (e.g. crop destruction by elephants) and can put human lives in danger, as is the case in many African countries where many communities live alongside lions, elephants and crocodiles. In areas of abundant wildlife, human population increase is the main driver contributing to enhanced human-wildlife conflicts which can result in direct persecution and local extinction of endangered species.

While there is no simple solution to this challenge, the need to involve local communities in conservation programmes appears to be central to improve conservation outcome. CBNRM-associated income generation from wildlife can include both soft tourism as well as allowing a certain level of consumptive use where criteria of sustainability are met.

It must be underlined that in developed countries on the other hand, awareness of good CBNRM practice is also insufficiently known. Here, the general overall perception of wildlife use, particularly involving exotic species in developing countries, is negative, and the preferred solution is “protection without condition”, which is often associated with a refusal of products originating from wildlife per se. In some instances, public campaigns against the use of wildlife are generalised, putting in the same basket legal products obtained in a sustainable manner with those generated by unsustainable, illegal exploitation.

Historically, CITES debates and negotiations around species listing proposals are more controversial where they relate to flagship species like polar bear, elephants or rhinos. There, decisions can be driven by factors other than biological and international trade criteria. Animal welfare considerations are increasingly important in many industrialised societies, and the perception of the “consumptive use” of wildlife becomes less acceptable in societies where the link between humans and “wild nature” has become weak, like in the European Union. In such circumstances, positions on species conservation basically rest upon a highly romanticised, abstract and rather static vision of the relationship between man and nature. This sentiment has arisen in developed societies where a significant part of the available land has been used to produce food and commodities for significant periods of time and where a considerable part of the original fauna, including many charismatic species, has already been lost. Here, full protection is given to the tiny portions of the environment that remain in a semi-natural state. Even in such cases, when wildlife roams out of protected areas, conflicts with and intolerance by landowners often arise (e.g. Brown bear, European wolf) and management measures often include the harvesting of species to levels compatible with agricultural use or human safety. At the same time, CBNRM, in the sense of landholders having the right to the sustainable and commercial harvest of species, has been used in the European Union and comparable regions of the world, for long periods of time.

CITES debates would significantly benefit from more information on CBRNM objectives and the results of relevant case studies transmitted to CITES Parties. Successes and failures, obstacles encountered, and results achieved should be shared to serve as a basis for a well informed decision making process. Clearly, no universal formula for successful CBNRM programmes is likely to exist and many projects are in their infancy or do not achieve what they have set out to do, yet many CBNRM programmes have an outstanding record of conservation outcome. But it also needs to be recognized that CBNRM programmes require national and international support as well as many years for their development. The sharing of experiences made is of utmost importance not only to other CBNRM programmes and stakeholders, but to the international CITES community whose interest is the effective conservation of its listed species. In many cases, this rests largely not only on expensive national enforcement, but also on the support of local communities who live side-by-side with species listed on the Appendices of the Convention.

This symposium is therefore a welcome and truly appropriate initiative. It can raise awareness amongst Parties’ that both national and international strategies aimed at the conservation of wildlife in developing countries should pose no economic burden and hindrance to economic growth and prosperity, but that they need to be compatible with the livelihood aspirations of the poor while meeting the sustainability criteria of the Convention. The European Commission has decided to co-sponsor this initiative because we are firmly convinced that all possible options need to be explored to achieve the ultimate goal of reducing the loss in biological diversity.

A question of balance? Reflections on the appropriate relationship between rural development and international protocols to regulate wildlife trade

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Introduction

The principle of 'Permanent Sovereignty' (the state has the right to possess, use and freely dispose of its natural resources) has over time become a well established legal principle (Schrijver 1997). This partly reflects wide-spread recognition that the primary responsibility for conservation rests nationally/locally, and it has logically led to questions about when international cooperation is necessary and even useful (Esty and Ivanova 2004). In response, Murphree (2000) formulated a common-sense principal of 'rule-of-scale parsimony' which suggests that one should never nationalise management for resources which are owned locally; never regionalise management for resources that are owned nationally; and never globalise management for resources that are owned, because of their nature, regionally.

However, there are other mainstream perspectives and one with increasing currency argues that we can no longer rely on local efforts because they are swamped by global processes generated by humanity pushing at the boundaries of our planetary life-support systems. The only practical and effective response under these desperate conditions is held to be stronger global governance (Rockström pers. comm. 2011)

Whether or not one subscribes to this perspective, it is in any case clear that the principle of 'Permanent Sovereignty' has been attenuated over time by a greater emphasis on the responsibilities of states, and by recognising the possibility that for some resources there may be global stakeholders (Schrijver 1997). This evolution is well reflected in the preamble to the Conference on Biological Diversity (CBD) which certainly reaffirms that "*States have sovereign rights over their own biological resources*" and also that "*States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner*" - but before doing so asserts that "*the conservation of biological diversity is a common concern of humankind*". Subsequently in Article 3 the Convention goes on to amplify this distinction by stating that "*States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies*" before adding that they also have a "*responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*".

Arguably, it would have been difficult to justify the creation of an international legal instrument had the principle of permanent sovereignty not been qualified in this way.

The preamble of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which of course is a significantly older instrument than the CBD, carefully treads the line between the recognition that wildlife is best protected locally and nationally with the recognition that sometimes international cooperation is needed:

- Recognizing that peoples and States are and should be the best protectors of their own wild fauna and flora
- Recognizing, in addition, that international co-operation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade

1. Disclaimer: The contents of this chapter do not necessarily reflect the views or policies of UNEP.

Thus the question of the most appropriate balance between the local and the global in the context of CITES is embedded timelessly within the Convention itself, which unfortunately doesn't go on to provide any clear answers.

Consensus?

Given that CITES leaves the question hanging, it is worth considering at this point if there is any consensus on when international instruments are necessary to regulate wildlife management? My own views are, of course, moulded by my own background, experience and world-view (Clarke 1992), but I suspect that we might all be able to agree on a number of scenarios as follow:

i. Incentives to pursue behaviour that is collectively suboptimal and leads to resource depletion are especially strong with regard to highly mobile resources that are found outside national or supra-national territory, for example, on the high seas. These resources are managed as 'global commons' under open-access regime. They are, so to speak, everyone's responsibility and therefore no-one's responsibility. Such situations would seem to be natural candidates for international cooperation and responses that might include strong global governance mechanisms.

ii. Some species are migratory, and typically, while they might breed in one territorial jurisdiction, they might overwinter many thousands of kilometres away in another. International cooperation will likely be a fundamental element of the conservation of many of these animals.

iii. Many terrestrial wildlife species and populations exist in relatively distinct habitats and their location can often be fixed to specific protected areas, forests, private farms or communities. For these species it is likely to be most effective to assign the responsibility for management nationally or, where central governments are not especially strong, at the local level. Where effective local management and conservation can be achieved international cooperation may not be necessary, and indeed, it may be a costly diversion.

iv. On the other hand, some of these species may have considerable commercial value. In such cases there is strong evidence that national regulation and control may be essential to support local efforts to create the conditions necessary to achieve sustainable use. Similarly, in many cases it is clear that global regulation and control may be essential to support national efforts. Finally, in some cases the nation may have weak institutions, and in these cases there may be a strong case for global regulation, though of course there is rarely a one-size-fits-all solution.

So where is the problem?

One of the reasons I am optimistic that there may not be much disagreement on these four points is that Marshall Murphree, the founder of the principle of 'rule-of-scale parsimony', himself agrees that it is possible to have tough global enforcement as long as the mandate arises democratically from the local wildlife proprietors themselves (and that this is an arena in which CITES can find a valuable role in harmony with the responsibilities of national sovereignty (Murphree 2000). This being the case, what then is the problem which makes this an issue that raises its head time and time again, especially in the context of wildlife trade?

To answer this we need to return to the text of CITES, the main global instrument to regulate wildlife trade. I have already noted that while the Convention establishes a tension between local and global rights and responsibilities it doesn't go on to provide any clear guidance as to how the local, national and global are to be balanced in the search for sustainability. In fact, this was slightly disingenuous because, although it is not explicit, in practical terms the text makes a 'precautionary' legal presumption against the possibility that wildlife trade can contribute to the conservation of endangered species. The net effect of this is the de-facto prohibition of commercial trade in Appendix I (endangered) species irrespective of any livelihood benefits such trade might have, or any damage that its loss might inflict. Thus where endangered species are concerned, the balance of authority rests unambiguously with the international community. Unsurprisingly, therefore, the Convention does not require any assessment of, or make any allowance for, the social consequences of Appendix I listings.

On top of this, even though the control of Appendix II species (which may become threatened with extinction unless trade is subject to strict regulation) is essentially at the discretion of the range States, the Convention imposes some conditions before trade can take place (such

as scientific findings of non-detriment), there is no mention of local stakeholders and there is certainly no requirement that the local social consequences are taken into account when proposed listings for Appendix II are assessed.

A serious shortcoming?

A significant number of conservationists believe that the fact that CITES does not conspicuously deal with the social consequences of trade and listings is a serious shortcoming. This is because a strictly biological focus on the sustainability of wildlife harvesting and trade is never going to lead to effective responses because sustainability in the use of any species is usually embedded in sustainability considerations at the scale of the whole ecosystem, and this, in turn, is embedded in larger social systems with cultural, economic and political dimensions (Murphree 1996).

Within this reality, it can readily be appreciated that livelihood impacts are extremely important. This is because it is reasonable to assume that the livelihoods of rural communities may be impacted when trade is prohibited, and because we can easily imagine that the poor and vulnerable who rely on biological resources may be the biggest losers. This alone is surely a powerful reason why listing decisions responses merit careful consideration and scrutiny, but if it is not sufficiently persuasive then consider the practical fact that imposing costs on the poorest may actually undermine broader conservation objectives and, perhaps more importantly, conservation may be most effectively achieved by incentivising local people through sustainable use (Dickson 2000).

As many case-studies attest, these considerations are real. Rabinovich (2005) described the situation well when he wrote regarding the trade in blue-fronted parrots in Argentina, "the importance to conservation of these livelihood benefits is that they provide tangible economic incentives for the sustainable management of the parrots and habitat by peasants, and counter pressures for the conversion of land to intensive agriculture." It may be counterintuitive, but local resource exploitation can lead to effective conservation – indeed it may be the only possible route to effective conservation – and the prohibition of harvesting and may therefore be an inappropriate international response, on some occasions at least.

To put this back into the language of the local vs. global debate, it is increasingly clear that local incentives, rights and responsibilities are fundamental to sustainable natural resource governance, but at the same time the evolving globalisation of environmental conservation risks pulling the locus of resource governance away from localised regimes (Gomera, Rihoy and Nelson 2010). Given that local action is so critical to conservation outcomes it is hardly surprising that a significant part of the conservation community is keen to see local livelihood issues taken into account in institutions that seek to govern and shape wildlife trade.

The issues remain unresolved

Arguments around the social impacts of international trade regulation are not new. For example, almost 20 years ago the economist Ed Barbier reflected that "*in international policy debates decisions to control or ban trade in wildlife products should not be implemented without taking into account the implications for national and community-based wildlife development....*" (Barbier 1992). The issues were considered in more detail in 'The Trade in Wildlife' which in 2003 drew the following conclusions:-

- Regulation will not always effectively address conservation problems and can produce negative impacts for both people and conservation.
- Regulation which involves positive incentives for compliance, rather than relying heavily on intensive enforcement, is more likely to succeed.
- High level regulation is more likely to succeed when coupled with local action.
- The costs and consequences of regulatory approaches should be assessed before decisions and after application (Cooney 2003).

So the issues are not new, but they remain important and as yet they are unresolved.

Conclusions

It is now widely appreciated that conservation policy is more complex and involves many more considerations than was originally assumed by those who designed the existing global infrastructure to regulate wildlife trade, and the view that social or developmental concerns need to be considered in conjunction with biological ones is one that has gained wide currency within the biodiversity conservation community over the last two decades. We now know that regulation and control are a necessary, though not sufficient, condition for sustainable use and we also have good evidence that any regulatory system that includes positive incentives can be powerful and cost effective. Furthermore, a requirement to take into consideration the social consequences of conservation policies is important and does not have to be at the expense of effective conservation. There are good, pragmatic reasons to adopt conservation policies that also promote the satisfaction of human needs.

With respect to the issue of balance, I'd like to suggest that the most legitimate role for global governance is to protect the conditions necessary for the emergence of local solutions to environmental problems, and it seems likely that CITES will be most effective when it supports strong national and local programmes of conservation.

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CITES and the concept of sustainable use of renewable natural resources through CBNRM

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The concept of sustainable use – a cornerstone of the CITES philosophy

While for some people CITES is the nature conservation convention today, a closer look at the title, the purpose and the content of CITES reveals that this is not and can not be the case. Clearly, the "Convention on International Trade in Endangered Species of Wild Fauna and Flora" is about international trade in specimens of certain wild animals and plants. Consequently, CITES regulates the export, import and re-export of specimens with the aim to ensure that such trade is sustainable to the species involved (www.cites.org).

The purpose of CITES is therefore not to ban such trade (with the exception of some defined specimens of species listed in Appendix I) but – as is stated in the preamble of the Convention text – to protect certain species of wild fauna and flora against *over-exploitation* through international trade (CITES 1973). A more recent version in the 2008-2013 CITES Strategic Vision (the CITES Vision Statement) words it as follows: "Conserve biodiversity and contribute to its sustainable use by ensuring that no species of wild fauna or flora becomes or remains subject to unsustainable exploitation through international trade, thereby contributing to the significant reduction of the rate of biodiversity loss" (CITES 2007). Indeed, many wildlife species in trade are not endangered. But the existence of an agreement to ensure the *sustainability of the international trade* is important in order to safeguard these resources for the future.

Defining and spreading the notion to protect certain species of wild fauna and flora against over-exploitation by using them sustainably – long before the Rio Conference and Convention of Biological Diversity (CBD) again took up the subject in 1992 – is a very important aspect in the concept and the history of CITES and probably one of the most underestimated ones. However, in the Convention itself, there is no definition of "sustainable use" (SU). It took indeed the CBD in its Article 2 to offer CITES the following definition: "The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining the potential to meet the needs and aspirations of present and future generations" (CBD 1992). Or to put it more simply: SU requires that human activity only uses nature's resources at a rate at which they can be replenished naturally. Or even more simply: Make use of the "interests" without damaging the "capital".

National nature conservation agencies throughout the world are familiar today with the concept of SU and apply it in regard to the management of a great number of renewable natural resources (RNR) from invertebrates (clams, crabs, insects etc.) to fish, reptiles, birds and mammals of non-CITES-listed species as well as of CITES-listed species. As one of many examples I refer to the sustainable use of the Roe Deer (*Cepreolus capreolus*), a non-CITES-listed species, in Switzerland: Data collected by the Federal Office for the Environment as far back as 1933 show that since 1975, an annual harvest by licensed hunters of about 40,000 animals has not been detrimental to the overall population which remained fairly stable at a level of about 120,000 animals (Federal Office for the Environment 2010). Thus, an off take of about 1/3rd of the "capital" has in this case been sustainable.

Using the terms "capital" and "interest" in this regard is grossly simplifying because we are not dealing with economics but with biology. Thus, "capital" is the size of the reproductive population, which is determined by the carrying capacity of the range of the population or the species. This includes, among others, food availability, climatic conditions, topography and structure of the habitat, minus the number of deaths due to natural causes like predation, parasites, diseases and old age. In contrast, "interest" is the number of offspring produced. This is determined, among others, by the rate of reproduction, including recruitment age, availability and balance of both sexes (demography), nesting sites, number of offspring per female, food

availability and favourable climatic conditions, minus the number of deaths due to natural causes like predation, unfavourable climatic conditions, lack of food, etc. Of course, there is also human induced mortality, indirectly through competition for the same food source or destruction of the habitat, but also directly through hunting, collecting and capture.

Determining the size of the "capital" and calculating the "interests" in the biological world, and on this basis determining the sustainable off-take is, in reality, somewhat more complex.

- In recognizing this, CITES describes the mechanism by which the sustainability of the specimens exported should be attained in Articles III and IV of the Convention as follows: "The export of any specimen of a species included in Appendix II shall require the prior grant and presentation of an export permit. An export permit shall only be granted when the Scientific Authority of the State of export has advised that such export will *not be detrimental to the survival of that species*" (Article IV Para 2 a) (CITES 1973, CITES Website). And:
- "A Scientific Authority in each Party shall monitor both the export permits granted by that State for specimens of species included in Appendix II and the actual exports of such specimens. Whenever a Scientific Authority determines that the export of specimens of any such species should be limited in order to maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs and well above the level at which that species might become eligible for inclusion in Appendix I, the Scientific Authority shall advise the appropriate Management Authority of suitable measures to be taken to limit the grant of export permits for specimens of that species" (Article IV Para 3) (CITES 1973).

This so called "non-detriment-finding" (NDF) is a main element in the safeguarding that a RNR is used sustainably and as such is a further cornerstone of the CITES process.

In this regard it is worth mentioning that a thorough scientific understanding of the biology of a species is not always a requirement for determining whether harvesting for international trade is likely to be detrimental to the survival of a species. For example, harvests that are clearly small in relation to the overall abundance or distribution of the species, or those that have been established under an effective adaptive management programme, may be quite straightforward to declare as non-detrimental. On the other hand, for many CITES-listed species, decisions regarding NDFs are not as straightforward. For example, the status of the species in the wild may be relatively poorly known, harvests may be taken from unknown localities, and they could vary in intensity and harvesting method. However, Scientific Authorities often have to make a relatively rapid decision about NDFs despite a poor data basis. NDFs may therefore be seen and termed in a number of cases as a "risk analysis", in which Scientific Authorities have to assess the risk that a particular export (or import in the case of Appendix I) is detrimental as a function of current knowledge and uncertainty (CITES 2005). On this assumption, preliminary guidance for making NDFs was developed into a checklist to assist Scientific Authorities assess the multiple factors that may be important (CITES 2000a; Rosser and Haywood 2010; Smith *et al*. 2011).

In addition, CITES has adopted further measures to contribute to the quality of NDFs in the State of export:

- Resolution Conf. 11.18 states that if an importing CITES Party deems that an Appendix II or III species is being traded in a manner detrimental to the survival of that species it is advised to consult directly or via the Secretariat with the Management Authority of the country or countries of export involved, and in cases when trade with a State not party to the Convention is involved, even to apply stricter domestic measures. It is worth stressing that CITES advises the decision to apply stricter domestic measures in particular in regard to trade with non-Parties but not in regard to trade with Parties to the Convention (CITES 2000b); and
- should the Animals or Plants Committees of CITES have doubts regarding the sustainability of trade levels for certain taxa and/or countries of origin they can then submit this case to the Significant Trade Review and ask for specific information on how the NDFs are made and the harvest and/or export quotas are determined and if the case may be, recommend a set of actions to remedy the situation (CITES 2002).

In order to assist CITES Management and Scientific Authorities, a NDF workshop was held at Cancun (Mexico) in 2009, which identified, among others, ten potential research directions for the scientific community which, if addressed, could greatly assist the NDF process. The results of this workshop have been made available to CoP15 through CoP15 Doc.16.2.2 (CITES 2010a) and CoP15 Inf.3 (CITES 2010b). NDF discussions within CITES are ongoing.

The sustainable use of RNR as a conservation tool

However, in the course of time it became clear that there is even more to SU than to just protect RNRs from over exploitation and thus prevent the long-term decline of biological diversity. It turned out that *the sustainable use of a renewable natural resource could, in specific instances, be turned into a powerful conservation tool*.

Thus, in October 2000, the IUCN Policy Statement on Sustainable Use of Wild Living Resources adopted at the IUCN World Conservation Congress in Amman concluded that "The use of wild living resources, if sustainable, is an important conservation tool because the social and economic benefits derived from such use provide incentives for people to conserve them" (IUCN 2000).

In this context, at the 16th and 17th meeting of the CITES Animals Committee, a document was submitted on captive breeding, ranching and wild harvest production systems. The documents demonstrate what human ingenuity and inventive talent can do to successfully enhance the production and/or to reduce the mortality, especially in the early life cycles, of a RNR in the interest of its sustainable use and thus to contribute to its conservation (CITES 2000c, 2001). The documents list a number of different management regimes for the use and export of wild animals from corals and butterflies to amphibians, reptiles, birds and mammals, like closed-cycle captive breeding operations, captive production systems (including mariculture and aquaculture) and extensive management systems like ranching, captive rearing and wildlife farming. The latter involve the manipulation of habitat to maximize production and/or to minimize deleterious impacts on the naturally occurring populations.

An interesting project where the sustainable management of a RNR is contributing to the conservation of the species and subtropical forest habitats is the programme ELÉ on the Blue-fronted Amazon (*Amazona aestiva*) in Argentina (CITES MA of Argentina 2010a, 2010b, Website Dirección de Fauna y Flora Silvestres 2010):

Between 1980 and 1990 about 61.400 Blue-fronted Amazons were harvested annually for the export, for the domestic trade and for non-commercial local or folkloric use without any rules. Chicks in the Dry Chaco forests were collected in many instances by chopping down the nest-trees and thus by reducing the nesting possibilities.

The key objective of Programme ELÉ, officially implemented in late 1997, was to develop and enhance a model for the sustainable use of the Blue-fronted Amazon to the extent that such action constitutes an effective tool for conserving the species and its habitat. Special emphasis was placed on achieving two basic goals:

a) The legal owners or occupants of lands from which nestlings are collected must be the principal beneficiaries of the use of this resource and efforts must be made to ensure that their income increases sufficiently so that they can reduce productive activities with a high impact on the Gran Chaco ecosystem (primarily intensive forest use and clearing for crops); and

b) The surface area of the protected habitat must be increased.

One of the main points of the programme and the contract with the producers was then the determination of a maximum harvest quota for chicks, based on the density of active nests registered in each plot. Taking into account that the productivity of a successful nest is on average three chicks; the quota was set at one chick per nest in a given area. Further at least one chick was to be left in each nest, subject to harvest activities, so as to increase the chances of breeding success and favor re-occupation of the nesting site in successive breeding seasons. Another point was the requirement that no nest-trees were to be logged during chick collection.

Whenever necessary, equipment for climbing trees was provided and collectors were trained in the use of such equipment. Also the producers were instructed on how to the raise the chicks and were paid a fair price for every chick thus raised.

Today, almost 900 families, occupying 20 large communal properties of indigenous people (Wichis and Pilagas Ethnics) within the "Gran Chaco" Ecosystem participate in this programme.

They receive at least 7 times more profit for a specimen than they did before the project was in place or than could be derived currently from illegal trade.

The exporters are requested to deposit a certain amount of money in a "Trust Fund for the Conservation of Amazona aestiva" each time they export a legally obtained specimen of this species.

This fund is mainly used to finance the establishment of Natural Reserve areas to protect species' habitat in key areas. Indeed two Protected Areas have been created for this species: "Loro Hablador" Reserve, which protects 307 km^2 of Chaco forests; and "Lancitas Reserve", that protects 100 km^2 of the transition forests.

A programme like ELÉ only works if the "products" can be put on the market and are purchased. If the "products" can no longer be legally traded, the whole project and all that is linked to it is put at risk. This can happen when, for example, airlines arbitrarily make the unilateral decision to no longer transport exotic birds; and/or when a consumer country or, as in the case with the EU, a large number of consumer countries, ban the import of healthy parrots from such a project for health reasons and maintain this ban indefinitely, despite the original reasons for the ban no longer being valid. The long term damages done to conservation are devastating, not only in the context of this project, but of any CBNRM project.

From sustainable use (SU) to sustainable development (SD) through CBNRM

From the example of the ELÉ project it follows that similar projects can achieve more than help conserve species and habitats. They can also significantly contribute to the welfare of their human inhabitants and thus to the reduction of poverty.

This is, again, a new and additional dimension in the context of SU and brings us closer to the theme of CBNRM. In recent years, the idea of improving the livelihoods of affected local people through the sustainable use of species has also made its way into CITES:

- Resolution Conf.13.2 (Rev. CoP14) urges the Parties to CITES to make use of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, adopted at the seventh meeting of the Conference of the Parties to the Convention on Biological Diversity (CITES 2004a). Those practical principles provide a framework to assist all stakeholders on how to ensure that the use of the components of biodiversity will not lead to the long term decline of biological biodiversity. In fact, according to the authors, the sustainability of the use of biodiversity components will be enhanced if the practical principles and related operational guidelines are applied. One of these principles (4) says that adaptive management should be practiced, based on science and traditional and local knowledge. And another (12) states that the needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources.
- CITES further recognizes that commercial trade may be beneficial to the conservation of species and ecosystems and/or to the development of local people when carried out at levels that are not detrimental to the survival of the species in question, and that the implementation of CITES-listing decisions should take into account potential impacts on the livelihoods of the poor (Resolution Conf. 8.3 Rev. CoP13) (CITES 1992).
- In addition, the 2003 workshop on trade policy and economic incentives in Geneva encouraged Parties to take into account the needs of indigenous people and other local communities when adopting trade policies concerning wild fauna and flora (CoP13 Doc.13 Rev. 1; CITES 2004b, 2004c).

- As a consequence, CITES CoP15 encouraged Parties to take into account the needs of indigenous people and other local communities when adopting trade policies concerning wild fauna and flora (Resolution Conf. 15.2; CITES 2010c).

In fact, the idea of involving local communities in SU already appears in the preamble of the Convention, where it says that peoples and States are and should be the best protectors of their own wild fauna and flora (CITES 1973). Now "peoples and States" can only fulfill this role if they have an interest down to the local level of the people who share the living space with the resource to conserve and manage this wild fauna and flora, or in other words if there are incentives to manage the resource. The question therefore is: How can local communities be involved in conservation programmes involving SU?

At a symposium in the context of the CITES CoP8 in 1992 in Kyoto, Japan, Professor Marshall Murphree specified three points as being decisive for the effective involvement of local communities in such programmes:

1. **Decentralization**. Rather than the government making all wildlife management decisions from the green desks of a central base in the State's capital, it needs to allow for relevant decisions to be made at a lower, local level, closer to the ground and closer to the resource. Of course this implies training and the transfer of knowledge.
2. **Ownership**. The owner of the resource should not be the State or some government agency, but the people, preferably a local community. Again this implies the transfer of knowledge in particular about the concept of sustainable, long-term use of a resource, and the benefits to be gained by it through the devolution of tenure / legal ownership.
3. **Democracy**. Management decisions on such a particular resource, owned by, e.g., a community, should not be imposed upon such an owner, but must be made at the local level where all the perhaps quite practical pros and cons can be discussed.

Elinior Ostrom, who was awarded the 2009 Nobel Memorial Prize in Economic Sciences (shared with Oliver E. Williamson) for her "analysis of economic governance, especially the commons", came to similar conclusions: "Successful group management of common resources includes relatively small, self-governing collectives where the stakeholders agree to particular kinds of enforcement of agreed-upon rules." The Royal Swedish Academy of Sciences commented that "Elinior Ostrom's research was able to show how common resources can be managed successfully by the people who use them, rather than by governments or private companies".

Indeed there are numerous examples of CBNRM programmes, where the use and management of CITES species under these circumstances has proven highly successful in effectively conserving them and at the same time contributing to the welfare of the local communities (see, for example, the contribution on Namibia in this volume).

Does the CITES community act according to its own philosophy, recommendations and instructions?

It is therefore valid to ask if CITES, i.e. the global CITES community, acts according to its own philosophy and recommendations outlined above.

Indeed, in a small segment (paragraph 8.1 under species management) in Annex 6 of Resolution Conf. 9.24 Rev. CoP15 ("Format for proposals to amend the Appendices"), the proponent for a proposal to amend the Appendices is asked to provide details of programmes in place in the range States to manage populations of the species in question. In addition, where applicable, the proponent is to provide details of any mechanisms used to ensure a return from utilization of the species in question to conservation and/or management programmes (CITES 1994).

In spite of all good intentions, however, one may doubt if any such information, if given at all in the proposals, is taken into consideration and plays any role in the decision whether to adopt or not to adopt the proposal, with the exception of ranching proposals for crocodilians. Any CBNRM programme seems to be nice to know about, but is of minor importance when making a decision on listing, up-listing or down-listing a species on the CITES Appendices,

when proposals for trade bans are on the table and/or when the issuance of import permits is discussed by a Management authority of a consumer country. Nor are there any efforts made to develop, support and/or promote such CBNRM programmes, e.g. through incentive schemes. There is hope that this Symposium may contribute to improve this situation.

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Community-based natural resource management: an overview and definitions[1]

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CBNRM: a diversity of terms, approaches and interpretations

Community-based natural resource management (CBNRM) is, quite simply, (and as its name suggests) a term to describe the management of resources such as land, forests, wildlife and water by collective, local institutions for local benefit. In practice, the term "CBNRM" is often associated with schemes that a) are focused on terrestrial wildlife – particularly large mammals and reptiles; and b) involve some kind of commercial use of that wildlife in order to generate financial benefits (and hence a conservation incentive) for local people. Trophy hunting and wildlife "ranching" are common examples of this type of approach. But not everything that is labelled as CBNRM falls into these categories – and equally there is much in these categories that is not labelled as CBNRM. CBNRM not only takes many different forms in different locations and different socio-political and bio-physical contexts, but the term itself is used and interpreted in many different ways.

The term CBNRM itself is actually very southern African and not widely used in other regions of Africa – or indeed other parts of the world. In Francophone Africa, for example, the term CBNRM is not in common, practical usage. The more common language in West Africa tends to be about decentralised resource tenure and land management ("*gestion de terroir*"[2]), not specifically CBNRM. In Central Africa terms used most are community outreach (*sensibilization*), and sustainable resource management (*la gestion durable*). In East Africa, 'CBNRM' is not a commonly used term at all in an acronymic sense, even if it is widely practiced across the region. East African countries tend to feature relatively sharp divisions between different resource sectors- forests, fisheries, and wildlife. In the wildlife sector, the common terminology is 'community-based conservation' while in forestry 'participatory forest management' refers to community-based forest management where local people have secure devolved authority over forests and "joint forest management" where forests are co-managed between locals and state agencies. In southern Africa, however, Jones (2004) notes that the term refers very specifically to approaches where authority over natural resources (particularly wildlife and forests) has been devolved from the state to defined groups of resource users on communal land.

This diversity of terminology is highly confusing and means that one cannot possibly evaluate the advantages and disadvantages of CBNRM simply based on what different people in different places refer to as "CBNRM". Furthermore, not only is there a diversity in terminology but also in the spectrum of approaches by which local people are involved in the management of natural resources. These range from the centuries-old land and resource use practices which still persist to this present day – to relatively new projects and programmes which are conceived and implemented by external actors including government agencies, donors or conservation or development NGOs.

It is these "formal" approaches rather than traditional resource management practices that have attracted the umbrella label of CBNRM. But even within these formal approaches there is a huge variation in the degree to which local communities are actively involved in – and making decisions about – resource management (Table 1). While CBNRM is premised on the ability of local people to exercise a significant degree of authority over resources, in practice many initiatives have focused on protected area outreach, where communities are involved largely as passive beneficiaries of benefits generated in areas that are not under their control, and collaborative management efforts where power is shared between state agencies and local people (Barrow and Murphree 2001). In far fewer cases are we talking about community-led management – real CBNRM in the southern African sense of the term. In reality, even fully devolved CBNRM

1. This paper is based on a pan-African review of CBNRM compiled by IIED in 2009 and published as Roe, D., Nelson, F. and Sandbrook, C. 2009. Community Management of Natural Resources in Africa: Impacts, Experience and Future Directions. Natural Resource Issues Paper, IIED, London
2. Literally "management of land"

arrangements involve some degree of co-management; local communities are rarely sovereign autonomous entities, and the enforcement of their rights over resources inherently demands a significant role for the state in underpinning local management systems (Murphree 2000).

Table 1. A spectrum of approaches to community involvement in natural resources management

	Resource Proprietor	Community Role	Level of Local Participation
Protected Area (PA) outreach and benefit-sharing	State	Receive benefits from PA managers; cooperate with PA managers in protecting PA resources	Weak; participation limited to largely passive actions
Co-management (or joint management)	State but may be decentralised or deconcentrated	Cooperate with state authorities in management of the PA or resource in question	Medium; depends on the rights and responsibilities granted to local communities in a given situation
CBNRM	Local communities through collective representative body	Resource managers through either delegated usufruct rights (user rights) or outright proprietorship	High; communities as main proprietors, decision-makers, and beneficiaries.

Source: Adapted from Barrow and Murphree (2001).

Finally there is a very diverse range of CBNRM activities and "products" including:

- Sales of trophy hunting quotas and licences
- Involvement in wildlife tourism
- Forest management
- Non-timber forest products enterprise
- Community conserved areas
- "Ranching" and harvesting of wildlife or wildlife products – eggs, skins, fleeces, live young.

The specific shape that any CBNRM initiative takes is influenced by a number of factors – not least the historical structures that have shaped the land and resource tenure system. Perhaps most important is to remember that while CBNRM projects are often considered conservation projects nearly all of them are politically embedded and are responses to changing political structures, pressures for political reform, social movements, increasing democracy and so on. In Africa, for example, the end of the Cold War and collapse of communism in Eastern Europe contributed to a sudden resurgence of democratic governance in Africa in the late 1980's and early 1990's (Bratton and Van de Walle 1997). This seemed to usher in a new era of popular participation in government decision-making. The promotion of local participatory and accountable institutions with authority over lands and resources seemed to be an essential component of such political reforms. Indeed, throughout sub-Saharan Africa reforms were adopted during the 1990s which called for decentralization of natural resources and land tenure institutions and greater participation by the public and local communities (Ribot 2003).

CBNRM initiatives are also subject to external influences such as – in the late 80s and early 90s – structural adjustment processes, and the agendas of donor agencies, support NGOs – and increasingly the private sector. For example, government aid agencies changed their policies significantly in the late 1990s to focus on poverty reduction as a priority. Where they might have previously funded community-based conservation initiatives as part of a broad sustainable development agenda, they now expect their interventions to deliver much more significantly in terms of economic development goals. Nevertheless, while narratives and acronyms may change, the fundamental issues of resource tenure, governance, and institutional reform remain the same.

What has CBNRM achieved?

In thinking about the relationship between CBNRM and CITES the most pertinent question is to ask about the achievement of CBNRM is its conservation impact. But frustratingly, this is not a question to which there are clear answers for a number of reasons. First of all, given the diversity of approaches to CBNRM it is very difficult – if not downright dangerous – to attempt to generalise. Secondly, a major deficiency of formal CBNRM projects is the absence or paucity of quantitative and/or qualitative data on their social, economic and environmental impacts and frequently there is no monitoring system in place to collect such data. Thirdly, even where data is collected and impacts are measured there is rarely any assessment of causality and it is thus hard to attribute the measured impacts to the CBNRM initiative rather than to any other external variables. Finally, there tends to be little assessment of the counterfactual – what would have been the conservation outcome from an alternative approach to CBNRM? Many of these limitations are not the just problems of CBNRM but of all types of conservation and/or development initiatives but they are major limitations nonetheless.

Caveats notwithstanding, some notable achievements have been documented as the case studies in this volume and the examples below demonstrate:

- There are several contemporary CBNRM programmes that are beginning to result in improved management of land and resources over substantial geographic scales such as Namibia (largely wildlife) and participatory forest management in Tanzania.
- There is evidence that management by communities on land outside of protected areas might be better than in adjacent state protected areas.
- There is evidence of improved wildlife numbers in specific locations that can be attributed to contemporary CBNRM processes, but that conflicts between people and wildlife have not been adequately resolved.

Equally, though, CBNRM does not guarantee successful conservation outcomes – if communities decide that conservation is not the optimal land use in a particular area, then conservation ultimately won't work – the incentives have to be right. Commentators often make the mistake that these incentives must be financial, but while cash is obviously hugely important to poor communities, households and individuals, of equal if not greater importance is empowerment. As Nobel Laureate Amartya Sen (1999) has argued, development is as much about empowering people to take charge of their own lives and futures as it is about economic welfare, *per se*. Many commentators argue that community empowerment is one of the greatest impacts of CBNRM (e.g. see Arntzen *et al*. 2003; WRI 2005) – far exceeding any economic or environmental benefits.

- In the Luangwa Valley in Zambia, Child (2003) suggests that possibly more important than tangible benefits are the organisational capacity and empowerment effects created by the process of revenue distribution – which involves regular elections, bank accounts, audits, and a high level of participation in decision-making by villagers.
- In Tanzania, the Village Council budget of Ololosokwan village, Ngorongoro District, increased from about US$ 2,500 in 1995-1997 to nearly US$ 60,000 by 2003 as a result of the development of several village-private sector tourism agreements in the intervening period (Nelson and Ole Makko 2005). This precipitated a great increase in the capacity of the village to invest in social services and provide local benefits to village residents. It also increased the capacity of the village to advocate for its land and resource rights, using the financial capital from tourism to develop political capital in the struggle over land and resource tenure.

Perhaps the most significant empowerment impact is on land rights. Nearly all African countries have been influenced by historical trends during both colonial and post-colonial periods which served to centralize authority over lands and resources, and effectively dispossessed local communities (Alden Wily 2008). CBNRM goes some way to redress this. In West Africa, for example, one of the main advantages from land decentralization is cited as the strengthening of community borders from outside resource use and economic migration (Ibo 1997; Stamm 2000). By mapping and enforcing community boundaries, communities are provided with legal backing to prevent entry to, and use of, their lands.

Once again, however, CBNRM is no panacea. In Tanzania, Brockington (2008) reviews village governance in Rukwa region, and describes multiple incidences of coercion, criminality, lack of transparency, fraud, and high levels of taxation with no corresponding level of investment. In Botswana, there have been repeated instances of local trusts embezzling or mismanaging revenue from wildlife-based enterprises, which Rihoy and Maguranyanga (2007) attribute both to the role played by local elites and the way CBNRM has been facilitated, with a lack of long-term investment in building local capacity. Although there are widespread cases of mismanagement, fraud, and relatively dysfunctional collective governance at the local level, it is important to recognize that governance is an adaptive social process. Transparent collective local governance institutions are highly unlikely to emerge overnight, particularly where institutions are newly created, and take time to evolve. This has been one of the main lessons of CBNRM throughout sub-Saharan Africa.

CBNRM in Africa – some impacts and achievements

- In Zimbabwe, CAMPFIRE generated $20 million in revenues for local communities and district governments from 1989 to 2001, and also resulted in over 40,000 km2 of communal land being managed for wildlife production. More importantly, some stakeholders have adapted to the current economic and political crises by forming new types of relationships to maintain wildlife production systems on communal land.
- In Tanzania, more than 3.6 million hectares of forests and woodlands are now managed as Village Land Forest Reserves, entirely under the control of locally elected village governments, or as co-managed forests between villages and either local or central government.
- In Kenya, the development of community-level wildlife-based tourism ventures on communal and private land is making a major contribution to the total national conservation estate.
- In Cameroon, revisions to forestry law have enabled community associations and cooperatives to acquire the exclusive rights to manage and exploit up to 5,000 ha of customary forest, under a 15-year contract, resulting in the creation of over 100 new Community Forests.
- In Ghana, 200,000 hectares of forest have been demarcated under the Community Resource Management Area Policy of 2000. This gives participating communities full authority to control access and harvesting of resources within their management area. These changes are reducing the illegal activities in the areas under this type of management.

Limitations to CBNRM

It is thus important to be realistic about the achievements of CBNRFM. There are some very notable successes – including those described in the case studies that follow – but also some major failures. All too often these failures arise because the necessary preconditions for successful CBNRM are not in place. CBNRM is based, at least in its underlying conceptual foundations if not always in its implementation, on scholarship on common property resources and resource governance (e.g. Agrawal 2001; Ostrom 1990). Some resources have traditionally been managed collectively or communally, rather than individually, because the resources are subject to shared uses and it would be too costly to individualize the resource. At the same time, if such resources are left entirely ungoverned (or 'open access') then the resource will be subject to depletion through a 'tragedy of the commons' scenario whereby all users compete to access and utilize the resource.

A vast body of literature, building off of work by Ostrom (1990), Murphree (1993) and other early scholars of common property resource theory, describes the characteristics of both human communities and resources that tend to lead to sustainable collective resource governance systems i.e. successful CBNRM. These include having defined boundaries of the resource or land area and membership of the community, having rules which can be changed and adapted locally, and the existence of linkages across different institutional scales. It is also important, if communities are to invest in resource governance, that they are able to make decisions about how the resource is used, enforce rules governing use, and exclude outsiders from using their resources.

In so many cases where CBNRM is tried these essential preconditions – the majority of which relate to governance – are simply not in place. In particular, CBNRM has suffered from a lack of real devolution of authority – and hence responsibility over natural resources. The emphasis instead has been on participation, decentralisation, benefit sharing. There has also been an emphasis on externally driven initiatives which are by default nearly always short-term and time-bound – as is the nature of donor-funded "projects". This thus engenders a short term "survivalist" perspective rather than giving communities a sense of long term security of tenure over resources which is essential for sustainable resource management.

As the Millennium Ecosystem Assessment (MA) aptly notes, what is needed to sustain natural resources are strong institutions across different scales – with central government providing an appropriate enabling framework for security of tenure and management authority at the local level (MA 2005). But, perhaps the core paradox of CBNRM is that it requires strong local rights over resources which must be conferred on local people by the state (Murphree 2000). As Gibson (1999) and others have highlighted, individuals and agencies within the heterogeneous fabric of the central state often possess strong disincentives to enacting such reforms. As with broader economic policies, the design of natural resource governance institutions are often driven not by considerations of technical efficiency but by an array of personal interests revolving around patronage networks and the exercise of political power (Chabal and Daloz 1999; Nelson and Agrawal 2008; van de Walle 2001). Devolving or decentralising rights over valuable natural resources may conflict directly with such interests, and as a result many of the reforms called for by CBNRM initiatives have not been implemented. In East Africa, for example, despite sweeping reforms across the region since the late 1980s, major gaps remain between policy and practice in natural resource management (Barrow *et al*. 2000).

In large measure, these gaps are not simply a failure of governments to implement 'good' policy, but reflect the prevalence of informal institutions in ordering these societies, a general weakness of the rule of law, and generally patronage-based governance throughout contemporary Eastern Africa (see Chabal and Daloz 1999; Kellsall 2008). In Tanzania, vested political-economic interests in the logging and charcoal trade, both at national and local government levels, appears to be having a negative impact on communities' abilities to secure rights over and benefit from forests (Milledge *et al*. 2007). In the wildlife sector, policies designed to devolve authority over wildlife passed in the late 1990's have gradually been replaced by measures to centralise control over wildlife-based revenues generated on community lands (Nelson *et al*. 2007). For example, recent Ministerial regulations require tourism companies to cease paying villages directly for access to village lands and re-route all revenues through the Wildlife Division, and have led to considerable debate over who should benefit from wildlife and tourism investments on community lands (TNRF 2008).

Improving CBNRM to support CITES

CBNRM is at root a local governance reform process, and is best formally and strategically treated this way. CBNRM, like all local governance reforms, should be addressed as a 'cross-cutting' issue, given the way that resource governance, local government reform, and land tenure issues all interact and reinforce one another, within the context of macro-political processes.

If CBNRM is to become a more effective tool for supporting CITES then it is thus probably pertinent to ask how CITES can help support the necessary governance reforms that produce effective CBNRM. Both CITES and CBNRM have often been promoted – and critiqued – by international and national NGOs that see their primary vocation as wildlife conservation or animal welfare rather than local economic development. As a result, the interests of these organizations and those of local communities can quickly diverge. But this divergence is not sustainable in the long term and will not bring about effective conservation. Ultimately, CBNRM is about increased democracy, improved governance and increased local rights. In the 21st Century how can there be an objection to this? If there is no CBNRM what are the realistic, long term alternatives in this modern world we live in?

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Local and global wildlife conservation strategies to advance the well being of animals and people

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To halt the loss of biodiversity and advance the well-being of wildlife and people around the world, local and global wildlife conservation strategies must be complementary.

People living in rural communities are the primary stakeholders when it comes to conservation in their region. Their knowledge, appreciation and involvement may be essential ingredients for conservation success. A community-based natural resource management (CBNRM) approach may therefore be an appropriate strategy to help in reaching for ecological sustainability, one most important prerequisite for overcoming poverty and sustainably improving human livelihoods.

Worldwide, communities are increasingly interdependent and influenced by regional, national and global factors in different forms and intensities depending on geographical, economic, social, cultural, religious and political realities. For example, impacts of climate change, large-scale loss of biodiversity or international market dynamics and regulations can influence daily life in any community. People develop their values, ethics and objectives partly in reaction to these impacts, which then influence any community's conservation decisions and CBNRM priorities, as well as the international community's response to them (Lavigne 2006).

And vice versa: local activities may have regional or even global implications. For example, the lack of market controls in one country can result in low risk and high profit margins for criminals laundering illicit goods, and may fuel poaching in far away countries (as experienced in cases like tigers, rhinos and elephants). On the positive side, the maintenance and protection of species and their habitats at the local level helps to secure local and broader ecosystem services (e.g. elephant- or tiger-forests as Co_2-sinks and strongholds of biodiversity) that are of benefit to the entire world.

As what we do in one part of the world may affect wildlife and human beings in another part of the world, common global standards and objectives must be developed jointly and agreed on with mutual trust. This can be done by drafting standards like the CBD targets[1] or in developing practices under more specific MEAs like CITES. The involvement of local communities in the development and implementation of such standards is essential. Once developed and agreed to through democratic processes, global standards aimed at objectives such as halting the loss of biodiversity or eradicating poverty shall reflect our joint values and set the minimum requirements for all. Next, national policies and legislation must be adopted to ensure State compliance with these standards.

However, the broad nature of global standards may not always directly benefit the individual interests of every community or country at all times. This is particularly true in the context of commercial trade in wildlife where local economic interests often conflict with needed international measures to conserve the wild species throughout their range, such as those necessary to combat organized, international poaching and illegal trade networks. In such cases creative solutions must be found to meet local economic and livelihood needs, without necessarily resorting to consumptive-use of wildlife, like commercial trade. One progressive support may come from REDD++[2], the advanced version of the climate adaptation mechanism[3],

1. See the "2010 Biodiversity Target" of CBD (Convention on Biological Diversity)
2. Also introduced as the "Wildlife Premium Market+REDD; Creating a financial incentive for conservation and recovery of endangered species and habitats" by Eric Dinerstein, Ph.D., Keshav Varma, Eric Wikramanayake, Ph.D., Susan Lumpkin, Ph.D.; presented October 2010 in Nagoya, Japan
3. See REDD Web Platform

promoted by the Global Tiger Initiative[4] and the World Bank, which combines objectives of climate change adaptation, biodiversity goals and livelihood improvement by focussing on conservation areas of "flagship, umbrella" or "keystone species"[5] like tigers or elephants.

The narrow, but vital role of CITES

Parts and derivatives of wild animals and plants continue to be traded commercially throughout the world, too often at unsustainable levels. CITES was specifically designed to protect wild species[6] of conservation concern from further threat due to international trade. With this very narrow, but important responsibility CITES must regulate international trade in wildlife aiming to eliminate the risk that species are or may become threatened by this trade. To ensure that any trade in CITES listed species is not detrimental to the species or its role in the ecosystem, trade can be regulated, restricted or, if necessary, prohibited. Any such decision must be based on the best available evidence at the time and the precautionary principle[7] as incorporated in the "listing criteria"[8]. This is relevant to ensure the best possible conservation decisions, but also to preserve the integrity of this extremely important conservation convention.

With this understanding, IFAW fully supports CITES and helps to ensure that species needing such protection are appropriately listed on the CITES Appendices. Species threatened with extinction should be listed on Appendix I[9] when they are or may be affected by trade, even if the threatening factors are not trade related and trade has only a small impact or is potentially harmful.

Species should already be listed on Appendix II when they are "not necessarily now threatened with extinction but may become so unless trade" is subject to strict regulation in order to avoid "utilization incompatible with their survival"[10]. Such action of adequate restrictions and controls should ensure that these species will not need to be listed in Appendix I in the future and that controlled trade in these species will not need to be prohibited.

Unfortunately it seems that this opportunity is not widely understood. All too often an Appendix II listing is opposed on false grounds, e.g. because the species are not already threatened with extinction or because opponents argue that an Appendix II listing will cause economic hardship for rural communities, which are reliant on wild plants and animals for sustenance and income. As a result, listings are postponed and regulations are not in place until the species is under severe threat and an Appendix II listing is no longer sufficient to protect it.

The acceptance level for listing more species subject to internationally trade also suffers from distrust generated by never-ending high-level disputes over trade in "charismatic megafauna" where a small amount of trade seems to be defended as a matter of pro-trade principle and short-term gains, ignoring the tremendous costs for the federal and international community when such trade fuels poaching, disables effective trade enforcement and thus threatens the same species elsewhere. In a global market environment any form of legal trade in such a species, including trade in elephant ivory, tiger bones, rhino horn or whale meat, seems to make it impossible to bring the illicit trade under control, given limited enforcement capacities and growing consumer potential.

Obviously not all of the problems we are faced with in wildlife conservation or human development can be addressed through CITES, which is restricted to its narrow, but vital, role.

4. http://www.globaltigerinitiative.org/
5. Flagship Species are those that have broad popular appeal either globally or in the countries where they occur and can become the focus of conservation efforts. Typically, they range widely or are what biologists term „area-sensitive", meaning that they need large areas top maintain viable populations over the long term. Umbrella species are those that require large spatial areas and conservation of these species will also provide conservation cover for many other species. … Keystone species are vital for maintaining the health and integrity of ecosystems and their conservation will also help to conserve ecosystems.
6. See www.cites.org. According to Art. I „Definitions" in the text of the CITES Convention, „Species" are defined as „any species, subspecies, or geographically separate population thereof."
7. Precaution as defined in the CITES Res. 9.24 (Rev. CoP14) Annex 4 when considering proposals to amend the Appendices, where it says: "…by vitue of the precautionary approach and in case of uncertainty either as regards the status of a species or the impact of trade on the conservation of a species, act in the best interest of the conservation of the species concerned and adopt measures that are proportionate to the anticipated risks to the species."
8. See www.cites.org. As outlined in the CITES resolution Res.Conf. 9.24 (Rev. CoP14).
9. CITES Art. II(1).
10. CITES Art. II(2a)

Nevertheless, even when species are threatened by much more than just the impacts of trade, CITES can and should make a precautionary presumption that trade is a contributing factor to the species' decline. Economic reasons for supporting trade should not prevent CITES from acting unless that trade is proven to be non detrimental. In full respect and support of the common goals of poverty alleviation and the need to improve livelihoods CITES must call on other more appropriate international bodies (e.g. CBD) and governments to take action. CITES itself may not consider these goals with regard to listing decisions themselves, but in the implementation process at the national level (e.g. in CBNRM programmes)[11].

Act locally, within a global framework

Therefore, the prime question with respect to CBNRM programmes is how governments take local concerns into account as part of their overall development and conservation strategies when implementing CITES decisions. In this respect, IFAW supports the development and implementation of CBNRM programmes and encourages economically strong countries (e.g. EU Member States) to assist appropriately. Simultaneously, countries like the EU Member States shall maintain their own regulatory regimes at the necessary degree, including stricter domestic trade measures, to fulfil their international conservation obligations and ensure protection of wild species from unsustainable and illegal trade.

IFAW works with communities, national governments and through international conventions to reduce commercial exploitation[12] of wild animals where we believe it endangers wild animal populations, risks species extinction, leads to degradation of biodiversity or causes tremendous suffering of individual animals. In this regard, IFAW assists Parties in the implementation of e.g. the CITES Convention, particularly in policy development and enforcement capacity building. To build and maintain adequate enforcement capacity in a country with substantial wildlife trade routes or markets is a real challenge for any country and especially for the poor. But such endeavour becomes almost impossible if legislation is weak and exemptions are complex. Again ivory is a prime example where an unmanageable burden is put on enforcement agencies where illicit trade is camouflaged by legal trade. In such cases only a strict global trade prohibition may enable enforcement authorities to be successful.

Ecological sustainability and value of nature

Generally, in this debate it is vital to consider what "sustainability" should actually mean as the term is vague and open for interpretation. When it was accepted in 1992 as a common goal to achieve "sustainable development" and "sustainable economies", many hoped it would pave the way to improved livelihoods for poor people and a lifestyle more balanced with nature for everyone. The reality is that since the inception of this "sustainable use" mantra in Rio the world has lost more biodiversity, more species, more natural habitats and therefore more human livelihoods than ever before in our history. There are many reasons for this, but one reason is that the emphasis of the global community has been placed on the economic sustainability of development, rather than the ecologic sustainability of such.

In 2010 "The Economics of Ecosystems & Biodiversity Study"[13] has radically highlighted the shortfall and alerted us all about the economic risk or economic potential if we do not or do reach true ecological sustainability. For example:

- "The world's 100.000 National Parks and protected areas generate wealth via nature-based goods and services equal to around $5 trillion but only employ 1.5 million people — indicating a potentially significant new source for employment generation.
- TEEB estimates that securing these ecological services worth upwards of $5 trillion might require an additional investment of just over $ 50 billion a year – a good cost benefit ratio of 100:1."[14]

11. Resolution CITES Conf. 8.3 (Rev.CoP13)
12. Commercial exploitation includes any instance in which humans gain economically from the use of animals; the commercial trade in wild animals, their parts and derivatives is one example.
13. See TEEB Study
14. See http://www.cbd.int/doc/speech/2009/sp-gincana-message-unep-ed-en.pdf. CBD COP10 opening statement from Achim Steiner, Executive Director of UNEP

In Nagoya, Japan the 10th Conference of the Parties to CBD finally concluded that "the impacts of use of natural resources [must be kept] well within safe ecological limits"[15], which is in congruence with the precautionary approach to conservation called for in Principle 15 of the Rio Declaration. Nevertheless, we have already lost 20 years since Rio to learn that it is not enough to reach for partial degrees of sustainability, but to reach for real "ecological sustainability"[16] and so effectively halt the loss of biodiversity as the natural basis of all human livelihoods.

To halt the loss of biodiversity, conservation may not be limited to the protection of already endangered or threatened populations and species, but must prevent them from becoming threatened or endangered in the first place. Therefore new, alternative conservation and development avenues with less wildlife consumption must be found, which improve livelihoods and overcome poverty on an ecologically sustainable basis.

For this, the appreciation of the intrinsic value of nature may be relevant as already reasonably recognised in international conventions, like in the preamble to CITES[17] and CBD[18]. IFAW believes that the intrinsic value of wildlife must be recognised as equally important as all of the other values otherwise conservation strategies will lack a substantial component for success. Once it is accepted that biodiversity has value beyond that of mere commodity we will not only treat wildlife differently, but can more openly appreciate all the other benefits from healthy biodiversity-rich ecosystems.

IFAW supports community efforts

IFAW collaborates with communities around the world to assist in the development of ecologically sustainable animal welfare conservation strategies. The following are three project examples from Asia and Africa:

1. Namunyak Wildlife Conservation Trust (NWCT), a community conservancy in northern Kenya. This area is habitat to the largest elephant population in the country outside protected areas and one of the declared objectives is to develop harmonious co-existence of local communities and elephants in Kenya. We are focussed on enforcement capacity building to combat poaching, mitigate human-elephant conflicts and to foster economic development and improve livelihoods. According to NWCT, the communities' strategy is widely accepted but recently challenged by an upsurge in elephant poaching "due to increased black market prices of ivory" in Asia. The expansion programme has included more community land and has opened up new potential for further tourism investment, which is the backbone of community revenue development.
2. The "Greater Manas" is a biodiversity hotspot and covers an area in the North East of India and parts of Bhutan. The area includes overlapping National Park, Elephant Reserve and designated Tiger Reserve area and more. The Bodoland Territorial Council of Assam and the local community councils are the most important stakeholders. As much as 50 per cent forest cover and much of the fauna was lost in ethnic political and civil unrest in the area. However, with the formation of a democratically elected government in Bodoland this autonomous district council has led the conservation efforts since 2003. Manas National Park, a UN World Heritage Site, got a fresh lease on life as the local tribal government effectively tripled the area under it, calling it "Greater Manas". Tourism is slowly growing and new farming techniques are being trialled with the support of the national government. IFAW collaborates with the local communities in many areas, such as wildlife conflict mitigation measures, education, enforcement capacity building, cross-border collaboration and science-based re-introduction of wildlife, e.g. rhinoceros, elephants and swamp deer.

15. Adopted in Target 4 of the CBD Strategic Plan
16. **Ecological sustainability:** the maintenance of the structure (species composition and the abiotic environment) and function of ecosystems over time and space, including but not limited to: the abundance (population sizes) of individual species, the diversity of species comprising the biotic (living) community (often called biodiversity); the abiotic (non-living) components, such as: soil productivity, water quality and quantity, air quality; and ecological processes including nutrient cycling and energy transfer (including predator prey interactions).
17. See CITES Preamble: "Recognizing that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come;" and "Conscious of the ever-growing value of wild fauna and flora from aesthetic, scientific, cultural, recreational and economic points of view;"
18. See CBD Preamble: "Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components," and "Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere"

3. In 1999, conflicts between poor farmers and elephants in the Yunnan province of China were escalating, largely because suitable habitat for wildlife was decreasing as a result of deforestation, excessive hunting, human population growth, and agricultural encroachment on forest land. IFAW facilitated a series of public discussions over two years where the locals identified the root problems behind the conflicts and developed potential long-term solutions. As a result, the project began to establish alternative income streams to replace those that compete with elephants for land use; built local capacity in farming techniques and financial management; initiated a micro credit cooperative and raised awareness about elephant protection, safety measures and encouraged harmonious co-existence with wildlife. With the micro credit loans many families set up alternative income generating ventures, including growing flowers, tea and vegetables, raising ducks and transporting fresh produce into urban cities, thus reducing reliance on previously-grown crops which attracted elephants. The project established a sense of pride in the local community in their role as stewards of the land where the last remaining wild elephants live in China.

As an international NGO our primary role of collaboration is to bring needed assistance to communities and help that global and local wildlife conservation strategies complement each other. Our support on the ground usually includes cooperation with local and federal authorities; scientific research on wildlife population and habitat utilization; establishing wildlife monitoring networks; supporting anti-poaching patrols and cross-border cooperation to combat wildlife crime; veterinary assistance and wildlife conflict mitigation, rescue, rehabilitation and if feasible release of animals, as well as education and awareness raising projects in villages and schools.

Conclusions

To conserve biodiversity and the enormous economic value of ecosystems as the basis for all human livelihoods, complementary local and gobal wildlife conservation strategies are needed. These strategies must consume less wildlife, improve livelihoods and overcome poverty on an ecologically sustainable basis. This needs a shift in conservation strategies away from endangered or threatened species to a strategy that focuses on preventing all species from becoming threatened or endangered in the first place.

Common global standards and objectives must be developed in mutual trust, and once developed and agreed these need to be adopted in policies and legislation on all levels. People living in rural communities are key stakeholders in such a process and their involvement can be essential for conservation success.

Because of their global nature, however, these standards may not always benefit directly individual interests of every community and CBNRM project. This may be particularly true in the context of wildlife trade, where these interests can conflict with the need to take strong and effective measures, through CITES or other instruments, to conserve wild species across their whole range.

Whenever a species is in decline and trade is or may be a potential factor CITES must act to the point where the trade is proven to be ecologically sustainable and the risk of detrimental impact is minimised, even if socio-economic aspects might suggest otherwise. While the common goals of poverty alleviation and the improvement of livelihoods deserve the fullest support of all, these cannot be a reason for opposing effective trade restrictions under CITES aiming to eliminate the risks of unsustainable trade.

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Between “tinned wildebeest” and animal rights: How do donors view sustainable wildlife utilization?

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Abstract

ODA development paradigms have strongly influenced donors wildlife and sustainable utilization policies. Paradigm shifts, like from the large scale “demonstration” projects of the 1960s and 1970s to the target group – self help orientation – and integrated rural development phase, also formed the donor support to wildlife management.

As ODA donor policies aimed at poverty alleviation throughout all its phases, CBNRM was easily embraced by donors. The target group and self help orientation phase thus corresponded with increasing support for CBNRM approaches, like CAMPFIRE, ADMADE and the Selous Conservation Programme.

ODA went on in the 1990s to the structural adjustment and sector- and budget support phase, the poverty reduction strategies and the mode of delivery and ownership discussions characterized by the Paris Declaration and the Accra Agenda for Action (2008). In wildlife management and CBNRM this was accompanied by a shift in funding to more normative work. The type of projects changed from direct implementation of CBNRM to more policy-formulating approaches, but sustainable use as a means to create income at the local level and to create incentives for conservation remained a strategy.

With the increasing orientation of aid towards non-governmental organizations from the 1980s onwards, the exclusive “biological diversity” arguments, namely the preservation of biodiversity without consideration of people, became stronger. In addition, the conservation agenda was to a certain extent “hijacked” by animal welfare organizations, which oppose sustainable use for fundamental reasons. Conservation NGOs and animal welfare organizations competed for the funding, the latter using conservation rhetoric.

Still, the orientation of ODA towards poverty reduction, re-enforced in the Poverty Reduction Strategies and The Millennium Development Goals, continues and leads to support for sustainable use projects and programmes. The global warming and climate debate has strengthened this trend: when discussing the practical aspects of conservation of carbon sinks like forests and wetlands it has become clear that this cannot be implemented without an incentive-based system to modify behaviour of the concerned populations towards the wise use of their environment. CITES can be part of such an incentive system.

Introduction

Donor views and policies regarding this subject are as volatile as conservation and development assistance paradigms in general. In addition, sustainable wildlife utilization is emotionally loaded: it usually involves killing, which calls the animal welfare and animal rights organizations into action. The ODA (Official Development Assistance) has gone a long way since the phase of the large scale “demonstration” projects of the 1960s and 1970s to the target group, self help orientation and integrated rural development phase. In the late 1980s and early 1990s it went via the structural adjustment programmes to the sector and budget support orientation of ODA, closely connected to the poverty reduction strategies and the mode of delivery and ownership discussions characterized by the Paris Declaration and the Accra Agenda for Action. Recently, the ODA-strategies went back to more technical questions as are, for instance, defined in the MDGs and the climate change debate.

Parallel to these developments the large conservation NGOs have developed their own agendas and strategies, less hampered by the "straitjacket" of the ODA-doctrines. In certain contexts they have practically become official donors and behave like them. As ODA is increasingly funding their projects and programmes too, their rhetoric followed the one of the ODA to a certain extent, but their focus was always more technical and more project- than policy or mode of delivery-orientated.

This paper tries to go through these phases and to show how these development paradigms influenced and continue to influence donor support in the sector. It focuses on Africa, but most of the observations are also valid for the other continents of the developing world.

The "abattoir" projects

Development assistance in post colonial Africa in the wildlife sector started with the so called "abattoir" or "tinned wildebeest" projects: They corresponded with the "model" or "demonstration" farm and industrial projects of the early days of the ODA. The first of this type of project was probably the Kenyan Galana Wildlife Management Scheme supported by the British Government from 1958 to 1964: it followed the right idea to involve the traditional elephant hunters, the Wata or Waliangulu, but used the wrong approach: the Wata expert hunters were in practise relegated to helpers or spectators of the elephant cull, and the ivory from the elephant cropping was not part of the financial retention (Parker 2004).

Another fitting example is the German funded project with the title 'Preservation of wildlife, utilization of wild mammals and processing of game meat, Tanzania'. Interestingly the rationale was an alleged overpopulation of wild animals in the Serengeti ecosystem, which was supposed to lead to overgrazing. In retrospect this is wrong, as the present wildlife numbers show that in the 1960s there was only a quarter of the number of wildebeest and other large grazers in the Serengeti as are at present (DSE 1964, 1968), and there is now no overgrazing.

The Serengeti scheme was characterized by little regard for the local population and no realistic economic analysis. There was also a preoccupation with recipes. From the present point of view this sounds funny, at that time it was serious, however: 57 different recipes and spices were tried like "meat in its own juice", "canned stewed meat". In the project document someone had calculated that one could make 1,800 tins out of an elephant (DSE 1964). This lack of feasibility proved to be the downfall of the project. Examples of "abattoir projects include the FAO Luangwa Valley Elephant and Hippo Culling Programme, and the Uganda Queen Elizabeth NP Hippo and Elephant culling programme (Parker 2004).

One has to mention that capacity building was also part of this "phase", and definitely more successful: FAO, for instance, names as among the most important achievements during this phase the founding of the first two regional wildlife training colleges in Africa: the Mweka Wildlife Training College in the United Republic of Tanzania for English-speaking Africa, and the Garoua Wildlife Training College in Cameroon for French-speaking Africa (FAO 2011).

Mweka and Garoua were supported by a multitude of donors and conservation NGOs, among them Germany, Japan, WWF, AWF and FZS. Both institutions in fact trained the majority of the future wildlife leaders of many countries in their regions, until university degrees became more fashionable than practical training and experience.

Rural development and target group orientation

A paradigm shift in ODA happened in the late 1970s: towards target group- and self help orientation and rural development.

What had happened was that the "industrial" wildlife management schemes had failed, as had the large scale development projects in other sectors, like the agricultural "model" or "demonstration" farms, which were supposed to set examples for local farmers on how to improve agricultural practices. One reason for the failures was certainly the wave of nationalization and the political instability that swept through many African countries. The other

and more important reason was the lack of economic feasibility of these projects. The production costs were often simply exceeding the returns. This applied to the wildlife schemes as well as to the techniques to be transmitted to small scale farmers by the model farms.

In the field of wildlife management, it led to support of approaches like CAMPFIRE, ADMADE and related schemes, but also Tanzania's Wildlife Management Area Approach and the conservancies' approach of Namibia.

One could also observe that in the early 1970s there was an increase in wildlife utilization with other attributes: cheap, efficient, using appropriate technologies, labour-intensive and local population-orientated – we call this poaching. It was also not sustainable, but in many countries it did away with the overpopulation seen as a threat to ecosystems by the early planners: game numbers, especially of elephants and rhinos, were much reduced across Africa, with the exception of some southern African states.

The newly independent African countries have started out with the traditional colonial National Parks concept: in fact the element of central government control, especially in wildlife management, prevailed in many countries until fairly recently, in some countries even until now. Many new protected areas were created by the newly independent states and managed under the so called "fences and fines" approach. This approach was fairly successful for a while at least in Southern and Eastern Africa, but due to the inability of the governments to implement their wildlife legislation outside parks and reserves, law enforcement outside PAs on communal land was notoriously weak. Consequently, in the 1970s concepts of inclusivity and incentive-based conservation emerged in Africa and internationally (Adams and Hutton 2007): on the international plane this trend manifested itself in the UNESCO Man and Biosphere approach and the IUCN World Conservation Strategy of 1980.

It is to be noted that the first community-based conservation strategies like CAMPFIRE were African approaches (Child 2005), as was the Administrative Management Design for Wildlife Management Areas ADMADE in Zambia. When CBC was started in Africa, it was, however, not a new concept. CBC is widely practised in Europe and elsewhere, where landowners and communities have managed their natural resources for centuries (Baldus and Siege 2001).

The underlying rationale of these schemes was a practical one: community participation in, and their derivation of tangible benefits from, wildlife management was seen as a more effective way of conserving wildlife and ecosystems than the fences and fines approach. The rationale combined conservation and development objectives is that "conservation can best be achieved by giving rural people a direct economic interest in the survival of species" (Adams and Hutton 2007). This approach appealed to donors, and some adopted this paradigm shift quickly in their ODA, because it allowed for an integration of target group orientation (subsistence farmers) and self help approach with natural resources management through sustainable use.

The following are some examples of CBNRM/sustainable use projects under ODA:

1. USAID Namibia (1995): Living in a Finite Environment (LIFE) Project. With the financial support of Endangered Wildlife Trust, WWF. Main goal: to promote sustainable natural resource management by giving local communities rights to wildlife management and tourism.
2. DFID East Cameroon: establishment of a Community Hunting Zone that realistically reflects its existing hunting territory and fits in with current legislation.
3. German Development Assistance: Selous Conservation Programme.
4. USAID Kenya (2011): collaborated with the Govt. of Kenya, internationally and nationally renowned NGOs and community-based organizations (CBOs) to maintain wildlife migration corridors and dispersion areas.
5. USAID CAMPFIRE Zimbabwe: support to capacity building and income generation for communities.
6. NORAD Zambia (2007): Luangwa Integrated Resource Development Project (LIRDP) and its successor, the South Luangwa Area Management Unit (SLAMU). It aimed at utilizing wildlife as a natural resource to improve livelihoods of the people in the LGMA, addressing rights, access to and ownership of natural resources.

The "structural adjustment" and "organizational development" phase

It seems that ODA development paradigms evolve in roughly 10-year cycles: At the end of the 1980s and the early 1990s the self help approaches were replaced by a drive to initiate structural reforms in the recipient countries. The rationale behind this was the experience gained in ODA that work at the grass root level cannot be effective when the policies and framework conditions are not right and when the recipient countries' institutions and organizations implementing ODA are not set up to deliver services to the public effectively. The Structural Adjustment Programmes promoted by IMF and WB epitomise this period. In the Natural Resources Management Sector, this approach led to projects and programmes that aimed at reforms of policies, laws and regulations governing wildlife, forests and land management.

FAO is traditionally the largest donor in wildlife management. FAO states that during the 1990s their field programme became smaller because member countries decided that the organization should focus more on normative, policy-related work (FAO 2011). The following provide some examples:

1. USAID and others: Planning and Assessment for Wildlife Management (PAWM) advice to the wildlife sector in policy formulation, Tanzania.
2. FAO: Institutional Support for Protection of East African Biodiversity – support to government and NGOs with conservation and management of natural resources; to enhance capacity to deal with the new theme of biodiversity conservation.
3. GTZ and KfW: CBC Programme Tanzania – promote relevant national and local legislation.

Programme and budget support

The structural adjustment was accompanied by a move away from projects to support sectors through host country funding structures, up to pure budget support. The reason for this change in direction was that failures of ODA were perceived to be caused by "lack of ownership" in the recipient countries and the so called "projectitis" (projects not strategically placed).

Some see it as all but a bankruptcy declaration for the development cooperation: Most donors started to finance Government budgets, often via ill equipped and unsuited line ministries. Objective-orientated interventions made way for long term-subsidization of government institutions (Nuding 2004).

Logically, this had to go hand in hand with stronger donor interventions at the highest political level, as budget support can only be justified for the taxpayers at home when the policies are right: thus came about the poverty reduction strategy papers, in which countries committed themselves to orientate budgets towards poverty reduction. Most of them are now in the 3rd 5-year phase and are called differently, for instance the Madagascar Action Plan, or Growth and Transformation Plan of Ethiopia.

The Paris Declaration, the Accra Agenda for Action and the EU backbone strategy all refer to the so-called "modes of delivery". This means they deal with the methods of implementing aid programs rather than with the sectoral and technical aspects of development cooperation. At that time the discussion on methods threatened to supersede the discourse on the content and technical aspects of ODA. Consequently, fewer ODA-funded projects in NRM were implemented during this period, and they very much focussed on policy issues.

NGOs, UN and Rio

UN organizations with environmental mandates were formulating principles, policies and approaches in the field of conservation since the 1970s, like UNESCO with its Man and Biosphere programme, and the IUCN with the World Conservation Strategy of 1980. In 1992 development issues were tackled on the United Nations Conference on Environment and Development held in Rio de Janeiro (1992): Especially the Agenda 21 formed future environmental thinking by setting out a path for action to be taken in every area related to human impact on the environment. The CBD emerged from Rio and had a very strong impact on natural resources policies formulation.

While ODA, especially the bilateral aid, went down another path (preoccupation with modes of delivery), the Rio principles were eagerly adopted by the conservation NGOs. This, in conjunction with the NGO-orientation of ODA, led to vastly increased NGO-funding and tremendously strengthened the influence of the large conservation NGOs. WWF, CI and WCS all embarked on conservation planning and ecosystem monitoring agendas. WWF, CI and some others created their own biodiversity mapping procedures and methods (Key Biodiversity Areas, Biodiversity Hotpots, Important Bird Areas, to name a few). The definition of hotspots was not "simply a contribution to scientific knowledge and the improvement of conservation planning in general, it was also a statement of the brand of the organization and its capacity for leading-edge strategic thinking" (Adams and Hutton 2007). These hotspot definitions are regarded by others as problematic because they imply "a biological definition of conservation dissociated from human influence" (Adams and Hutton 2007).

Animal welfare organizations also participated in the debate, even though animal welfare is at best loosely connected with conservation. This led to a blurring of borders between animal welfare and conservation arguments. For conservation NGOs, this meant that budget lines of donor agencies for funding conservation and biodiversity were also accessed by animal welfare organizations, using conservation rhetoric.

The large NGOs became very donor-like and were even perceived by recipient countries as donors: In Madagascar for instance CI, WWF and WCS participated in donor assistance group meetings as full members. CI was the second largest "donor" there, larger than the German bilateral programme and only second to the WB. Funding came mostly from ODA sources through NGO budget lines and the focus was very much project-focussed, thus circumventing official ODA strategies as defined in the Paris Declaration and Accra Agenda for Action.

The Millennium Development Goals and climate change – back to the technical agenda

The debate about how best to direct ODA in the past decade has been dominated by the MDGs. Only MDG 7 deals with environmental issues, but points out the cross cutting character of environmental sustainability for all other goals. Millennium Development Goal 7 is entitled "ensure environmental sustainability", and its target 7A states: "integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources" (United Nations 2001). It also sets as a goal an increase in the proportion of land area covered by forest, a reduction in CO_2 emissions and the consumption of ozone depleting substances, a decrease in the proportion of total water resources used, and a decrease in the proportion of species threatened with extinction (United Nations 2001).

MDGs and the climate debate have brought the discourse on ODA back to more technical terms. Climate change is nowadays on everybody's lips. The UNCCC conferences like Copenhagen and Cancun are mega-events. The press is full of information on the effects of climate change which already takes place, especially global warming: glaciers melting, island states drowning, deserts developing especially in Africa, and increased fighting for scarce natural resources.

It is consensus that environmental problems of truly global significance have to be solved and that they cannot be solved in dissociation with the populations that use that environment. Funding levels for environmental programmes have increased tremendously and private funding is also available through market mechanisms like carbon credits.

Regarding the wildlife sector, donors try to redirect their ODA from traditional wildlife management to climate adaptation and mitigation, sustainable agriculture and food security. Donor-funded environmental programmes try to improve natural resource management while providing incentives for biodiversity conservation, addressing climate change, and sustainable forest conservation (BMZ 2008).

ODA-funding of wildlife conservation

ODA-funding of environmental actions in developing countries, especially in Africa, is regarded to be crucial for the sector. Only in recent times has the private sector-funding reached a relevant share. Unfortunately, ODA flows have been volatile and have even decreased for lengthy periods, especially in the 1990s, due to ODA-fatigue among the donor countries and their own economic difficulties.

UNEP states correctly that "the picture with regard to the trend in financing environmental action in Africa is fragmented and incomplete" (UNEP 2001). It is impossible to calculate the amount of donor funding that went into the wildlife subsector, because in the statistics it appears as part of funding for the environment, which includes sectors like forestry, fisheries and sustainable land management. It is even more impossible to determine which amounts and percentage of donor funding went into CBNRM projects, as the statistics are simply not available.

Conclusion

Throughout its history ODA aimed at improving people's livelihoods and to alleviate poverty. Conservation strategies and the sustainable use of biodiversity (BMZ 2008) were supposed to contribute to this aim. Thus conservation strategies were often measured not only by biodiversity, but also by human welfare indicators. Consequently, the CBNRM approach was embraced by most donors because it combined people's welfare with conservation objectives. This did not fundamentally change with the paradigm shifts of aid delivery that followed, but the type of projects changed from direct implementation of CBNRM to more normative and policy-formulating approaches.

With the increasing orientation of aid towards non-governmental organizations from the 1980s onwards, the exclusive "biological diversity" arguments, that means preservation of biodiversity without consideration of people, became stronger. In addition, the conservation agenda was to a certain extent "hijacked" by animal welfare organizations, which oppose sustainable use for fundamental reasons. Still, the orientation of ODA towards poverty reduction, re-enforced in the Poverty Reduction Strategies and the Millennium Development Goals, continues and leads to support for sustainable use projects and programmes. The global warming and climate debate has strengthened this trend: when discussing the practical aspects of conservation of carbon sinks like forests and wetlands it has become clear that this cannot be implemented without an incentive-based system to modify behaviour of the concerned populations towards wise use of their environment. CITES can be part of such an incentive system.

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FAO's work on sustainable use of bushmeat: Engaging in international policy processes and finding practical solutions at the local level

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Introduction

The Food and Agriculture Organization of the United Nations (FAO) helps developing countries and countries in transition improve their agriculture, forestry and fisheries practices to ensure good nutrition for all. This is achieved not only by engaging in normative work, but also by implementing best practices and innovative solutions through practical field projects. FAO is a source of knowledge and information and acts as a neutral forum where all nations meet to negotiate agreements and debate policy. The FAO Forestry Department's work on wildlife and protected area management aims to conserve native faunas together with their natural habitats and to improve the livelihoods of rural communities in developing countries in collaboration with major international partners. Activities include the preparation, publishing and dissemination of concepts, studies, policy recommendations, guidelines, best practices, and other educational resources; support to regional networks; design and implementation of field projects; the organization of and participation in technical workshops, expert meetings and information events; as well as capacity development and training. FAO is committed to conserve biodiversity and ensure that the use of wildlife resources is legal and sustainable and does not pose a health risk to people and animals.

Forests cover almost one third of the global land surface and provide essential services that support human livelihoods and well-being (FAO 2010 a). They comprise the majority of terrestrial biodiversity and tropical and subtropical forests are major biodiversity hotspots. Forests store about half the total carbon contained in land ecosystems (Brodie and Gibbs 2009; FAO 2010a).

Context

Of the many threats that forest wildlife faces, none has had a more severe impact than the unsustainable and often illegal hunting and harvesting for commercial trade of wildlife and wildlife products, including the pet trade, across the developing world (Kaeslin and Williamson 2010). As a result of this faunal depletion, the remaining primary tropical and subtropical forests are widely becoming empty of large vertebrates ("empty forest syndrome"). The consequence is not only the loss of species and genetic diversity, but also weakened ecosystem functionality and resilience and increased potential for novel diseases to emerge that pose a health risk to humans, livestock and surviving wild animal populations. Healthy forests rely on large and small mammals, birds and insects as essential pollination and/or seed dispersal agents for regeneration. Many of the most carbon-dense tree species depend on large vertebrates to transport their seeds and ensure success¬ful reproduction. In this way, overhunting is also reducing the forests' potential for carbon storage (Brodie and Gibbs 2009). This vicious cycle has been referred to as the "bushmeat crisis" (Nasi *et al*. 2008).

According to the CBD Liaison Group on Bushmeat, bushmeat hunting refers to the harvesting of wild terrestrial animals in tropical and subtropical forests for food and non-food purposes, including for medicinal use (CBD 2009). In Central Africa alone, an estimated 579 million forest mammals are con¬sumed annually (Fa and Peres 2003) which add up to about 5 million tonnes of dressed wild mammal meat (Fa *et al*. 2002). Earlier estimates have been four times lower (Wilkie and Carpenter, 1999) and may have been underestimating the magnitude of the problem (Fa *et al*. 2002). In the Congo Basin, the breakdown in traditional tenure systems and local rules regulating wildlife use, widespread availability of firearms and snares, weak governance and legal frameworks together with the failure of top-down regulation and enforcement have led to enormous growth of bushmeat markets and overhunting of protected and non-protected wildlife species alike. Hunting rates in tropical Africa are estimated to be more than six times greater than sustainable levels and in Asia large animals are already gone from most tropical forests (Bennett

2002; Milner-Gulland and Bennett 2003). In East and Southeast Asia, the severity of the problem is related to high human population densities, a long tradition of consuming wildlife products for medicinal use and the exceedingly rapid economic growth.

Productivity of tropical forests for wild meat is at least an order of magnitude less than in more open habitats, such as savannahs (Milner-Gulland and Bennett 2003). If people depend solely on wild meat for their protein, human population densities of more than one person per square kilometre cannot be sustained in tropical forests (Robinson and Bennett 2000). Hunting rates are already unsustainably high across large areas of the tropics (Bennett 2002). Using published data, a severe loss of bushmeat protein has been predicted for the future (Fa *et al*. 2002). It has been estimated that if current extraction levels continue, there will be a significant decline in wild protein by 2050, and there will be insufficient non-bushmeat protein available to replace the amounts supplied by wild meats (Fa *et al*. 2003).

The rapidly growing commercial urban markets, both domestic and international, are the most significant drivers of the unsustainable bushmeat exploitation. Consumption is both by rural com¬munities and by urban consumers, who are often at the end of supply chains that are hundreds of kilometres long (e.g. Fa 2000). Often the bushmeat trade is facilitated by logging activities, because logging roads provide easy access to increasingly remote forests and logging trucks are used for transporting bushmeat. Moreover, logging companies often regard bushmeat as a free food supply which relieves them of the responsibility to provide for their labourers (Nasi *et al*. 2008; Kaeslin and Williamson 2010).

Commercial wildlife trade also poses a threat to wildlife populations beyond the tropics, for example in Mongolia's temperate steppes and woodlands – mainly driven by the large Chinese market (Wingard and Zahler 2006). Even in remote and protected areas, the commercial bushmeat trade driven by markets far away threatens the survival of not only the wildlife, but also the indigenous and local communities which depend on sustainable hunting for their subsistence and livelihoods (Pitman 2010; Grossman 2011). The consumption of bushmeat, however, is not limited to developing countries. Today, major entry points for bushmeat exist at main airport hubs in Britain, France, Belgium and the United States, an illegitimate business involving lucrative prices and a wide range of species, many of which are CITES-listed (e.g. Chaber *et al*. 2010). This smuggling and even unregulated legal trade provide opportunities for introducing food-borne and tropical pathogens into novel environments as seen in the 2003 emergence of Monkey pox in the United States from imported Gambian rats.

Nevertheless, bushmeat hunting has been an important source of protein for indigenous and local communities in tropical forests all over the world for millennia (Milner-Gulland and Bennett 2003). It provides 30 to 80 per cent of the protein in rural diets in Central Africa (Nasi *et al*. 2008) and this is probably true for other tropical forest regions as well. Eating bushmeat thus is not new, but what has changed is the scale of the practice and its commercial nature. FAO acknowledges that wild meat and insects (FAO 2010b) provide a high quality source of protein that for thousands of years have fed the local human populations. Wildlife therefore needs to be preserved also for food security reasons. FAO supports efforts to identify and commercialize alternative protein sources to reduce the pressure on overhunted wildlife populations. Bush-meat could at least partly be replaced by other vegetal sources, dairy products, and/or meat from domesticated animals (Nasi *et al*. 2008). In many tropical forests, however, wildlife cannot immediately and fully be substituted by such other sources of protein. This is true for the estimated 34 million people, urban and rural, who live within the Congo Basin moist forest region (Fa *et al*. 2003).

Approach

FAO has established working relationships and partnerships with governments and national, regional and international organizations and networks to address this critical situation and to search for viable solutions that will ensure the conservation and sustainable use of indispensible wildlife resources while improving the economic prospects of poor rural people.

In 2008, the Conference of the Parties to the Convention on Biological Diversity (CBD) identified the unsustainable hunting of bushmeat, and its effect on non-target species, as a priority to be addressed by Parties (decision IX/5). As a consequence, the first CBD Liaison Group meeting on bushmeat was convened with FAO support in conjunction with the 13th World Forestry Congress (2009) in Buenos Aires which resulted in a set of recommendations for implementation at national and international levels to improve the sustainability of bushmeat harvesting (CBD 2009). At its tenth meeting in October 2010, the Conference of the Parties to the CBD requested the Liaison Group on Bushmeat to develop, again in cooperation with FAO and other relevant organizations, a revised version of the recommendations, including options for small-scale food and income alternatives in tropical and sub tropical countries based on the sustainable use of biodiversity (decision X/32). At its 15th meeting (Doha, 2010), the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) encouraged its Central Africa Bushmeat Working Group to continue their work by collaborating with the CBD Liaison Group on Bushmeat and the FAO. In this sense, a joint meeting of the CBD Liaison Group on Bushmeat and the CITES Central Africa Bushmeat working Group will take place in early June in Nairobi.

To complement its policy work, FAO prepared a regional GEF project for Gabon, the Republic of Congo, Democratic Republic of Congo, and the Central African Republic which has been endorsed by the GEF CEO in early May – only two weeks prior to this meeting – to implement and test a new approach to bushmeat: the legal, sustainable use of selected non-threatened species through participatory wildlife management. The project aims to demonstrate in pilot sites how the main barriers to the development of participatory wildlife management – (1) constraints in existing policy and legal frameworks; (2) insufficient tools; and (3) insufficient institutional capacities – can be overcome and that community-based conservation and management of wildlife can be a viable and effective strategy for conserving the integrity of wildlife, forest ecosystems and biodiversity in the Congo Basin. Project activities match these three categories by (1) giving communities exclusive well-defined rights to wildlife and developing a regional wildlife management policy; (2) developing participatory wildlife management tools; and (3) building institutional capacity of major stake¬holders, including for replication.

As a regional project it covers four countries that are in many ways different (e.g. size, population density, forest cover, infrastructure, governance, security etc.). A major challenge lies in the ambitious scope of the project: no effective solutions have been found so far to reverse the overexploitation of wildlife and make bushmeat consumption sustainable. The problem obviously is complex and requires a multi-dimensional approach: revision of legal frameworks, development of new tools and capacities, as well as the empowerment of local communities and involvement of different stakeholders.

Community-based natural resource management is not a new concept. Over the years it has produced some good results, but – let's be honest – only some. Its potential has by far not been used to full capacity. Why? Isn't the concept logical? Yes, it is but nevertheless it is not easy to implement it in practice. There are many forces opposed to it, in particular a lack of political will to empower local people to the degree required to make it work in the long-term and to take the necessary steps thereto, including a revision of policies and legislation. This will be a key challenge for the FAO GEF bushmeat project as well.

Moreover, legalizing bushmeat use is a contentious issue. Some NGOs with extensive presence in Central Africa tend to believe that opening the door to even the very limited and controlled hunting of only a small fraction of bushmeat species whose harvest can be shown to be sustainable – as proposed by the project – will lead to even higher levels of uncontrolled hunting and eventually the extinction of major tropical forest species.

Local community members play a key role in this project because they will be empowered to control and manage community hunting lands and will actively participate in the development of wildlife manage¬ment systems and community regulations for access to and use of the wildlife. Other beneficiaries are local authorities and government services in charge of wildlife as well as other stake¬holders such as national NGOs whose capacities will be strengthened to implement and later replicate and adapt the participatory wildlife management systems elsewhere.

National governments and their agencies are committed to biodiversity conservation and sustainable use/trade of wildlife resources as signatories to respective international agreements (e.g. CBD, CITES). The project which is supported by all four national governments through co-financing commitments will help the countries better comply with their national legislation and the international agreements they have signed by contributing to a hopefully long-term solution to one of todays biggest threats to biodiversity conservation: the bushmeat crisis.

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Harmonizing policy support for CBNRM amongst selected Multilateral Environmental Agreements

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Abstract

Case studies indicate that, under the right conditions, community-based natural resource management (CBNRM) can be very successful in conserving natural resources through their sustainable use, and in contributing to the livelihoods of indigenous and local communities and their socioeconomic development. The texts of the Multilateral Environment Agreements (MEAs) considered in this paper i.e. the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification, the United Nations Framework Convention on Climate Change, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals, the Convention Concerning the Protection of the World Cultural and Natural Heritage, and the Convention on Wetlands of International Importance, especially as Waterfowl Habitat and decisions of the Parties to these MEAs contain guidance for successful CBNRM. There is a need to further strengthen the complementarity and coherence of the guidance provided by these MEAs. The MEAs under consideration have common conservation and sustainable use objectives and also recognize, implicitly in some cases, the need to share with indigenous and local communities the economic benefits which are generated in order to contribute to sustainable development as well as poverty eradication. The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, based on the ecosystem approach, adopted by the CBD Parties and endorsed by some other MEAs (e.g., CITES), recognize the role indigenous and local communities as custodians of natural resources and keepers of traditional knowledge and practices for the conservation and sustainable use of biodiversity. They emphasize the need to decentralize decision-making, devolve the rights over resources and share equitably the costs and benefits from natural resource management. Areas where implementation of different MEAs could result in different policy approaches being taken towards the same resource or the same users, and where Parties to these MEAs could consider harmonizing their recommendations, include the use of terms contained in CBNRM, land tenure, and the mandates/power given to communities by the Parties to each MEA. A number of mechanisms for enhancing coordination and promoting synergy among MEAs are already in place. They can be used to facilitate harmonization in policy support to CBNRM among the MEAs.

Introduction

Community-based natural resource management (CBNRM) represents various types of natural resource conservation and uses that are linked to the socio-economic development of local communities (Thakadu 2005). These resources include animal and plant genetic resources, and other components of ecosystems with actual or potential use or value for humanity. They are considered in this paper the same as the biological resources described in the Convention on Biological Diversity (CBD)[1]. Some of these resources are renewable while others, such as coal and minerals, are non-renewable and can be driven to commercial or biological extinction by various pressures, such as overexploitation; some others can be migratory.

The ways in which CBNRM may be described, structured and applied are diverse but they can share one or more of the following commitments: (i) the involvement of local community members or institutions in the management of biological resources by, for example, integrating traditional ecological knowledge into modern resource management; (ii) the transfer of power and authority over specific natural resources from central governments to indigenous and local institutions

1. See description of biological diversity and biological resources in Article 2 of the Convention on Biological Diversity, accessible at http://www.cbd.int/convention/articles/?a=cbd-02

and communities (decentralization of the decision-making and implementation processes and resources) by, for example, legitimizing local and/or indigenous resource and property rights (empowerment of local communities); and (iii) the linking of socioeconomic development objectives with environmental conservation and sustainable use objectives (Kellert *et al*. 2000).

However, a number of problems with and deficiencies in the implementation of CBNRM have been reported. For example, Kellert *et al*. (2000) found that, most of the CBNRM successes occurred in situations where socioeconomic objectives were predominant, and most of the failures occurred in cases where the focus was on conservation and biodiversity protection goals, implying that there are difficulties with accomplishing both sets of objectives simultaneously. They also found that in the developing countries considered in their study, CBNRM rarely resulted in more equitable distribution of power and economic benefits, reduced conflict, increased consideration of traditional or modern environmental knowledge, protection of biological diversity, or sustainable resource use. The authors nevertheless believe that, when properly carried out and supported by adequate policies and legislation, CBNRM can contribute efficiently and effectively to sustainable development.

In this paper, we review the role of selected Multilateral Environmental Agreements (MEAs) (i.e. the Rio conventions consisting of the CBD[2], the United Nations Convention to Combat Desertification (UNCC[3], the United Nations Framework Convention on Climate Change (UNFCCC)[4], and the following biodiversity-related conventions: the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, also known as the Washington Convention)[5], the Convention on the Conservation of Migratory Species of Wild Animals (CMS, also known as the Bonn Convention)[6], the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)[7], and the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (also known as the Ramsar Convention)[8], in the implementation of CBNRM. We then discuss areas where there seems to be a need for harmonization of support for CBNRM amongst those MEAs and list mechanisms that could be used to achieve such harmonization.

Community-based natural resource management in the context of the selected MEAs

It is expected that support for CBNRM from Parties to MEAs will lead to enhanced conservation and sustainable use of natural resources. Local and indigenous communities have developed, over the years, knowledge and practices for the conservation and sustainable use of natural resources on which they depend closely. It is believed by the authors to this paper that integration of this traditional knowledge into modern technologies will result in even more efficient and effective natural resource management practices. This integration would take effect when community members and local institutions are involved in the management and conservation of natural resources, when the power to own and decide about natural resources is transferred from central government to local and indigenous institutions and communities.

Conservation and sustainable use objectives of the selected MEAs in relation to natural resources

Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is about how to manage biodiversity sustainably for the benefit of life on Earth. Article 1 (Objectives), Article 8 (In situ conservation), in particular its paragraph (j) on traditional knowledge, and Article 10 (Sustainable use of biodiversity) and more specifically its paragraph (c) on customary use of components of biodiversity provide guidance on ways to manage components of biodiversity for their conservation and sustainable use, and the fair and equitable sharing of benefits from the utilization of genetic resources, taking into account traditional knowledge. The other articles of the CBD are also relevant to CBNRM.

2. www.cbd.int/
3. www.unccd.int/
4. www.unfccc.int/
5. www.cites.org/
6. www.cms.int/
7. http://whc.unesco.org/en/conventiontext
8. www.ramsar.org/

Measures called for in Article 8 of the CBD, that can support CBNRM include inter alia the provision of conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components; the maintenance of viable populations of species in natural surroundings; the respect, preservation, maintenance and the wider application of knowledge, innovations and practices of indigenous and local communities for the conservation and sustainable use of biological diversity; the rehabilitation and restoration of degraded ecosystems; the recovery of threatened species; and when needed the development of necessary legislation and/or other regulatory provisions for the protection of threatened species and populations.

In accordance with paragraphs (b) to (e) of Article 10, CBNRM consisting of customary use of biological resources and traditional cultural practices that are compatible with conservation or sustainable use should be protected and encouraged, while local populations should be supported to develop and implement remedial action in degraded areas where biological diversity has been reduced.

Conservation and sustainable use of biological diversity are central objectives of the CBD. Many decisions of the CBD Conference of the Parties call for the conservation and sustainable use of biodiversity and others provide guidance on how to implement these decisions. In 2004, the CBD Conference of the Parties adopted the Addis Ababa Principles and Guidelines (AAPG) for the Sustainable Use of Biodiversity, which build on the ecosystem approach[9], the primary framework for action under the Convention. These principles and guidelines provide the policy framework for enhanced sustainability in the use of natural resources/biodiversity components with references to matters relating to indigenous and local communities. Bearing in mind that sustainable use provides incentives for the conservation and restoration of natural resources because of the social, cultural and economic benefits that people derive from that use, the CBD Conference of the Parties invites/encourages indigenous and local communities, through several decisions, to use biological resources sustainably. Pursuant to Practical Principle 12 of the AAPG, the needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources.

In addition, in 2010, the CBD Conference of the Parties adopted a Strategic Plan for Biodiversity 2011-2020 recognized as “a useful flexible framework that is relevant to all biodiversity-related conventions”. This was also one of the recommendations and conclusions adopted at the retreat of the executive heads of biodiversity-related conventions in September 2010[10]. The targets (Aichi Biodiversity Targets) contained in the Strategic Plan provide guidance on what should be achieved at the global level in the field of biodiversity, including what CBNRM should achieve. They thus constitute a framework through which conventions dealing with biodiversity could find ways to harmonize their implementation of and support to CBNRM.

More specifically, for efficient and effective CBNRM, community members need to be aware of the underlying causes of biodiversity loss and the direct pressures on biodiversity. They can contribute to enhancing awareness of the values of biodiversity and the steps for its conservation and sustainable use including by sharing relevant traditional knowledge for sustainable production and consumption, bearing in mind international agreements such as the Nagoya Protocol on access to genetic resources and equitable sharing of benefits. They can also contribute to the promotion of biodiversity integration into national and local development and poverty reduction strategies and planning processes.

Community members should also strive to improve the status of biodiversity by expanding the coverage of ecologically representative protected areas, in particular community-conserved areas (CCAs), making them more efficient and better integrating them into wider landscapes or seascapes. The role of CCAs in achieving equity, participation and good governance within

9. Decisions V/6 and VII/11 accessible at www.cbd.int/
10. See http://www.cites.org/common/news/2010/report-hlr-2010-09-01-en.pdf and http://www.cbd.int/doc/press/2010/pr-2010-09-07-mea-geneva-en.pdf

protected areas has been recognized[11]. CCAs can also help to reduce existing pressures on wildlife species and the erosion of genetic resources. Further, they can enhance the benefits (also in accordance with Principle 11 of the AAPG) from biodiversity and ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods, well-being, climate change mitigation and adaptation and the combating of desertification, including through the restoration of degraded ecosystems. In addition to their participation in CCAs, community members should participate in the updating of national biodiversity strategies and action plans.

Other Rio conventions

The objective of the United Nations Convention to Combat Desertification (UNCCD) is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, with a view to contributing to the achievement of sustainable development in affected areas (Article 2). Article 10.4 states that Parties, in developing national action programmes, should include measures such as sustainable management of natural resources and sustainable agricultural practices. In several places, the text of the Convention emphasises the importance of the sustainable management of land and water. The Convention also recognizes the important role played by local communities/populations in the implementation of the Convention.

References to sustainable use also appear in some of the decisions of the Parties. For example, the UNCCD COP (ICCD/COP(8)/16/Add.1) "invited all Parties to strengthen sustainable forest management and integrated water management in critical watershed areas in order to maintain ecosystem services in affected mountain areas, prevent soil erosion and flooding, increase the size of atmospheric carbon sinks, and conserve and sustainably use biodiversity". Similarly, one of the stated expected impacts of the Strategy is the contribution of sustainable land management and combating desertification/land degradation to the conservation and sustainable use of biodiversity, the mitigation of climate change, and improved livelihoods (Strategic Objective 3).

The ultimate objective of the United Nations Framework Convention on Climate Change (UNFCCC) is to achieve stabilization of greenhouse gas concentrations in the atmosphere […] within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, […] to enable economic development to proceed in a sustainable manner (Article 2). In paragraph 1 (d) of Article 4, Parties are requested to promote sustainable management, and promote and cooperate in the conservation and enhancement of biomass, forests and oceans, as well as other terrestrial, coastal and marine ecosystems that serve as sinks and reservoirs of greenhouse gases. In addition, in its Article 2 (a) (ii) and (iii), the Kyoto Protocol to UNFCCC calls on Annex I Parties to promote sustainable forest practices and sustainable forms of agriculture.

Biodiversity-related conventions

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates international trade in listed wildlife species, through a system of permits and certificates, to ensure that their trade is legal, sustainable and traceable. Appendix I contains species which are threatened with extinction (about 3% of all CITES-listed species), whose international commercial trade is generally prohibited. Appendices II and III contain species which are not necessarily threatened with extinction (about 97% of all CITES-listed species), whose international commercial trade is allowed under certain conditions. One of these trade conditions is the prior determination that a particular CITES animal or plant, or a related part or derivative, was obtained in accordance with relevant national legislation. Although there is no explicit mention of sustainable use in the Convention text, the requirement for non-detriment findings applied to trade in Appendix I and II species is equivalent to the requirement that trade be sustainable (Article III.2 (a), Rossner and Harrop, 2007 and the CD-ROM on the AAPG accessible at http://www.cbd.int/sustainable/)[12]. Although not all of the AAPG are of relevance to CITES, there are many references to sustainable use in the decisions of the Parties, including the vision statement contained in the Strategic Vision: 2008-2013, which is in full harmony with the CBD[13].

11. CBD COP decisions IX/28 and X/31 on protected areas

In Decision 15.10 of the Conference of the Parties to CITES, the Standing Committee is directed to review the Aichi Biodiversity targets adopted by CBD COP in 2010 and, if necessary, make adjustments to the CITES Strategic Vision: 2008-2013 as appropriate. In addition, in line with Practical Principle 12 of the AAPG as reproduced in Resolution Conf. 13.2 (Rev. CoP14) on Sustainable use of biodiversity: Addis Ababa Principles and Guidelines, the Parties to the CITES encouraged in Resolution Conf. 15.2 on Wildlife Trade Policy Reviews that the needs of indigenous people and other local communities be taken into account when trade policies concerning wild fauna and flora are being adopted.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS, also known as the Bonn Convention) and its agreements aim to conserve terrestrial, aquatic and avian migratory species throughout their range. In the 1970s when CMS and CITES were drafted, the term "sustainable use" was not yet established. However, the preamble of CMS calls for "wise use" of resources in order to conserve migratory species for future generations. While the majority of species listed on CMS Appendices, such as migratory birds, do not lend themselves to sustainable use as an effective conservation strategy, more and more species such as sharks and ungulates are being listed, for which sustainable use is an integral part of the management. Furthermore, Resolution 8.1 and the Memorandum of Understanding on the Saiga antelope (*Saiga tatarica*) explicitly aim for the sustainable use as a long-term goal.

The Convention on Wetlands of International Importance, especially as Waterfowl Habitat also known as the Ramsar Convention aims to ensure the conservation and wise use of wetlands. Under Article 3.1 of the convention, Parties are required to 'formulate and implement their planning so as to promote the conservation of wetlands included in the List and as far as possible the wise use of wetlands in their territory'. Parties adopted to apply the wise use of wetlands in ways that draw on the concept of sustainable use as it is applied in the CBD (Ramsar Resolution IX.1 Annex A, 22).

The Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention) aims for the protection of the cultural and natural heritage sites of outstanding universal value. While the text of the convention does not explicitly mention the concept of sustainable use, some of the recommendations and the Operational Guidelines for the Implementation of the Convention subsequently agreed by Parties include measures for sustainable use of biodiversity or recognise that sustainable use can be consistent with the protection of cultural and natural sites. Within the ambit of UNESCO the conventions on cultural diversity[14] are also relevant to CBNRM. Obligations agreed under both the Ramsar Convention and the World Heritage Convention take account of the interests of indigenous and local communities in sustainable use.

The Ramsar Convention and CITES consider conservation and sustainable use of wetlands and species threatened by international trade, respectively. The Ramsar Convention[15] encourages the use of the CBD Principles and Guidelines for sustainable use for taking into account the cultural values of wetlands for the effective management of sites, including maintaining traditional sustainable practices used in and around wetlands. The object of the Agreements under CMS is to restore the migratory species concerned to a favourable conservation status or to maintain it in such a status by dealing with those aspects of the conservation and management of the migratory species concerned which serve to achieve that object.

12. The CD-ROM includes all relevant Resolutions and Decisions up to CITES CoP14.
13. Conserve biodiversity and contribute to its sustainable use by ensuring that no species of wild fauna or flora becomes or remains subject to unsustainable exploitation through international trade, thereby contributing to the significant reduction of the rate of biodiversity loss.
14. "Convention concerning the Protection of the World Cultural and Natural Heritage 1972" and The 2003 "Convention for the Safeguarding of the Intangible Cultural Heritage 2003" and the 2005 "Convention on the Protection and Promotion of the Diversity of Cultural Expressions"
15. Ramsar Convention Resolution VIII.19, 18

In the case of CBD, the Ramsar Convention, CITES and CMS there is a trend towards shared thinking and approaches, as these conventions endorsed the CBD Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity and now subscribed to Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets[16].

Equity and empowerment

The CBNRM approach combines conservation and sustainable use objectives with the generation of economic benefits shared equitably with indigenous and local communities. The assumptions sustaining the approach are that (i) locals are the direct custodians of natural resources. They have accumulated centuries of successful life in harmony with nature reflected in their traditional knowledge and practices; (ii) management of natural resources incurs costs; (iii) indigenous and local communities will conserve a resource only if benefits exceed the costs of conservation. If these costs are not adequately covered then management would decline with subsequent decline of the amount and value of the natural resources[17]. Addis Ababa Principle 3 states that the costs of management and conservation of biological diversity should be internalized within the area of management and reflected in the distribution of the benefits from the use[18]. Many resources such as timber or fisheries are over-exploited because regulations are ignored and not enforced. However, when local communities are involved as stakeholders such violations are generally reduced, and management regimes are enhanced when constructive programmes that benefit local communities, and other incentives that guarantee additional benefits to indigenous and local communities and stakeholders involved in resource management e.g., job opportunities for local communities, equal distribution of returns amongst locals and outside investors, are implemented[19]."

Addis Ababa Principle 2 notes that sustainability is enhanced when "local users of biodiversity components are sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned." They will conserve resources that are linked directly to their livelihoods and well-being (Thakadu 2005). When the quality of their lives is enhanced, indigenous and local communities' efforts and commitment to ensure conservation and sustainable use of the resources is also expected to be enhanced (Ostrom et al. 1993).

Moreover, to reinforce local rights or stewardship of biological diversity and responsibility for its conservation, resource users should participate in making decisions about the resource use and have the authority to carry out any actions arising from those decisions. In addition, both science and traditional knowledge should be taken into account for adaptive management (Addis Ababa Principle 4). Similarly, as noted by Fach (undated), empowerment includes delegating accountability and resources to the most appropriate level to ensure that the programme will be geographically and ecologically specific. All of these principles concerning adaptive management, decentralization, ecosystem management in an economic context and consideration of all forms of relevant information are embodied and explicitly made operational in the CBD ecosystem approach principles and operational guidelines (decisions V/6 and VII/11 of the CBD Conference of the Parties[20]).

Ecosystem approach

In making operational the provisions of the CBD, the Parties to the Convention endorsed the ecosystem approach as the primary framework for action under the Convention. The ecosystem approach with its 12 principles provides an overarching framework for adequate CBNRM that will respond to the objectives of the CBD, other Rio and biodiversity-related conventions and related Millennium Development Goals. The approach, which encompasses economic and social considerations at the ecosystem level without simply focussing on managing species and habitats, has been recognized by the World Summit on Sustainable Development as an important instrument for enhancing sustainable development and poverty alleviation.

16. The CD-ROM on AAPG accessible at http://www.cbd.int/sustainable/ covers extensively this topic.
17. Based on Wikipedia at http://en.wikipedia.org/wiki/Natural_resource_management#Community_Based_Natural_Resource_Management_.28CBNRM.29
18. See operational guidance for the application of the ecosystem approach (decision V/6, annex, section C, paragraph 11).
19. See practical principle 12 at http://www.cbd.int/sustainable/addis-principles.shtml
20. Respectively http://www.cbd.int/decision/cop/?id=7148 and http://www.cbd.int/doc/decisions/cop-07/cop-07-dec-11-en.pdf

In accordance with the ecosystem approach, the following 'principles' should be taken into account when developing support for CBNRM:

a. The type of natural resource management, i.e. the method selected for the conservation or use of natural resource, is chosen through negotiations and trade-offs among stakeholders who usually have different perceptions, interests and intentions. The choices made by communities, on the basis of their rights and interests, should be recognized. Their empowerment for, and participation or representation in, negotiations are thus essential.

b. For greater CBNRM efficiency, effectiveness and equity, management of land, water and living components of ecosystems should be decentralized to the lowest appropriate level, usually the level of local and indigenous communities. Decentralization should enhance the responsibility, ownership, accountability and participation of local and indigenous communities.

c. The impact of CBNRM can be felt beyond the boundaries of the community;

d. Natural resource management should internalize costs and benefits in the given ecosystem and avoid market distortions, which undervalue natural systems and populations and provide perverse incentives and subsidies to favour the conversion of community land, usually biodiversity-rich, to less diverse systems. Alignment of incentives allows those who control the resource to benefit and ensures that those who generate environmental costs will pay.

e. While CBNRM relies heavily on indigenous and local knowledge, innovations and practices, it should also consider all other forms of relevant information, including scientific information from the natural and social sciences.

Some other approaches relevant to other instruments and organizations are consistent with the application of the CBD ecosystem approach. They include for example "ecosystem-based approaches" for adaptation to and mitigation of climate change, "ecosystem based management", "integrated river-basin management", "integrated marine and coastal area management", maintenance of a "species throughout its range at a level consistent with its role in the ecosystems in which it occurs" (see Article IV, paragraph 3, of CITES), the FAO Code for Responsible Fisheries, and the UNFF Sustainable Forest Management approach. They support the implementation of ecosystem approach in various sectors or biomes.

The ecosystem approach can be applied in various ways by incorporating its principles into the design and implementation of national biodiversity strategies and action plans (NBSAPs) and regional strategies; or into policy instruments and sectoral plans (e.g., in forest, fisheries, agriculture). The approach is also the framework for the guidelines and guidance adopted or endorsed by the CBD Parties and Parties to other biodiversity-related treaties.

Issues for consideration in view of harmonizing policy support of MEAs to CBNRM
Harmonization is a process that needs to be addressed at the global, regional and national levels. Governing bodies of the MEAs under consideration have already formulated mandates for harmonizing the implementation of MEAs, with supporting work carried out by these MEAs' secretariats working through the Joint Liaison Group, the Biodiversity-related Liaison Group and meetings of the Chairs of Scientific Advisory Bodies (See section 4 below). To be effective, harmonization needs to be considered also at the national level and to address areas where the implementation of different MEAs could result in different policy approaches being taken towards the same resource or the same users.

a. Use of terms
There is a need to agree on the meaning of each constituent term contained in the phrase CBNRM (e.g. 'community'). None of the texts of the conventions considered in this paper uses the term CBNRM or defines the terms 'community', 'natural', 'resource' and 'management'. Taking inspiration from Principle 22 of the Rio Declaration[21], the CBD and UNCCD refer to 'local', 'indigenous', 'international' and more recently 'mobile' communities but without defining exactly who the members of these communities are. 'Community' in CBNRM is usually associated with

21. Rio Declaration on Environment and Development Principle 22, Aug. 12, 1992, United Nations Conference on Environment and Development, UN Doc. A/CONF.151/26 (Vol. I) (1992)

local communities or indigenous and local communities[22] who represent the people who live in close association with, and are directly affected by the use and conservation of, biological diversity. In the CBD, indigenous and local communities are associated with the people who are the keepers of traditional knowledge, innovations and practices, excluding for example foreign land owners who come to live within the 'traditional' communities.

b. Mandates or references relating to communities given by the governing bodies of MEAs

As stated in Principle 22 of the Rio Declaration, "States should recognize and duly support the identity, culture and interests of indigenous people and their communities and other local communities and enable their effective participation in the achievement of sustainable development." Most of the MEAs under consideration and/or their governing bodies recognize the importance of traditional knowledge for sustainable development, and call for the respect, preservation and maintenance of relevant traditional knowledge and practices. They therefore encourage active and informed participation of local communities and indigenous people in the conservation and wise or sustainable use of biodiversity, including in particular wetlands, migratory species, species of fauna and flora in international trade, and world heritage sites. For this purpose, they support capacity building aimed at the full participation of indigenous and local communities in decision-making regarding the use of traditional knowledge for the conservation and sustainable use of biological diversity. Building the capacity of local communities is key to making devolution more responsive to local interests (Shackleton *et al*. 2002).

However, work is needed on the means for agreeing on a number of points requiring harmonization among the MEAs, including for example: (i) the extent and modalities for integrating traditional knowledge and modern technologies into the conservation and sustainable use of biodiversity; (ii) the importance of traditional knowledge and needs of indigenous and local communities in deciding which species should be included in, transferred between or deleted from the CMS and CITES appendices, bearing in mind that political and economic factors are also important; and (iii) the guidelines for balancing conservation goals and the use of biodiversity components, in particular the objectives of CITES, CMS, WHC and the Ramsar Convention; (iv) the guidelines for integrating immediate and short-term needs of indigenous and local communities, usually socioeconomic needs, and long-term needs, usually conservation needs, of governments and world communities.

Capacity building programmes need to involve all relevant MEAs and to be tailored to the needs of local communities, bearing in mind that these needs can have different impacts on different resources. Similarly, incentives given to indigenous and local communities should be assessed at a wide level because some incentives may have perverse impact on the components of biodiversity. It is also important to ensure that ways by which incentive measures that are promoted through the UNFCCC, including the Kyoto Protocol, support the objectives of the CBD[23]: and other MEAs under consideration.

c. Land tenure

In her study on the role for International Environmental Law in the Empowerment of Local Communities, Fach (undated) recalls that although land tenure is intrinsically linked to management responsibilities, it is frequently not addressed in MEAs. Following up on Agenda 21, UNCCD, in its Annex 1, draws the attention of African Parties to "pursue secure land tenure reforms" for local populations. Mention of land tenure in CBD documents is in passing but not in authoritative decisions or guidelines. In her study, Fach (undated) noted that (i) lack of land tenure rights for indigenous and local communities was a constraint to their full and effective management of natural resources and an underlying driver of biodiversity loss; and (ii) outstanding issues related to land tenure security might be the most important obstacles to the achievement of the conservation and sustainable use objectives of MEAs, and could prevent indigenous and local communities from reaping the benefits of emerging carbon finance mechanisms, for instance under the Kyoto Protocol and Reduced Emission from Deforestation and Forest Degradation through conservation, sustainable management of forests and enhancement of forest carbon stocks. MEAs could work together to encourage the consideration and provision of more secure tenure rights.

22. Including indigenous communities and mobile communities of pastoralists
23. CBD Decision V/15, paragraph 6

Mechanisms existing within MEAs for facilitating and ensuring harmonization in policy support to CBNRM

The following mechanisms available to MEAs for enhancing coordination and promoting synergy among them can also be used to facilitate and ensure harmonization in policy support to CBNRM:

a. Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets (decision X/3 of the CBD Conference of the Parties)

As stated above, the CBD Conference of the Parties adopted in Nagoya in 2010 a Strategic Plan for Biodiversity 2011-2020 that is recognized as relevant to all biodiversity-related conventions. The rationale, goals and anticipated indicators for monitoring progress with implementation of the Aichi Biodiversity Targets provide guidance on what CBNRM should achieve. They define a framework through which conventions dealing with biodiversity could find ways to harmonize their planning and implementation efforts, and their support to CBNRM. This would be in keeping with the recommendations and conclusions of the MEA retreat mentioned above.

b. NBSAP, NAPs and NAPAs

Development and updating of NBSAPs under the CBD, NAPs under the UNCCD and NAPAs under the UNFCCC provide opportunities for harmonized and inclusive planning and implementation of natural resource management at all levels of the society. The development and updating of these strategies and plans require the participation of national officials responsible for the implementation of relevant MEAs as well as international representatives of those MEAs and an analysis of the national implications of the decisions of the respective MEA governing bodies. For this purpose, when adopting the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets, the CBD Conference of the Parties urged its Parties to mainstream biodiversity at the national level, taking into account synergies among the biodiversity-related conventions in a manner consistent with their respective mandates (decision X/2 of the CBD Conference of the Parties) and to involve national level focal points of all the biodiversity-related agreements, as appropriate, in the process of updating and implementation of national biodiversity strategies and action plans and related enabling activities (in paragraph 3 of Decision X/5 on Implementation of the Convention and the Strategic Plan).

The CITES and CMS Secretariats are already preparing practical guidance for their States-Parties on how they might integrate their commitments and activities into NBSAPs[24]. In turn, CBD Parties have been invited to consider integrating national and regional CITES and CMS activities that contribute to the effective implementation of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets, and the conservation and sustainable use of wild fauna and flora, as appropriate.

c. Capacity building

The empowerment of indigenous and local communities can be achieved through the organization of training workshops similar to the regional and subregional workshops being organized by the CBD Secretariat with partners to build capacities for updating NBSAPs or strengthening implementation of the programme of work on protected areas[25]. Such regional and subregional training workshops should be prepared and organized by a consortium of MEA secretariats and relevant partners. The content of the workshops should be in harmony with the MEAs and decisions of the respective governing bodies.

d. Joint Liaison Group, Biodiversity Liaison Group and Chairs of Scientific Advisory Bodies

The Joint Liaison Group, established in August 2001 by the Rio conventions as an informal forum for exchanging information, enhancing collaboration, exploring opportunities for synergistic activities and increasing coordination[26], has considered in many meetings options for harmonizing draft decisions prepared for the consideration of the COPs of the respective MEAs.

24. http://www.cites.org/eng/notif/2011/E021.pdf
25. See lists of forthcoming meetings at http://www.cbd.int/meetings/
26. http://www.cbd.int/rio/

Similarly, biodiversity-related conventions established a liaison group of the executive heads of their respective secretariats pursuant to a request by the CBD Conference of the Parties (paragraphs 1 and 2 of decision VII/26[27]). The objective of the Biodiversity Liaison Group is to enhance coherence and cooperation in implementation of the MEAs through regular meetings organised to explore opportunities for synergistic activities and increased coordination, and to exchange information.

Regular meetings of the Chairs of Scientific Advisory Bodies (CSAB) for the biodiversity-related conventions are also organised to discuss areas of cooperation and collaboration on scientific issues that have arisen in various convention processes and how information from the natural and social sciences is used to support the development and implementation of policy.

e. Joint work programmes, memoranda of cooperation and memoranda of understanding

In order to harmonize the activities of MEA secretariats, particularly the support they give to their respective Parties, the MEA secretariats to different conventions (with the support of their Parties) have developed joint work programmes or plans to be carried out (e.g. the Joint Work Programme between the CBD and the UNCCD on Biological Diversity of Dry and Sub-Humid Lands; the Joint Work Plan between Ramsar and the Convention on Biological Diversity; the joint work programme of the Convention on Biological Diversity and the Convention on the Conservation of Migratory Species of Wild Animals for the period 2002-2005), the list of joint activities between CITES and CMS as well as memoranda of understanding or cooperation (CBD-WHC and CBD-CITES etc.).

f. Harmonized national reporting

National reports under each MEA provide a valuable account of the implementation of the respective MEA at the national level. In addition, they usually include descriptions of the opportunities and obstacles confronting national authorities. There are ongoing efforts by UNEP and MEA secretariats to harmonize reporting under the biodiversity-related conventions particularly through the MEA Information and Knowledge Management Initiative. This harmonization can facilitate the identification of ways and means to better coordinate the MEAs under consideration and lead to a more integrated process and more coherent implementation of CBNRM in the context of different MEAs.

g. Coordination committees

At the national level, harmonization in the implementation of MEAs can be achieved by integrating strategies and plans for their implementation into wider plans and strategies such as those for sustainable development or poverty eradication. This integration leads to enhanced cooperative arrangements between national focal points and/or the institutions in charge of the different MEAs. In some countries, there are national or inter-ministerial committees which coordinate the implementation of MEAs. Similar coordination committees exist in some countries to coordinate activities of some community-based organizations (e.g. for beekeeping, wildlife hunting and ecotourism in Tanzania) dealing with different resources important for a given community.

h. The MEA Information and Knowledge Management initiative and TEMATEA issue-based modules

The MEA Information and Knowledge Management initiative has developed information exchange formats, protocols and standards to allow the searching locating and retrieving of information across all multi-lateral environmental agreements. Target categories of information include Decisions and Resolutions, national focal points, meetings and events and articles of conventions. A web-based portal, called InforMEA, is available where users can search these categories using a controlled vocabulary or key words and retrieve, for example, all decisions on a particular topic or in a particular domain (www.informea.org). The TEMATEA issue-based modules[28] have been developed and are being updated by the United Nations Environment Programme, the International Union for Conservation of Nature and other relevant organizations to enhance coherent implementation of biodiversity-related and other conventions and agreements.

27. Accessible at http://www.cbd.int/doc/decisions/cop-07/cop-07-dec-26-en.pdf
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What does CITES mean for an African or Central Asian village? Some experiences from Tanzania and Tajikistan

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Introduction

In Africa and Central Asia people and wildlife compete for scarce natural resources: land, pasture, water and forests. Large predators and other big game are deadly dangers for livestock and humans; but at the same time wildlife can be a source of income and contribute to rural livelihoods. This increases the acceptance of wildlife by rural populations and can therefore improve conservation benefits for species listed in the Appendices of CITES. In many cases wildlife is actually the best use-option on marginal lands, both in economic and biodiversity terms (Baldus 1987; Roth und Merz 1997). However, many species of wildlife in Africa and Central Asia are listed under CITES and the rules of the Convention consequently determine the extent to which rural populations can legally utilize, and therefore benefit, from the species in international trade. Lack of, or restricted, international trade options are perceived as a clear disincentive to conserve wildlife.

In the case of wildlife the advantages are distributed unequally. While others benefit (e.g. rural elites, governments), peasants must bear the costs. They must coexist with wild animals and often experience them daily as locally abundant, not as rare and cannot afford the luxury of caring about world heritage or the intrinsic value of wildlife.

This is the background of communal approaches to wildlife conservation. There has been a departure from the conventional protectionist approach of "fortress preservation" or the policy of "fines and fences" as a result of a paradigm change, but also because of the erosion of law enforcement and the expansion of human populations in rural areas. Practical experience shows that if local people are not involved, wildlife cannot be effectively conserved outside protected area systems (e.g. national parks, game reserves) in the face of an expanding local human population.

Nearly everywhere in Africa or Central Asia game is considered an open access resource despite official legal protection. Not using wildlife only benefits others. The result is overexploitation and, in the case of the major predators and large herbivores like elephants, intolerance. The end result is the destruction of the resource. Monopolistic ownership and management by the state has not solved this "Tragedy of the Commons" (Baldus 2009a).

However, if users work together, it can be demonstrated that community assets can be used locally in self-administration. People can be motivated for cooperation, if they realise that it is for their benefit and that certain objectives can be better pursued by self-help cooperation. In this way sustainability in the use of natural resources is achievable (Ostrom 2008). A crucial factor is that rural communities make the decisions themselves and are not dictated to by elites or bureaucracies.

Similarly, the legal framework must be supportive and must not prevent such cooperation. International biodiversity-related conventions such as CITES are part of these surrounding conditions and can determine the degree to which these communities are allowed to make use of their natural resources.

Decisions to protect rare mammals and reptiles, including large carnivores, by using trade related measures rarely take into consideration the concerns of poor rural people and their local communities who pay the bill of protection but receive no benefits. Often these people have no voice when relevant decisions are made, neither on a national nor on an international level such

as during CITES Conferences of the Parties (CoPs). We present three empirical examples from the village level, two from Tanzania and one from Tajikistan. As different as the countries and situations may be, the general messages are similar. We show that better conservation of these species could be achieved if the interests and needs of local people are taken into consideration and if they are involved in decision-making and management.

Lion: Mkongo Ward, Tanzania

Tanzania is home to one of the largest lion populations in Africa. Conflicts with local people are common, particularly in livestock areas. Between 1990 and 2003 an average of 200 people lost their lives in Tanzania every year due to dangerous wild animals, and approximately one third were killed by lions (Baldus 2006). For unknown reasons human losses have always been highest in Southern Tanzania. It can be a woman returning from the fields in the evening, it can be the local game warden in Songea town after a good evening drinking in the local bar, or it can be a young couple making love in the bushes on the outskirts of a village. Besides such individual cases, sometimes a lengthy series of killings occurs, caused by a few specialised individuals. There are also incidents where a single lion ("man-eater") will kill several people, striking terror in the community.

One such event happened along the Rufiji River close to the Selous Game Reserve and only 150km southwest of Dar es Salaam (Baldus 2004a). Between August 2002 and April 2004 at least 35 men, women and children were killed and eaten by a lion. Initially the beast was sometimes accompanied by others. The most frequent method of attack was that the lion forced its way through the mud wall or the thatched roof of a hut. The second most frequent style of attack was for the lion to jump up onto a "dungu", a wooden platform-like structure from which people chase away crop-raiding animals at night. The lion also snatched people who left their house at night. If the carnivore had time it would drag its victim away to eat the corpse, including the intestines, and leave the head, arms and lower legs behind.

A whole district lived in a state of shock and people abandoned their fields, their main source of livelihood. The Government game scouts staged an inefficient hunt for several months and snared and shot a couple of innocent lions. The beast responsible was killed in the end during a driven hunt, but only after it had swum over the broad Rufiji River and had finally killed two old women close to the camp where the scouts had stayed at a safe distance to the problem area, or at least what they thought was a safe distance (Baldus 2009b).

Government scouts are notoriously unreliable and although village game scouts provide better protection, they only work in community wildlife management areas. Professional hunters and their clients cannot control problem lions. However, hunting tourism removes a certain number of lions and, apart from poaching, is therefore one of the few reliefs for people in rural areas. Without hunting tourism the risk is greater that people take the killing of problem animals into their own hands and this normally leads to a great loss of lions, particularly when poison is used. The use of poison is on the increase. As the intolerance of communities towards lions is to a great extent the result of economic losses incurred from livestock predation, significant flows of lion hunting proceeds to the communities would improve the perceptions of people towards lions and increase their tolerance.

Tanzania holds the largest lion population in Africa (Mésochina *et al*. 2010) and its lions are hunted on the basis of quotas. Some groups are presently campaigning to stop the hunting of lions and Tanzania is one of the main targets. However, the lion population in neighbouring Kenya has declined greatly (Kenya Wildlife Service) although lions have not been hunted legally for over 30 years. Regulated and well-managed lion hunting is about the only way that landowners can lawfully benefit from lions in their area and their voice should be heard in all decisions on lion management (Frank 2011).

Wild lion populations outside national parks only have a future if rural people see a direct benefit of coexisting with them. The revenue from official and controlled hunting encourages the lion range states to leave hunting blocks as wilderness areas and refrain from converting them into pastoral rangeland and agricultural land with the associated loss of biodiversity. Together with

elephants, lions are the most valuable trophy hunting species and to remove them from the quota would render trophy hunting in many areas less economic or not economic at all. Banning lion trophy hunting or creating international trade barriers for hunters to take home legally obtained trophies removes the economic as well as the management and law enforcement incentives that are necessary for conservation. Therefore, in conformity with CITES Resolution 10.14 Rev. CoP14 on leopards (Wijnstekers 2011), the killing of lions in defence of life and property, and to enhance the survival of the species, should continue to be honoured by CITES.

Nile crocodile: Ruvu and Mgeta Rivers, Tanzania

One of the major killers in many African villages is the Nile crocodile. The victims are often women and children who fetch water in rivers, do the washing or work in rice paddy fields. Precautions are difficult, if not impossible. Protective measures include wooden fences at water points or fetching water using calabashes fixed to long sticks, so that the person stands further away from the water. Local communities retaliate by destroying crocodiles with spears, nets, poison and baited hooks. However, crocodiles are difficult to hunt with traditional weapons. Villagers therefore are not able to effectively defend themselves. On occasion game scouts are sent to hunt and kill the "problem" crocodiles, but this is unreliable and in most cases the culprit is not killed. People therefore support poachers who shoot crocodiles for their skins. Legal hunters are also encouraged who, on the basis of a Government licence (and sanctioned by CITES), are contracted to remove crocodiles from river systems.

One example of intensive human-crocodile interactions is the JUKUMU Society north of the Selous Game Reserve in Tanzania where there were constant reports of crocodile attacks. 22 villages had formed JUKUMU Society and set aside an area of village land with the aim to conserve and utilize wildlife on their land. The Society had demarcated its own Wildlife Management Area of 700 square kilometres, located in the northern buffer zone of the Selous Game Reserve between the Ruvu and Mgeta Rivers. Like in many other areas with crocodiles, people paid a heavy toll. The incomplete records of the Society showed that from 1999 to February 2004, crocodiles had killed a minimum of 28 people and injured 57 others in the Jukumu area (Baldus 2004b). Furthermore, they killed at least 53 livestock and injured 41. In one village alone 11 people were taken within a year. Crocodiles were clearly seen as enemies, and this added to the deteriorated relationship between people and wildlife.

When Tanzania's annual CITES export quota for Nile Crocodiles taken from the wild was increased from 1,100 to 1,600 animals per year (including 100 for sport hunting) at the 11th Conference of the Parties to CITES in 2000, this was granted under the condition that rural communities should be more involved and also have a greater share of the benefits. This was an innovation in Tanzania. Normally, the Ministry responsible divides the quota into small portions and allocates them to interested companies or individuals.

JUKUMU applied for quotas and was allocated 40 crocodiles in 2001 and 2002 against the prescribed non-refundable licence fee of $US50 per animal. Hunting was carried out mainly during daytime by the village game scouts under the guidance and supervision of the Government's Community Wildlife Officer. Thirty-five animals were killed, with the largest measuring 4.6 m. After receiving training, the village game scouts were able to skin, salt and preserve the skins themselves. Skins were mostly second grade and were sold locally for export, with an average revenue of $US150 per skin. The costs of licences, salt, ammunition, transport and field allowances amounted to $US5,300 with a net profit of $US2,300. The general assembly allocated this amount together with other wildlife revenues for conservation purposes and local community projects. Crocodile problems were significantly reduced after the operation.

Markhor: Villages in the Hazratishoh and Darvaz Mountain Ranges in Tajikistan

In the villages of the Hazratishoh and Darvaz Mountain Ranges in Tajikistan's South, people live in close neighbourhood with Tajik markhor (*Capra falconeri*), Bukhara urial (*Ovis orientalis bochariensis*), Tienshan brown bear (*Ursus arctos isabellinus*) and snow leopard (*Panthera uncial*) which are all protected by national law and are listed on the Appendices of CITES.

The Tajik markhor is one of the world's most endangered taxa of mountain ungulates. The IUCN red list (Valdez 2008) considers it as "endangered" and states that the overall population of Tajik markhor might only be 700 animals. In Tajikistan it has been listed in the Red Book since 1988 and hunting markhor is not permitted. As all markhor populations are listed on Appendix I of CITES, the import of hunting trophies by signatory states is possible only on the basis of individual import permits. As Tajikistan is not yet a party to CITES, no export quota can be established by CITES. A strictly protected area of almost 20,000 ha and a protected area with regulated natural resource use of 53,000ha were already established in the Hazratishoh Range during Soviet times. Consequently, the species and its habitat should be well preserved.

Unfortunately, the reality looks quite different. Markhor and other species are continuously hunted for meat and daily several dozen donkey-loads of fuel wood are removed from the protected areas. Since 2008 at least 150 markhor were illegally hunted inside the protected areas by Afghan and Tajik poachers and border guards (Michel 2010; oral information by local people). In one "strictly protected area" alone over 100 skins were impounded. A GEF project (USD 750,000) had no visible impact on the prevention of poaching.

Despite the protected areas clearly failing, Tajik scientists suggested creating an additional protected area for markhor in the neighbouring Darvaz Mountain Range, where in 2001 only nine markhor were observed by zoologists from the Academy of Sciences (Kadamshoev, pers. comm. 2011) and they consequently believed the species close to extinction. However, the opinions of scientists searching for study grants from foreign donors are sometimes biased. During our first assessments in 2008, we observed 39 markhor in that unprotected area (Michel 2010), and in February 2011 our team recorded 226 individuals. In March 2011, within only two days, we saw 120 markhor there with the two largest herds consisting of 34 animals each. The lack of shyness of the animals suggested low levels of poaching (Michel 2011). Even if the numbers from the index surveys do not provide evidence of a population increase during these few years, they clearly show the existence of numerous markhor in this area, and a population that suggests to be at least stable, if not growing. How could this conservation success be explained?

During the Tajik civil war in the 1990s, a local poacher in the area had already been convinced by a hunting tourist to stop shooting markhor and to support foreign hunting operators. Revenues from hunting tourism that he received during the upcoming years were small, but motivated him to not only stop poaching but to start the protection of game. Now the main "retired" poacher, together with his sons and some employees from the local community, operates a private conservancy of initially 3,750ha, which has recently been considerably enlarged. As his understanding about legal requirements grew, he no longer guides markhor hunts but subsidizes markhor conservation in expectation of future hunting opportunities by incomes earned from gardening and livestock as well as some legal wild boar and ibex hunts. Markhor now regularly damage his fruit tree plantations, bears break the branches of his walnut trees and snow leopards kill dozens of his and his villagers' goats. However, the expectations to earn sufficient funds from non-consumptive "eco-tourism" did not materialize to this date.

Recently another local private person, perhaps not surprisingly the former director of the nature reserve, and a community-based organisation, have replicated this approach in areas outside the nature reserve. Most members of the NGO are also active hunters. In expectation of benefits from future trophy hunts they invest significant time and money into law enforcement and population monitoring. Poaching is now more effectively controlled in these areas and markhor are more frequently observed. But other threats to markhor remain. So far the conservancies are based on lease of land and leasing fees demanded by the state can only be paid by earnings

from utilizing the areas as pasture for livestock. In autumn 2010, at least 65 markhor died from an infectious disease that was probably transmitted by domestic goats. Nevertheless, due to lack of sufficient income from direct use of the markhor, peasants continue to graze their goats in the markhor habitats.

Because of its rareness, its magnificent horns and the physically demanding high mountain hunt, markhor is among the highest-priced hunting trophies worldwide (Bellon 2008). In Tajikistan, the central government accrues most hunting license fees and direct local benefits would therefore be minimal. This needs to be changed so that the major share of revenues from trophy hunts would flow to the local communities. This could be a condition for approving CITES export quotas by the international community or for issuing individual import permits. Revenues need to be allocated for financing the work of the community-based conservancies and to local development in these remote regions.

The successful community-based trophy hunting schemes on markhor in Pakistan (Frisina and Tareen 2009; Mir 2006; Shackleton 2001) provide excellent case studies for Tajikistan and how markhor could be managed in this country in a similar way. There, community-based wildlife management of markhor, based on allocating 80% of the trophy fees to the communities for conservation activities and local development, points the way in the right direction. This is supported by CITES Resolution Conf. 10.15 (Rev. CoP 14) on "Establishment of quotas for markhor hunting trophies" where it states the following in its preamble:

> "RECOGNIZING further that conservation of the species will depend on the capacity of the State to regulate use and on local people having sufficient incentives to maintain the species in preference to their domestic livestock;
>
> RECOGNIZING that Pakistan is actively promoting community-based management of wild resources as a conservation tool and has approved management plans (…) that ensure the financial benefits derived from trophy hunting of a limited number of specimens go direct to the managing communities and that the communities use an equitable share of such financial benefits to sustain the management programme for the species" (Wijnstekers 2011).

The above examples of initiatives by local people show that also in Tajikistan, incentive-driven conservation for the benefit of rare species and local people is a realistic option. During surveys conducted in spring 2010 and 2011 in the community-based conservancies, i.e. outside the nature reserves, a total of 509 markhor have been observed. But if in the near future markhor, urial and bear in Tajikistan are not allowed to be used for stimulating their own conservation, local people will perceive them as free meat or even vermin. And there is no realistic chance that the Tajik government can enforce their protection against local poachers. Either legal sustainable use is made possible or illegal unsustainable poaching will lead to the extinction of markhor and other endangered species in Tajikistan's mountains.

If not community-based conservation – then what else?

Nobody can claim that CBNRM is the ultimate answer to the challenges faced by wildlife conservation and rural development in Africa or elsewhere (e.g. Baldus 2009a). It would also not be advisable, for conservation's sake, to de-gazette the protected areas and hand them over to the communities. However, empirical analysis shows that CBNRM has achieved extraordinary success in livelihoods and biodiversity terms on unprotected village land in a number of cases and countries. The underlying principles are not restricted to wildlife; it is a general experience from all over the world, and therefore a basic principle of any democratic society and of market economics that:

- people should have a say in their own affairs and be involved in their own development;
- members of social groups be allowed to form self-help associations with economic objectives;
- they should participate in all major developments affecting their lives;
- land owners should be able to decide, within a certain legal framework, about the use of the natural resources on their land; and

- it should be the individuals and private enterprises who make the basic economic decisions, and not the state, which should restrict itself to regulatory powers.

Development strategies that did not comply with such principles have failed; strategies that did comply have not necessarily succeeded, but in general it has been demonstrated that they were more successful. Where CBNRM has failed, it was not because of intrinsic defects or inbuilt infirmities of this management regime. Mostly, it was because of deficiencies, which are typical of general features in these countries, such as bad governance, the unwillingness of elites and bureaucracies to devolve power and the technical inability of disadvantaged groups to run and manage self-help organisations successfully (e.g. Baldus 2009a).

After thirty years the picture of CBNRM is neither black nor white. There are many shades of grey, but overall we are left with more positive experiences than failures. The concept has not performed badly: CBNRM is currently the only available strategy that links the goals of conservation with the traditions and aspirations of indigenous communities, simultaneously addressing poverty in wildlife areas.

Community involvement has resulted in a number of successful examples of wildlife conservation (e.g. Weaver *et al*. 2009). Those who criticize or disapprove of this approach have failed to present a viable alternative. Their only option is to continue with the old "fences and fines" strategy that in most cases has not been successful.

The reasons for failure can be identified and it is possible to react and improve in practice by adaptive management, which is embedded in the Addis Ababa Principles on Sustainable Use as adopted by CITES (Res. Conf. 13.2 Rev. CoP14). In any case, a complete paradigm change needs time to consolidate.

The discussions on CBNRM between conservationists, economists, development planners, hunters, animal rights' activists and human rights advocates remain highly polarized. There is little willingness of parties to listen to the other side and no willingness to seek compromise. Most importantly, the communities themselves continue to have no voice in such "dialogues between the deaf". CITES decisions are presently the result of an international power play between Governments and self-interest groups, which represent economic, ideological and – to the least degree – conservation interests. Most of the players live far away from the protected species and "the problems". They therefore do not directly bear the positive or negative impact of CITES decisions. Those who speak could use some humility and listen to, and heed, the advice of the rural people concerned, particularly as it is them who bear the consequences of CITES decisions.

No conservation success without community involvement

In the eyes of the authors all three examples demonstrate the need for national governments to involve rural people in the management of wildlife on their land. But CITES also needs to more formally address community-based conservation as an indispensable prerequisite for a more efficient conservation of species listed in its Appendices. In the long run it is impossible to conserve wildlife against the interests of rural people who live side by side with these animals and who generally bear the costs, but rarely receive the benefits. They have the means to exterminate species and will do so if they must. International trade restrictions that violate their interests can therefore become counterproductive as far as conservation is concerned. If no mechanism is found that better represents the interests of rural people at CITES, the Convention will fall short of its objectives in the case of a number of species listed in its Appendices.

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The catalytic role and contributions of sustainable wildlife use to the Namibia CBNRM Programme

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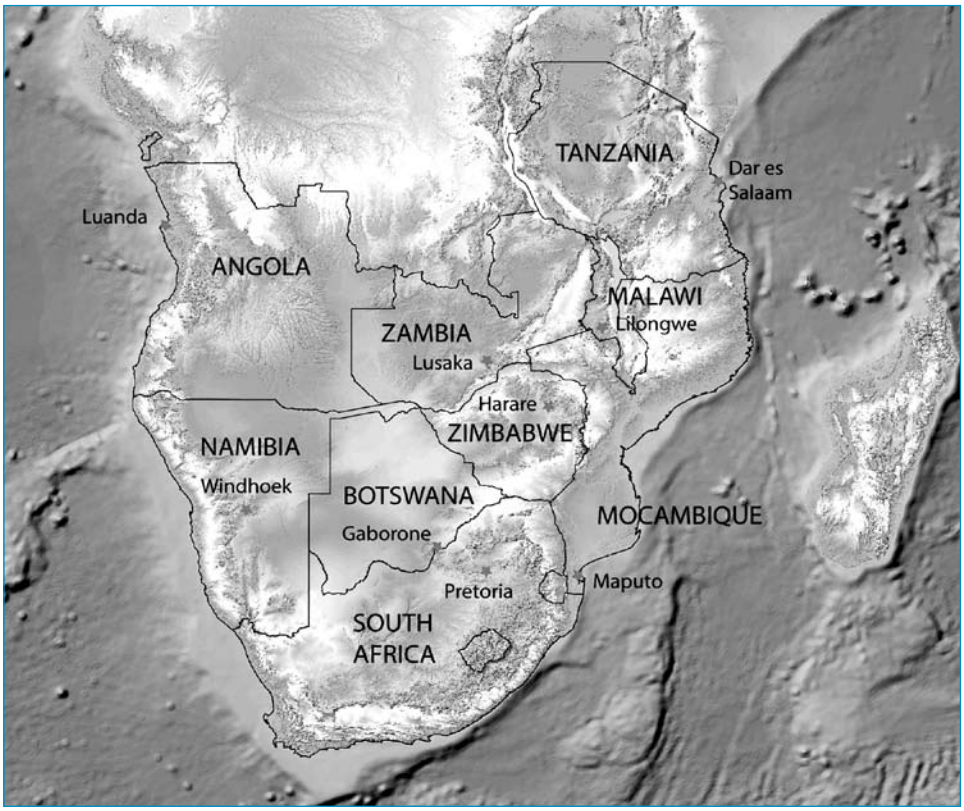
Introduction

Namibia is a large country (823,988 km²) located in southwestern Africa, where it is enclosed between South Africa to the south, Angola to the north, and Botswana to the east (Fig. 1). With a population of approximately two million, Namibia is the least sparsely populated country in sub-Sahara Africa. A mainly arid land, Namibia is surprisingly species-rich. Its vast wilderness areas and diverse ecosystems provide superb habitat for a range of Africa's megafauna, while endemism for both flora and fauna is high (Barnard 1998).

Since independence in 1990, Namibia has introduced one of the most innovative community based natural resources management (CBNRM) programs in Africa, if not the world. In sharp contrast to historical colonial-inspired wildlife policies, the passage of the 1996 communal area conservancy legislation (GRN 1996) has provided incentives and motivation for communal area residents across Namibia to conserve their wildlife resources. As a consequence, communities who form conservancies[1] are now managing and utilizing their wildlife through numerous means, including photographic tourism, trophy hunting, various forms of meat harvesting, and live game sales.

Figure 1. Namibia in proximity to surrounding southern Africa countries



(Map courtesy of RAISON 2009)

The resulting cash and in-kind benefits have fostered a deeper appreciation of the value of wildlife and stimulated communities to increasingly promote wildlife production as a valid land-use. This has allowed remarkable recoveries of wildlife across Namibia's communal areas. To date, a total of 64 communal conservancies have formed (Fig. 2), covering approximately 14.4 million hectares and embracing more than 240,000 community members. These figures represent 17.6% of the country's landmass and approximately 12% of its population, respectively.

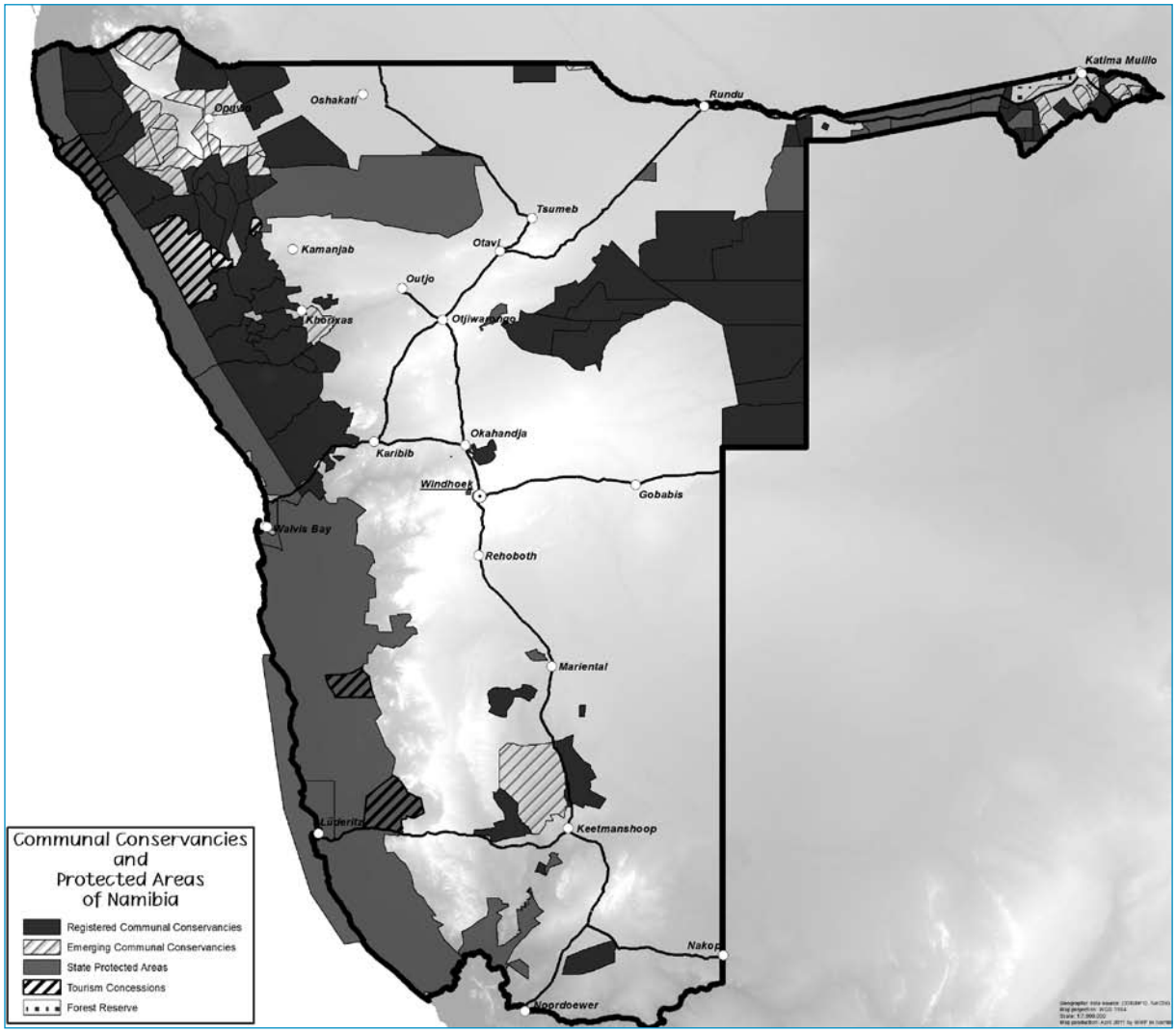
1. Conservancies are legally-recognized, geographically-defined areas formed by communities to manage and benefit from wildlife and other natural resources.

This paper seeks to describe the complementary contributions of tourism and hunting to the conservancy movement, but specifically illustrates the catalytic role that consumptive forms of wildlife use have provided.

Unlocking the value of Namibia's wildlife

Namibia's successful CBNRM Programme is premised upon the devolution of rights to wildlife and wildlife benefits to resident land stewards. This concept was originally pioneered in Namibia by the 1967 Nature Conservation Ordinance 31 (Immelman 2003), but was further codified by the Nature Conservation Ordinance Number 4 of 1975. These ground-breaking pieces of legislation gave cognizance to the fact that in the 1960s and 1970s most private land-owners perceived wildlife as a nuisance, and as competition with livestock. Thus, wildlife was being actively extinguished from private lands (43% of Namibia) to optimize livestock productivity and income. Visionary conservationists perceived this situation could be countered by creating value for wildlife. Whereas wildlife was previously property of the State, with only very limited private utilization possible under a strictly enforced permit system, the new legislation gave broad utilization rights to landowners. This allowed farmers to gain direct and sustainable benefits from wildlife through various forms of utilization. Enactment of the legislation proved successful, and produced a wide-scale recovery of wildlife on Namibia's private lands (Barnes and de Jaguar 1996). Between 1972 and 1992, the aggregate value of wildlife use on private lands rose by approximately 80% in real terms (Barnes and de Jaguar 1996), while huntable game[2] numbers on private lands were estimated to have more than doubled from 565,000 to 1,161,000 (Barnes and Jones 2009).

Figure 2. Registered and emerging communal conservancies in relation to protected areas in Namibia



(Map courtesy of NACSO Natural Resources Working Group 2011)

2. Huntable game as defined in the Nature Conservation Ordinance Number 4 of 1975 consisted of Bushpig (*Potamochoerus porcus*), Buffalo (*Syncerus caffer*), Oryx (*Oryx gazella*), Kudu (*Tragelaphus strepsiceros*), Springbok (*Antidorcas marcupialis*), and Warthog (*Phacochoerus aethiopicus*).

Communal conservancies

The Nature Conservation Amendment Act of 1996 (GRN, 1996) built upon freehold legislation, by extending rights to wildlife and wildlife benefits to residents of Namibia's communal lands (41% of the country) who form and register a communal conservancy contingent upon:

i. having an approved constitution that provides for sustainable management and utilization of its game;

ii. having clearly defined physical boundaries;

iii. forming a representative management committee; and

iv. having the capacity to manage funds and equitably distribute benefits derived from consumptive and non-consumptive use of conservancy game.

The Act is significant in that it: 1) devolves 100% of the benefits from the sustainable use of wildlife to resident communities; and 2) the legislative framework recognizes the conservancy as the legitimate manager and beneficiary of both consumptive and non-consumptive commercial forms of wildlife use (i.e., hunting as well as photographic tourism such as lodge operations, community campsites, etc.). These empowering aspects of Namibia's CBNRM legislation are globally rare and have served to: 1) ensure land stewards reap value from their wildlife, thereby promoting improved competitiveness between wildlife and agriculture as a land-use; and 2) provide legitimized incentive for communities to zone and manage their lands for the presence of wildlife.

CBNRM achievements in Namibia

The Namibia CBNRM Programme is premised upon three operational pillars: 1) sustainable natural resource management; 2) generation of pro-poor and conservation-friendly benefits; and 3) good governance. The first four communal conservancies were registered in 1998 and have since ballooned to 64, while approximately 20-25 more conservancies are at different stages of formation.

Sustainable natural resources management

The formation of communal conservancies has produced a number of positive conservation achievements, including:

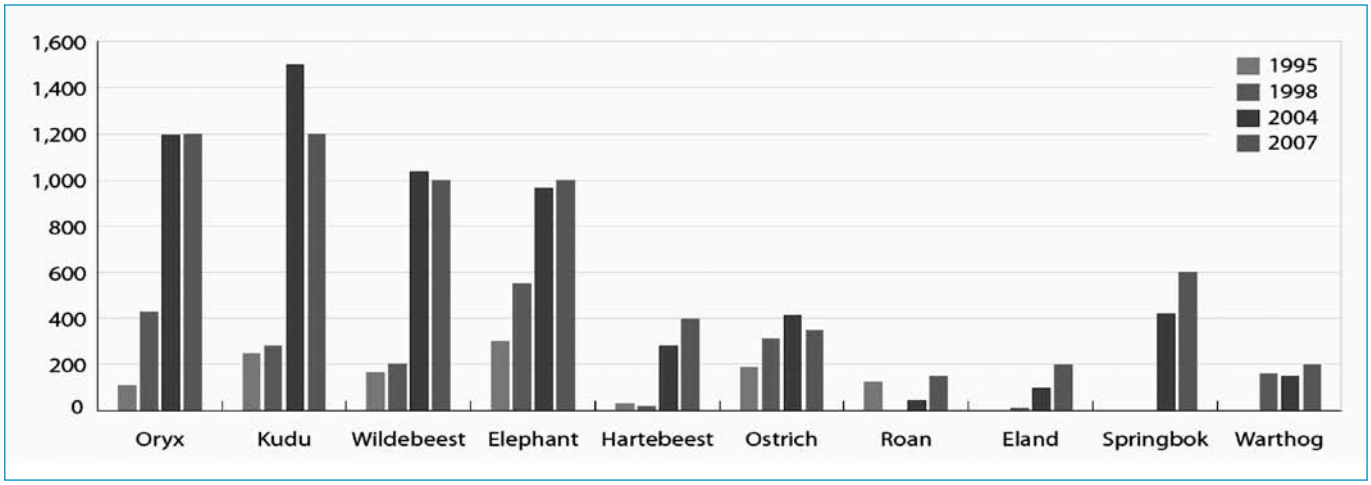
i. The devolution of wildlife rights and benefits to conservancies has precipitated a major paradigm shift in the attitude of community members towards wildlife. Under the previous policy, wildlife was widely viewed as a detriment to one's livelihood and valued mostly as poached meat in the pot. In contrast, there is now a widespread impression that communities are increasingly perceiving wildlife as a community asset (i.e., as evidenced by increased demands for more communal conservancies and wildlife translocations), resulting with intensified local social pressures against poaching.

ii. The drop in poaching[3] has allowed an on-going recovery of wildlife populations in communal conservancies. While environmental factors such as good rains may have favored population growth in certain years, it is believed that overall recoveries can be attributed to more responsible management of wildlife stocks by vested stakeholders who see value in having wildlife present in their area. Repeated wildlife censuses in Caprivi (Fig. 3) and the Nyae Nyae area (Fig. 4) confirm improving population trends of numerous species[4], while the longer-running recovery of plains game in northwest Namibia conservancies is leading to range expansion and recovery of apex predators such as lion (Fig. 5), cheetah, and leopard (NACSO 2010).

iii. A total of 31 conservancies are immediately adjacent to or in key corridors between national parks. This is contributing to wildlife-friendly forms of land-use around parks; promoting large landscape connectivity and creating a synergy that also bolsters the viability of Namibia's protected area network.

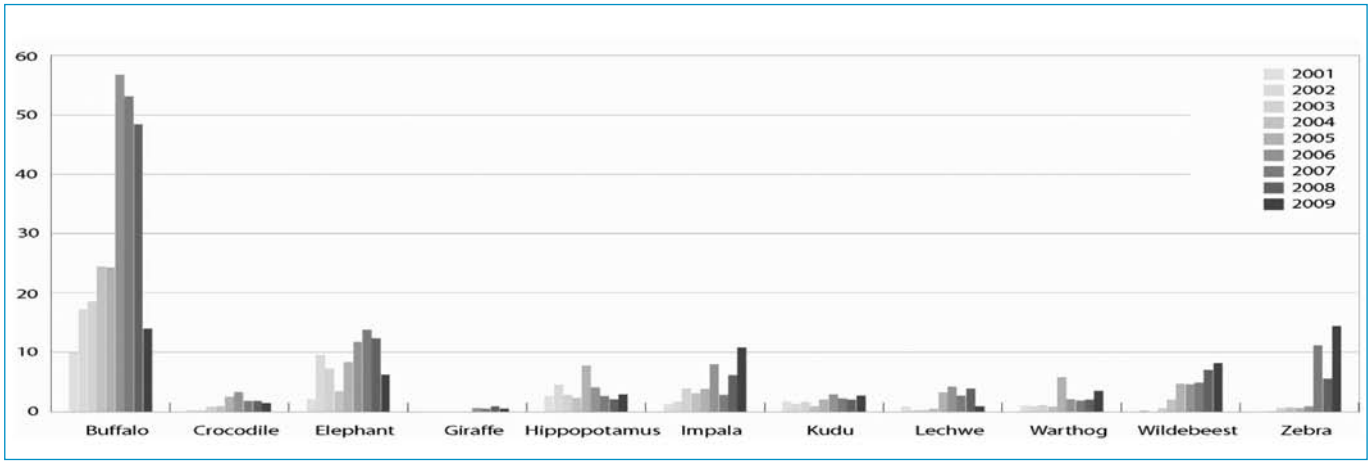
3. Recording poaching incidents forms part of the Event Book monitoring system used by most conservancies, providing good data on the prevalence of poaching since the introduction of the Event Book to conservancies in 1999.
4. Fluctuations in game numbers, such as the noticeable decline in the recorded sightings of buffalo, elephant and lechwe in Caprivi in 2009, are likely to be due to extensive flooding and seasonal movement patterns of wildlife.

Figure 3. Estimated game populations in Nyae Nyae Conservancy from aerial game censuses (1995, 1998, 2004), water point counts, and local knowledge from 1995-2007



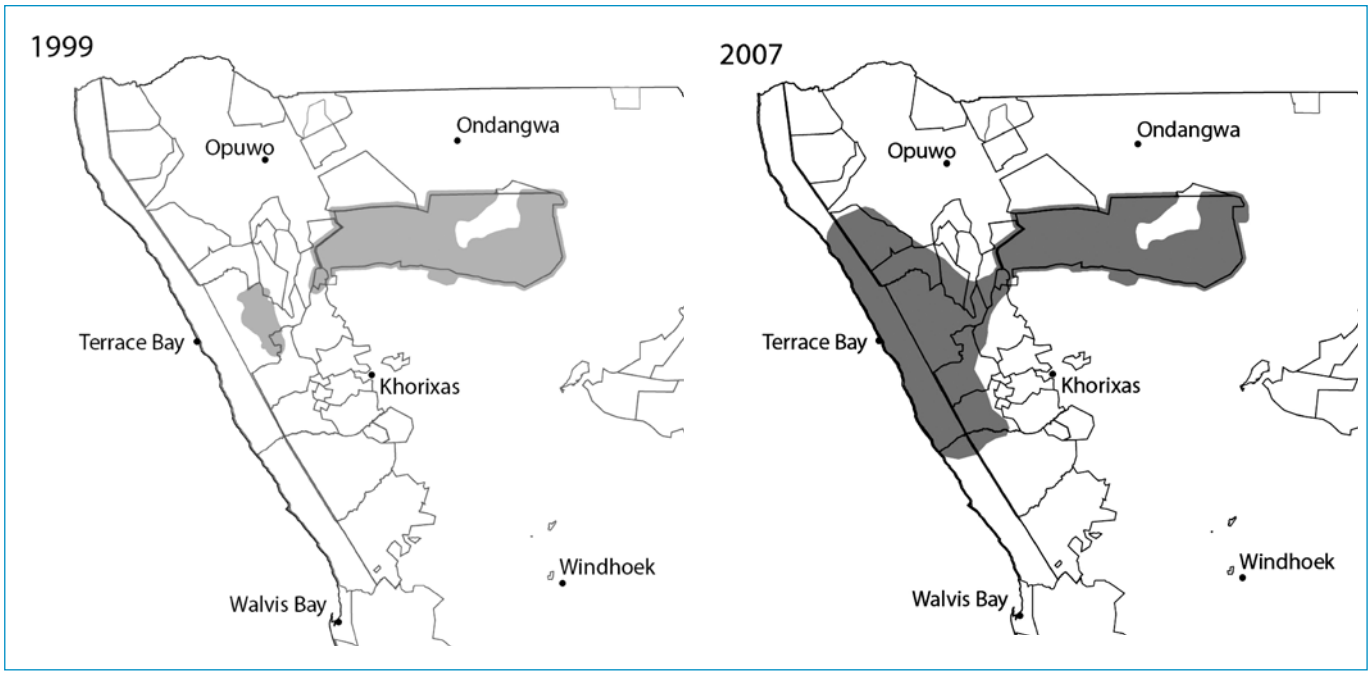
(NACSO 2008)

Figure 4. Estimated game populations in seven well-established communal conservancies in East Caprivi from 2001-2009



(NACSO 2010)

Figure 5. Range expansion of lions in north-western Namibia from 1999-2007



(Source: Desert Lions Conservation 2008)

iv. There is growing recognition by private sector tourism and hunting operators of the critical role they and conservancies are playing in conservation and rural development. Such recognition is being reinforced by contracts that include conservation and social empowerment clauses that are linked to the long-term maintenance of wildlife populations and critical habitats.

v. The wildlife-friendly management approaches (i.e., establishment of conservancy core wildlife areas, reduced poaching, increased tolerance to human/wildlife conflict, etc.) and growing community demand for game induced the Ministry of Environment and Tourism (MET) to initiate a communal conservancy game introduction programme. Since 1999, more than 7,500 head of wildlife have been translocated to communal conservancies, including such rare and valuable species as black rhino (*Dicerous bicornis bicornis*), black-faced impala (*Aepyceros melampus petersi*), and sable antelope (*Hippotragus niger*).

Civil society governance

The bottom-up, representative nature of conservancies has led to the formation of democratic governance structures across Namibia's communal lands. Though originated for the purpose of promoting conservation, conservancy committees have since acquired a development mandate that cuts across a swath of sectors. In addition to wildlife, many conservancy committees are now engaged in the management of freshwater fishery, forestry, and livestock grazing resources. These resources currently fall under the mandates of the Ministry of Fisheries and Marine Resources, and the Ministry of Agriculture, Water and Forestry, respectively. However, each of these ministries, along with the Ministry of Lands and Resettlement, give recognition to the rights and roles of communal conservancies.

Conservancies have also proven fertile institutions for empowering women, with women composing 34.8% of committee composition and holding the key position of treasurer in 53.3% of the registered conservancies (NACSO 2010). Conservancy financial resources, staff and equipment are being used to fund and leverage rural development activities, ranging from improvement of local schools to development of local water supplies to assistance with local transport and health concerns. By the end of 2009, 23 conservancies had HIV/AIDS policies and action plans in place. By covering their own operating expenses through their income, conservancies are funding conservation outside state protected areas. In 2009, conservancies spent US$1.42 million to cover running costs, capital developments and staff salaries, which amounted to approximately 37% of all conservancy spending (NACSO 2010). Conservancies have also channeled significant funds into the mitigation of human wildlife conflicts.

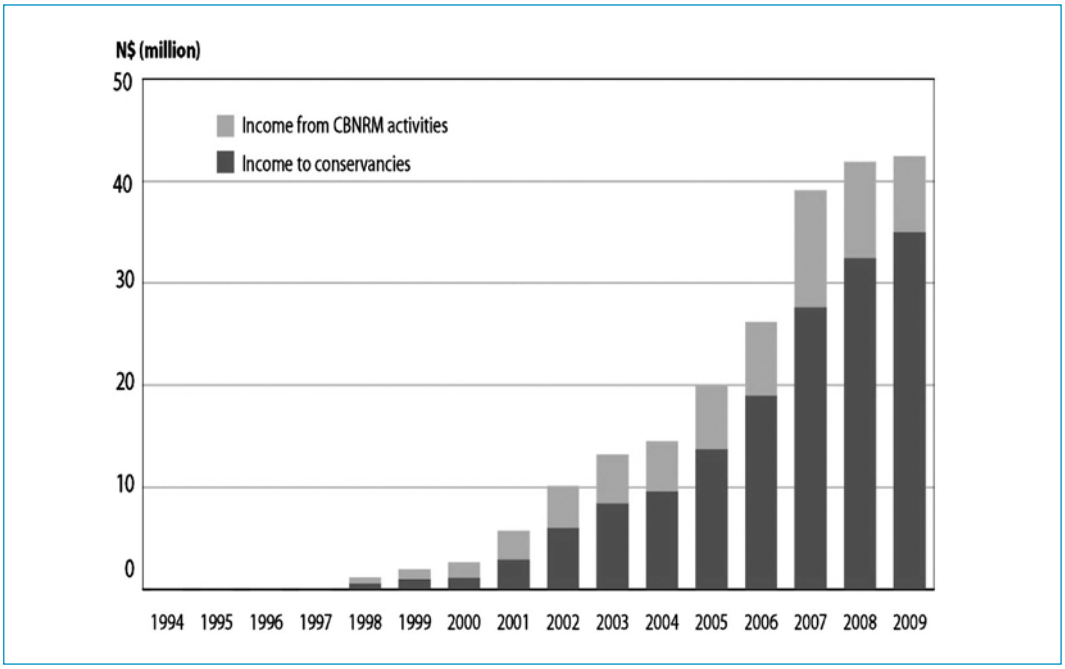
Conservancy and other CBNRM benefits

As a result of good governance and resource management the Namibia CBNRM Programme has generated significant benefits to the producer communities. During the period 1994-2009 (Fig. 6), the annual benefits (cash, employment, and in-kind) returned to community members by CBNRM enterprises and conservancies increased from negligible to N$42.48 million (US$5.05 million) (NACSO 2010).

Of the 2009 amount, N$35.02 million (US$4.16 million) were direct benefits to conservancies and their members, while the remaining N$7.46 million (US$.89 million) were benefits received by CBNRM beneficiaries outside of conservancies through such enterprises as tourism, campsites, handicrafts, and sale of natural plant products. During 2009, a total of 1,669 formal jobs were funded by CBNRM Programme activities (NACSO 2010), while approximately 7,115 people benefited from seasonal forms of employment. Though these numbers would amount to less than 5% of working-age residents, the figures are significant in that jobs in such remote and undeveloped areas are extremely rare and highly valued. Overall, the 2009 CBNRM activities produced an economic contribution of N$241 million (US$28.66 million) to Namibia's Net National Income (NACSO 2010).

The largest sources of benefits to conservancies have been derived from joint venture lodges, closely followed by hunting concessions. Community run enterprises, natural plant products and live game sales have added diversity, but smaller levels of benefits (Table 1).

Figure 6. Total CBNRM benefits received by community members in conservancy and non-conservancy areas from 1994-2009



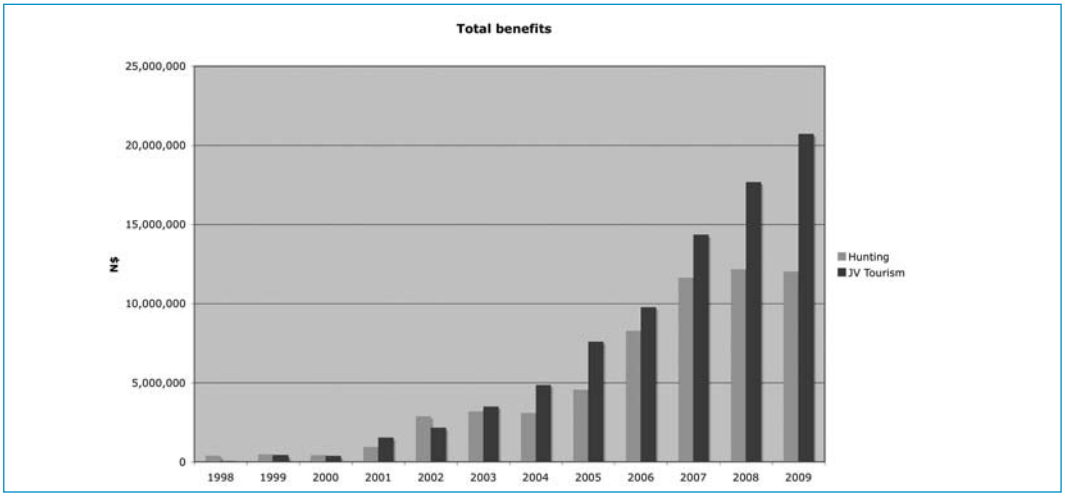
(NACSO 2010)

Table 1. Sources of CBNRM benefits to communal area conservancies and non-conservancy areas during 2009

Source of income	Value in N$	Percent of benefits
Conservancy income and benefits		
Joint venture tourism	19,979,916	57.00
Hunting concessions	12,042,228	34.30
Campsites/Community-based tourism enterprises/Crafts	2,148,874	16.10
Natural plant products	587,081	1.70
Live game sales	263,760	0.80
Total conservancy benefits	N$35,021,859	100.00
Total non-conservancy benefits	N$459,156	
Total CBNRM programme benefits	N$42,481,015	

(NACSO 2010)

Figure 7. Total benefits generated to conservancies and their members from hunting operations and JV tourism from 1998-2009



(NACSO 2010)

The catalytic and complementary role of sustainable wildlife use

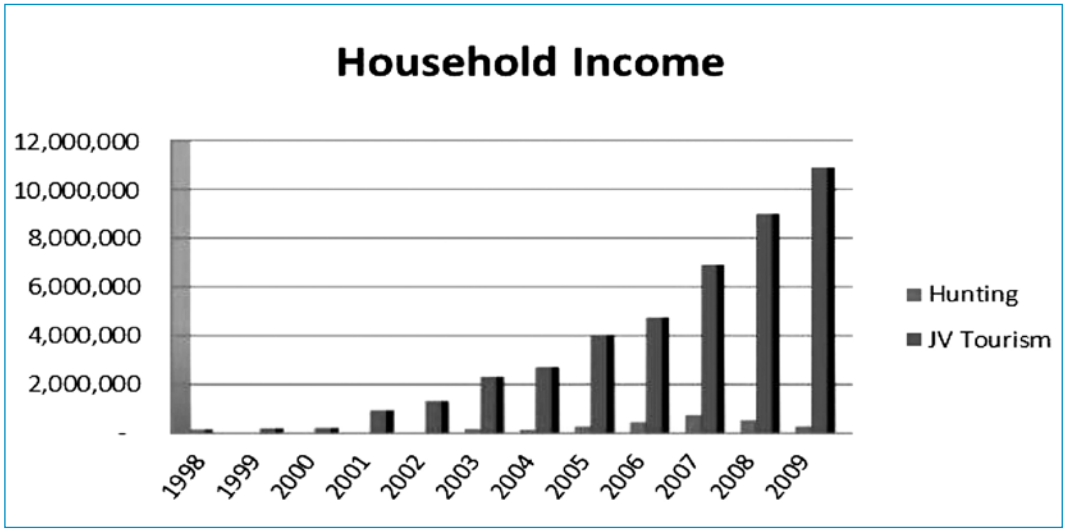
The merit of sustainable harvesting as compared to non-consumptive use of wildlife through photographic tourism is often debated intensely. However, the Namibia experience illustrates the value and complementarity of applying both 'uses'.

Since 1998, the overall largest producer of conservancy benefits has been tourism, predominantly through joint venture (JV) lodge operations (Fig. 7), which generated N$83,101,903 (US$11.06 million) in benefits (cash, employment and in-kind) from 1998-2009. In comparison, hunting benefits (cash, employment, and in-kind [largely meat]) received by conservancies and their members over the same period amounted to N$60,217,486 (US$8.04 million) (NACSO 2010).

It is significant, however, to note that most conservancies (i.e., three of the first four registered, and many more) would not have been viable without the hunting revenues to initially fund conservancy operations. Further, hunting revenues and associated benefits, such as meat, tend to occur shortly after registration, providing a timely reward to community members for their conservancy registration effort. In contrast, most conservancies take several years to realize benefits from a JV lodge due to the need for wildlife populations to recover and the complexity of negotiating JV lodge agreements.

Another consideration is the different, but complementary manner in which hunting and tourism provide benefits. For example, JV lodges produce greater benefits in terms of employment and personal income. Between 1998 and 2009, JV lodges generated N$43,359,519[5] (US$5.76 million), while hunting operations produced only N$3,004,582 (US $0.42 million) in employment benefits (Fig. 8).

Figure 8. Employment income and benefits generated by hunting operations and JV lodges to conservancy members from 1998-2009



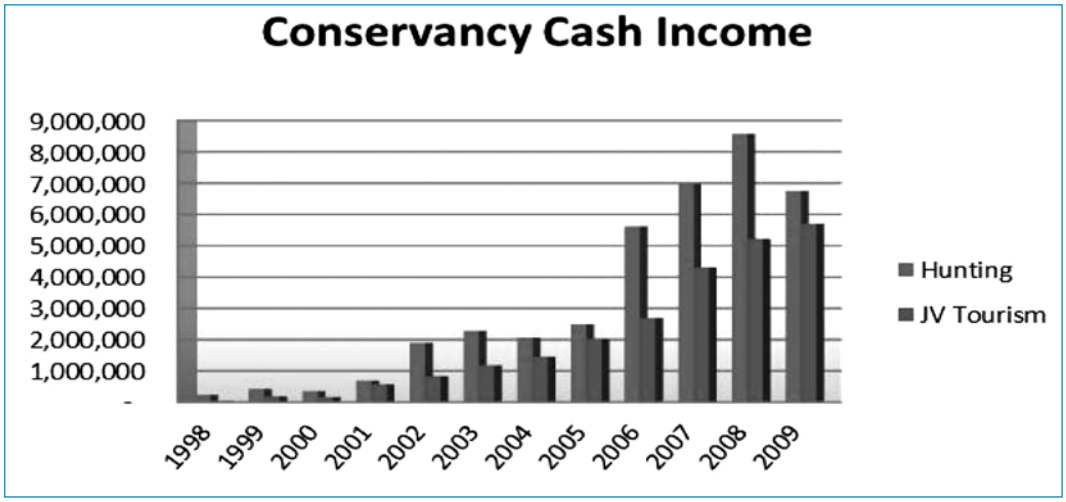
(NACSO 2010)

On the other-hand, hunting operations generate significantly greater cash income to conservancies, providing critical finance to cover conservancy management costs and rural development projects. From 1998-2009, conservancies received N$38,377,161 (US$5.12 million) in cash income from hunting, while photographic tourism produced N$24,461,117 (US$3.25 million) over the same period (Fig. 9).

Finally, and not to be under-estimated, is the value of the hunting operations in the provision of meat to community members (many very marginalized). Meat provided to community members from trophy hunting and own-use harvesting was valued at N$17,413,120 (US$2.29 million) between 1998 and 2009 (Fig. 10) (NACSO 2010).

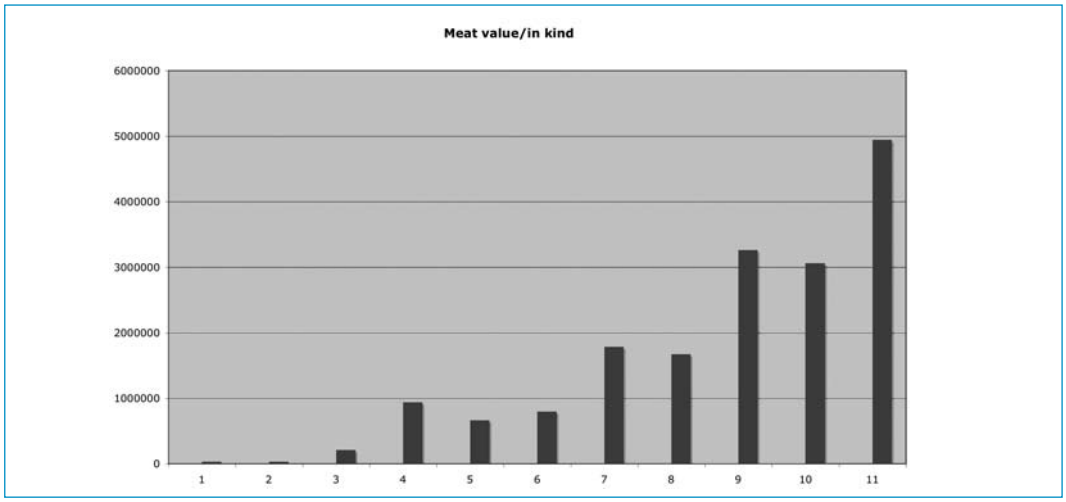
5. These figures are derived on an annual basis from financial updates provided by employment data provided by JV lodge operators.

Figure 9. Fee income generated by hunting operations and JV lodges to conservancies from 1998-2009



(NACSO 2010)

Figure 10. Meat generated by hunting operations to conservancy members from 1998-2009



(NACSO 2010)

Due to the above attributes, it can therefore be contended that consumptive use of wildlife plays a catalytic and complementary role in the CBNRM programme, remaining central to the success and sustainability of the communal conservancy movement. Further reasoning behind this rationale is:

i. There is a clear and strong linkage between the use of wildlife through hunting and the value of wildlife that is generated for communities. The competitive tendering of hunting contracts in conservancies has further allowed conservancies to recognize and attain this value.

ii. The direct and speedy realization of wildlife values (combined with a heightened sense of "ownership" over the resource base) have contributed to an attitudinal change in communities towards wildlife, making wildlife a valued asset and poaching an increasingly socially unacceptable practice. This has and continues to promote a rapid recovery of wildlife populations in communal conservancies.

iii. The speed at which conservancies can acquire income and benefits from hunting (within 2-3 months of conservancy registration) provides participating communities with a rapid reward for their registration effort and strong incentive to promote recovery of their wildlife populations.

iv. The wildlife recovery catalyzed by hunting benefits leads to increased wildlife populations, whereby photographic tourism becomes a viable development option, thus paving the way to establish lucrative JV lodge partnerships.

v. Under conditions where photographic tourism is not possible (i.e., due to low wildlife densities, unappealing scenery, high seasonality, remoteness, etc.), wildlife use through trophy hunting is often the most viable option.

vi. Finally, income from international hunters has proven to be more resilient in times of unrest, with hunters having a higher tolerance to political unrest than photographic tourists.

The Game Products Trust Fund

Another way in which the Government of Namibia has recognized the conservation values of sustainably utilizing wildlife and by-products is through the establishment of the Game Products Trust Fund (GPTF) in 1997. The Fund creates a means of capturing conservation revenue from the CITES approved sale of ivory and from the use of State wildlife resources. The objectives of the GPTF are to:

i) make grants to conservancies for projects in line with wildlife conservation and rural development;

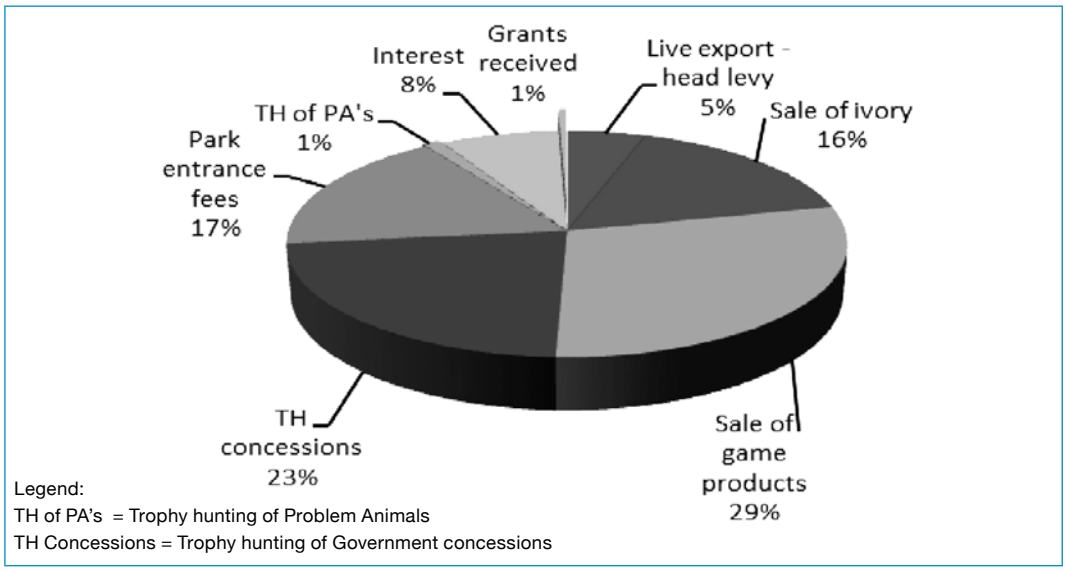
ii) support measures aimed at improving the relationship between people and wildlife; and

iii) support wildlife monitoring, management, protection, sustainable use, and development in rural areas.

The GPTF was initially capitalized by the proceeds from the first CITES authorized sale of ivory in 1999. This ivory sale generated approximately N$3.92 million (US$.6 million), but was later complemented by the second sale of ivory in 2008 for N$11.69 (US$1.19 million). In addition to the ivory revenues, the GPTF was adapted to also capture revenues from the sale of State trophy hunting concessions, trophy revenues from the removal of problem animals, sale of live game, a levy on the export of live game, sale of wildlife products, park entrance fees, and grants. Cumulatively, the GPTF has raised approximately N$100 million from the various funding sources (Fig. 11).

To date, a total of N$52 million of these funds have been reinvested back into conservation and development activities.

Figure 11. Sources of income for the Game Products Trust Fund, 1999-2011



(MET 2011)

CITES and the Namibia CBNRM programme

The Convention on the International Trade in Endangered Species (CITES) was established to ensure that listed species are not further threatened or endangered through commercial trade. CITES provides a much needed, science-based approach to the regulation of international trade in flora and fauna. Yet, at times, CITES also becomes a battleground of ideology between different cultures and organizations around matters of consumptive wildlife use. This situation is characterized by a cyclical three-year crescendo of polarized lobbying by parties at the opposite

ends of the sustainable use spectrum. At the one end, the southern African CBNRM proponents tout the importance of sustainable use and hunting to conservation; while at the other end, a spectrum of animal welfare groups, who are opposed to any form of hunting, propose photographic tourism as the savior of Africa's wildlife.

Namibia is an interesting case study in the context of CBNRM and CITES because: 1) its legal framework gives recognition to the need for both consumptive and non-consumptive forms of wildlife use; and 2) Namibia has a solid track record in meeting its CITES obligations, by ensuring that its CITES listed species are responsibly and sustainably managed for the benefit of the nation, its citizens, and the world.

Table 2. GPTF Projects Funded From Ivory Proceeds

Project Funded	Beneficiaries	Amount (N$)
Helicopter survey to determine, accurate rhino estimates, elephant and rhino demographics, sampling of found carcasses, retrieval of ivory and horn, and updating of the MIKE database in Etosha National Park	GRN	1,500,000
Movement patterns of 20 GPS-collared elephant bulls in Etosha National Park: Addressing and mitigating human-elephant conflict; promoting elephant conservation by adopting a regional approach	GRN and Communities residing near Etosha	2, 400,000
Age structure assessment of elephant and roan populations, combined with ivory retrieval in Khaudum National Park and the Nyae-Nyae Conservancy	GRN and Communities (Nyae-Nyae Conservancy)	1,700,000
Purchase of safes for keeping rhino and elephant products in Etosha National Park	GRN	100,000
Purchase of vehicles each for N# Jagna and Sheya Shuushona Conservancies	Communities	500,000
Training of MET staff in aerial survey techniques	GRN	100,000
Contribution towards the MIKE Training Workshop in 2000	GRN	41,898
Reducing elephant/human conflict in 5 Kunene conservancies	Communities	788,460.00
Awareness creation – Elephant film	GRN and Communities	100,000.00
Contribution towards the Human/Wildlife Conflict Self- reliance scheme for Conservancies	Communities	1,000,000.00 (7,000,000 committed from other GPTF sources. Over 3,000,000 already paid out)
Construction of access bridges in Wuparo Conservancy to Mamili	Communities	3,000,000 (Total cost for project 4,200,000; 1,200,000 from other GPTF sources)
Population survey of elephants in north-western Namibia	GRN and Communities	600,000
TOTAL PAYMENTS IVORY PROCEEDS		N$7,930,358
US$ Equivalent at current exchange rate of N$6.71		US$1,181,872

(MET 2011)

Namibia has jointly embraced consumptive and non-consumptive uses of wildlife based upon the belief that: 1) wildlife must generate a tangible value to the people living with it, especially for potential conflict species such as elephant, lion, leopard, cheetah, etc.; and 2) land stewards will only be able to attain adequate values from wildlife to be economically competitive with agriculture or livestock if all forms (consumptive and non-consumptive) of wildlife use are harnessed. The diversification of livelihood strategies to include as many sustainable income streams as possible is increasingly important in arid environments to mitigate the negative effects of climate change on ecosystem productivity.

Namibia has underscored its commitment to CITES and responsible management of CITES listed species through establishment of the GPTF, and the devolvement of financial benefits gained from CITES listed species to communities and conservation. The GPTF has added substantial value to the conservation of CITES listed species by harnessing the income from their use and re-investing income back into the conservation of their habitats, their biological needs, and the provision of community residents with resources to manage these species and the habitat they are dependent upon. An example of such interventions can be illustrated through the use of the ivory proceeds. The US$1.79 million received from the ivory sales has been used to fund or co-fund a range of important conservation activities (see Table 2).

The importance of CITES listed species to the success of the communal conservancy movement is significant. In fact, the viability of the communal conservancies would be seriously jeopardized if it were not possible to consumptively utilize CITES listed species. CITES species which contribute to the viability of communal conservancies include: elephant (Loxodonta africana), Hartmann's mountain zebra (Equus zebra hartmannae), black-faced impala (Aepyceros melampus petersi), lion (Panthera leo), leopard (Panthera pardus), cheetah (Acinonyx jubatus), black rhino (Diceros bicornis bicornis), and Nile crocodile (Crocodylus niloticus).

During 2009, communal conservancies had CITES approved trophy hunting quotas for elephant, leopard, cheetah, Hartmann's mountain zebra, and Nile crocodile. Removal of these animals from trade would have seriously affected conservancy operational incomes and benefits streams, as the 2009 benefits generated from the combined harvesting of trophy elephants, Hartmann's zebra, and Nile crocodile amounted to N$ 4.01 million (US$588,095), which is 33.2% of all income generated by hunting related benefits for the year.

The fact that conservancies are able to utilize CITES listed species underlines the overall effectiveness of conservancy wildlife management. Annual utilization quotas are based on monitoring data and past utilization records.

Conclusions

Over the past 13 years, Namibia has made impressive in-roads to engaging rural communities in conservation and development through its communal conservancy movement. The devolution of the rights over wildlife and wildlife products (consumptive and non-consumptive) to communal land stewards has proven an effective, incentive-based approach to altering community attitudes towards wildlife from one of nuisance to that of valued asset. Programmatic benefits contributing to this attitudinal shift include improved community livelihoods, increasing wildlife populations, strengthened viability of Namibia's protected area network, and improved governance of rural populations and resources.

As part of this process, the Namibia Government has carried out its CITES responsibilities in a forward-thinking manner, ensuring that benefits secured from the sustainable use of CITES-listed species are invested in the development needs of the people and places upon which these animals are dependent. The GPTF, originally spawned to capture proceeds from the CITES approved sales of ivory, has since been creatively expanded to leverage a range of income sources. These leveraged resources are now proactively contributing to conservation and development, and in the process, adding considerable value to the communal conservancy movement and Namibia's park system.

The Namibia case study is a good example of how a government has taken meaningful steps to ensure its citizens reap the benefits of living with wildlife in a sustainable manner. Namibia's innovative and incentive-based communal conservancy movement shows significant promise, yet remains far from reaching its long-term potential. Fulfillment of this potential will take time and continued support, but will be heavily dependent upon the ability of communal area residents to realize continued growth in wildlife benefits and for government to further validate wildlife and tourism as a recognized form of integrated land use. For this to happen, it is imperative that all forms of wildlife use – consumptive and non-consumptive – be collectively harnessed, thereby ensuring communities are well placed to optimize the benefits attainable from recovering wildlife populations and are provided with the incentives to manage their wildlife and needed habitats in an effective manner.

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Community-based natural resource management in the Central Highlands of Ethiopia

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Introduction

Many local communities world-wide now face serious environmental degradation, including deforestation, overgrazing, soil erosion, overexploitation of biodiversity and serious air and water pollution problems, all associated with earlier and ongoing mismanagement of natural resources. However, community-based natural resource management (CBNRM) does not invariably result in mismanagement of natural resources, as the Tragedy of the Commons model suggests (Hardin 1968; McCay and Acheson 1987). Therefore, gaining a better understanding of successful CBNRM systems and institutions is becoming important for conservation and development, as fortress-based approaches for conservation are increasingly questioned (Hutton *et al*. 2005).

In this paper, we examine the workings of an indigenous CBNRM system in the Central Highlands of Ethiopia. We document the origins of the indigenous resource management institution, and the subsequent resilience of this institution to political changes occurring at the national level, and to the resulting changes in management locally. We also assess the contribution of the local CBNRM system to conserving rare and endemic biodiversity occurring in the Guassa area. The study shows how CBNRM can succeed in conserving threatened species, which remains one of the critical concerns of many conservationists in ongoing debates between protection and use (Rosser and Leader-Williams 2010).

Community management of natural resources

Over the centuries, indigenous communities in various parts of the world have developed ways and means of protecting natural resources that they value locally. Indigenous systems of management have sought to prevent large-scale destruction of natural resources through their wise use. However, indigenous communities often found the modern Western concept of "conservation" that has long sought to separate people from nature in exclusive protected areas, as somewhat strange. As a result, indigenous goals often differ from those of many conservationists (Alcorn 1994; Pimbert and Pretty 1997).

Communities have demonstrated a concern for maintaining ecological processes, and they often show a keen interest in areas where fauna and flora are rare (Alcorn, 1994). Traditional societies view nature as an integral part of human society and see it as necessary to maintain proper relations with nature, to ensure the well-being of past, present and future generations. The commitment of indigenous communities to resource management is often complex and often has a long history.

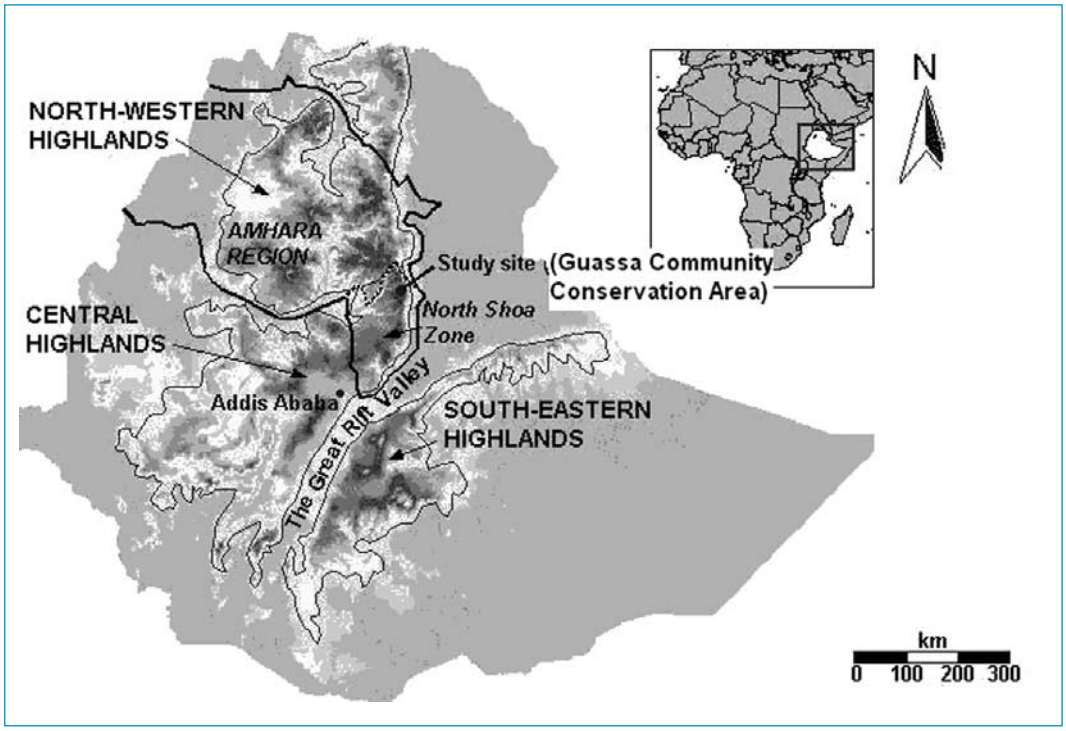
In recent years, social scientists have paid considerable attention to the role of CBNRM (Little and Brokensha 1987; Alcorn 1994; Ostrom 1997). Most communities had mechanisms, whether formal or informal, for managing such critical natural resources as grazing land, forests, hunting grounds, fishing sites, areas to collect medicinal plants and so on. Recent interest by conservationists in indigenous CBNRM systems has arisen from the failure of many other types of conservation initiatives and the search for viable and sustainable alternatives to current models for managing natural resources. From a local social perspective, this renewed interest is partly due to a new-found pride in traditional values and institutions, and their role in conserving natural resources. Most cultures and practises in the developing world emphasise responsibilities as well as rights, and a vested interest in the community, rather than on individuals (McCay and Acheson 1987; Little and Brokensha 1987). In this context, it is of particular relevance to understand the basis of a successful and resilient common property resource system in a country such as Ethiopia, which has suffered untold environmental disasters (Wolde-Mariam 1991).

Conservationists generally hold the belief that there is an inverse relationship between human involvement and the well being of the environment (Redford and Stearman 1993). Professional conservationists widely agreed that problems such as soil erosion, degradation of rangelands, desertification and loss of forests and the destruction of wildlife require management intervention to prevent further deterioration. On the one hand, official policies have consistently defined local over-use of resources as the principal cause of their destruction. On the other hand, many conservation projects have over-looked the importance of context-specific ways of providing food, health, shelter, energy requirements and other fundamental human needs (Pimbert and Pretty 1997). We now look at the biodiversity in the Guassa area of Menz, Ethiopia, which has been the subject of a long-standing common property resource management institution.

The Guassa area and its biodiversity

The Guassa area of Menz covers a total area of 98.6km^2, and is found in the Amhara Regional State of Ethiopia. It is located in the North Shoa Administration Zone and in the Menz-Gera Midir Woreda (District), known locally as Menz (Fig. 1). The Guassa area lies at a height of 3200m - 3700m above sea level, and at a distance of 260km by road from the capital city of Addis Ababa.

Figure 1. Map showing the location of the Guassa area of Menz



The varied microhabitats in the Guassa area support a rich fauna and flora characteristic of Afro-alpine communities (Ashenafi 2001). The vegetation is dominated by the Guassa Grassland (*Festuca abyssinica*), from which the area derives its name. This afro-alpine vegetation community is characterised as sub-Alpine "Wet Wurch" within the agro-ecological zones of Ethiopia (Hurni 1986).

The fauna includes 22 species of mammal, of which 27% are endemic to Ethiopia. This list of mammals comprises two species of shrews and six species of rodent, of which both shrews and two species of rodent are endemic to the Ethiopian highlands (Yalden *et al*., 1996). Records of large mammal species in the Guassa area include: grey duiker *Sylvicapra grimmia*; klipspringer (*Oreotragus oreotragus*); Gelada baboon (*Theropithecus gelada*); common jackal (*Canis aureus*); spotted hyena (*Crocuta crocuta*); civet (*Viverra civeta*); honey badger (*Melivora capensis*); Egyptian mongoose (*Herpestes ichneumon*); serval cat (*Felis serval*) and Ethiopian wolf (*Canis simensis*).

The Ethiopian wolf or Simen Fox is a specialist rodent hunter endemic to the Ethiopian Highlands. It lives only in afro-alpine habitats above 300m above sea level, where it specialises on abundant rodent prey living in afro-alpine grasslands and heathlands (Sillero-Zubiri and

Macdonald 1997; Ashenafi *et al*. 2005). The Ethiopian wolf has been rare since it was first recorded by science. With less than 500 individuals currently surviving in the wild, the Ethiopian wolf is listed as Critically Endangered by the IUCN Red List of Threatened Animals, and is the world's most endangered canid (Bailie and Groombridge 1996; Sillero-Zubiri and Macdonald 1997). Only two out of the seven remaining populations of Ethiopian wolves occur inside the protected areas of the Bale and the Simien Mountains National Parks. The Guassa area holds the most important populations of Ethiopian wolf occurring outside Ethiopia's protected area system. Although the species is critically endangered, it is not listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), as it is not subject to international trade. However, the species is legally protected in the country from any type of use that may threaten its survival.

The other important species of large mammal occurring in the Guassa Area is the endemic Gelada baboon, the only surviving member of a once widespread genus *Theropithecus*. All the locations where the species occurs lie outside Ethiopia's protected area system, except for the population in the Simien Mountains National Park. A healthy population of more than 2500 Gelada baboons survives in the Guassa area with little if any interference by the Menz community.

The Guassa area also supports an important avifauna of 114 species, comprising 12% of the species that have been recorded throughout Ethiopia, and among which are 14 strict endemics. This is a considerable number of endemic species compared to other highland areas in the country including the Bale Mountains and the Simien Mountains National Parks. The Ethiopian endemic and IUCN Red-listed Ankober Serin (*Serinus ankoberensis*) is also found in greater numbers in Guassa area than anywhere else in the country (EWNHS 1996). The Guassa area supports high densities of raptors, which feed on abundant rodent populations. The Guassa area also serves as a wintering ground for 38 species of Palearctic and intra-African migrants. Consequently, the Guassa area is classed as an Important Bird Area (IBA) (EWNHS 1996).

In terms of ecosystem services, the Guassa area is also an important national water catchment. A total of 26 rivers, springs and streams rise from the Guassa area. Most of the rivers that drain the lowlands of Menz, Yifat, Merahabete and South Wollo rise from the Guassa area and provide water for humans, livestock and development schemes. The rivers rising in the Guassa contribute a large volume of water to the two major rivers that flow through Ethiopia, the Abbay (Nile) and the Awash. The large number of springs and rivers that rise in the Guassa continue to flow as a result of the protection provided to the vegetation cover and through preventing soil erosion.

In terms of direct use values, the Guassa area is mainly used for livestock grazing and for construction material, particularly for thatching huts. Indeed, the local community refer to *Festuca* grass as '*libsachi ena gursachi*', which translates to 'our cloth'. Other household materials are also made from *Festuca* grass, including mattresses, baskets, mats, ropes, and so on. *Festuca* grass is also bartered in times of severe drought in exchange for grain. The shrubby vegetation of the area is also used for firewood and the Guassa area is the place where most of the Menz community collect their fuel wood. The area also provides medicinal plants for human and livestock use.

The Guassa area has remained under local community management for at least the last three hundred years (Ashenafi 2001). The continued presence of the Ethiopian wolf and the Gelada baboon in the Guassa, an area that falls outside the formal protected area system, provides a very important reason for better understanding how the common property system continues to be resilient in the face of the changing political and socio-economics situation in Ethiopia (Ashenafi and Leader-Williams 2005).

The *Qero* indigenous natural resource management system

The term *Qero* stands for the mobilisation of the beneficiary communities to regulate resource use by the community. However, it is not known precisely when the *Qero* system came into existence. Nevertheless, it is known to be an indigenous resource management system established in response to ensuring equitable distribution of the resources found in the area (Ashenafi and Leader-Williams 2005).

Under the *Qero* system, land holding in the Guassa area was based on *Aseme Irest*, a system whereby descendants of a pioneer father had equal title to the land. The Pioneer fathers of Menz were called Gera and Asbo. Most local people believed that the pioneer fathers came from Gondar following the invasion and defeat of Ahemd Gragn in the 17th Century (Levine 1965). The pioneer fathers set aside the Guassa for the primary purposes of livestock grazing and use of the *Festuca* grass. *Atsme Irist* was a right to claim a share of land held in common with other rightful landholders based on descent from an historical ancestor. Those who were able to establish kinship through either parent could enter a claim to a share of the land from elders controlling the allocation, and were considered among the rightful owners of the area (Levine 1965; Hoben 1973). Hence, under *Atsme Irist*, the Menz people who could trace their descents from the pioneer fathers, Asbo or Gera, could use the Guassa area. In turn, this resulted in the Qero system, which originated to protect and administer the Guassa resource from illegal users, those groups which were not descended from the pioneer fathers.

The *Qero* system worked by choosing a head man (*Aba Qiera*) for each of the two areas once under the control of the founding fathers, Asbo and Gera. The two *Aba Qieras* had an absolute mandate over controlling the use of resources in the Guassa area. The Guassa Area was closed annually on 12th of July, a date known locally as *Hamle abo*. This date is also the day when the second important fasting, *Ye Hawariat Tsom* in Coptic Orthodox Christianity, is broken, and so helps to tie secular to religious dates. Thus, the strength of the indigenous CBNRM system was re-enforced through links to the prestige, power and authority of another local level institution, the parish. Hence, the rules of protection and utilisation, and their enforcement, operated and survived by leaning on another more hallowed institution, the church. In the process, the Guassa area became a kind of sacred entity, equivalent to what some anthropologists have called "the extraordinary contagiousness of sacred character" (Durkheim 1965).

Depending on the state of its natural resources, the Guassa area could remain closed from any type of use for as long as 2-3 years. The *Aba Qieras* would meet to decide when the area could be opened or whether it should remain closed. Such long and ongoing closures were more likely to be imposed in times of plenty, when people had enough husks from their crops to supplement their private grass plot. Once the *Aba Qeiras* had agreed on the opening date, this was communicated to the resource users by any available means, usually in market places and during church services. When the Guassa area was open, sanctioned users conducted either cut-and-carry activities to harvest thatching and fodder, or use the area as grazing ground. In addition, they collected shrubs for firewood and supplemented their income by selling the Festuca grass in nearby urban centres.

The *Aba Qeira's* other main function was to mobilise the users of the Guassa area for the protection of the resource and to enact bye laws, which protect and regulate resource use in the area. Various bye laws have been enacted at different times. However, the most important law was that anybody who was found grazing or collecting the *Festuca* grass during the closed season would be fined objects and items that were difficult to obtain locally such as: 100 sacks of Cabbage seeds (100 *dawla gommen zer*), a Silver pestle (*ye birr zenezena*), a Kechemo mortar (*ye kechemo mukecha*), a wet lion skin, (*irtib ye anbesa lemid*), and a single testicled slave (*ande kolet baria*).

As time went by, enforcement of existing laws became difficult and it was found necessary to take some punitive action on the violators of the system. The step taken was to form Guassa guards who were directly answerable to the *Aba Qieras*. Whenever one of the *Aba Qieras* received information on illegal use during the closed season, such as cutting of grass or grazing or farming, the *Aba Qiera* would pass a message or order to their respective Guassa guards. In serious cases, they might have ordered all of the legal users to mobilise against the illegal users. The action usually taken against illegal grazing was to slaughter any cattle on sight. If any member of the community failed to participate in the patrol when ordered to do so, he would be suspected as a collaborator and, in some cases, houses and grain stores of the suspected collaborators were burned down. The action usually taken against illegal farming was to pull out or burn the crop while it was in the field.

The *Qero* system helped the local community to regulate use of highly sought after natural resources, such as fodder for grazing, thatching material, household materials, medicinal plants, firewood, and so on. Apart from sustainably managing the natural resource on which many households depend, the Qero system has indirectly helped the conservation of a variety of wild fauna and flora, including Ethiopian wolves, Gelada baboons and various species of endemic bird, that occur in the Guassa area.

The effects of modernising forces on the traditional system

The *Qero* system continued to operate in the Guassa area until 1975 when the Agrarian Reform in Ethiopia transformed land ownership country-wide from a common property system into a state property regime. In the Guassa area of Menz, the Agrarian reform undermined the *Qero* system, which was no longer mandated to regulate the use of the Guassa area resource. The *Aseme Irest* had previously united the indigenous community, but this was abolished when the then government instituted a different system for structuring rural communities on the basis of geographical locations rather than on the natural bonds of existing amongst indigenous communities. The establishment of Farmers' Associations with no communal bonds eroded the sense of communal holdings, and new farmers with no previous links to the Guassa were mandated to use the area. Moreover, the change of administration from that of *Qero* system to an elected council resulted in the Farmers' Association causing serious conflict between the former legitimate users and the newly mandated users of the Guassa area. The conflict became so serious that it was eventually taken up by the district administration, whose council decided to form two new Guassa Committees for both Asbo and Gera's localities. In turn, these committees together formed the present Guassa Conservation Council, with representation from nine Farmers' Associations, who currently manage the natural resources of the Guassa area. At present the Guassa area is managed under a communal bye-law enacted by the nine communities and the Conservation Council as the highest decision-making body for the Guassa area. Community scouts have also been elected to take responsibility for enforcing bye laws on the ground.

Even though the descendents of the founding fathers had the area removed from their land ownership and control in 1975, the Guassa area has since shown the resilience characteristic of traditionally managed, common property resource institutions when the rules by which they once operated suddenly collapse under pressure from modernising forces (Gibbs and Bromley 1989). Thus, true indigenous community based natural resource management institutions generally have the capacity to cope with, and adapt to, changes that in turn lead to ongoing stability of the management system, further increasing its resilience (Ostrom 1999). When the Qero system was abolished in the Guassa area, the community responded by forming another indigenous CBNRM system under the Guassa Conservation Council which is currently the highest management body for the Guassa area. Although a different form of CBNRM institution, the Guassa Conservation Council has been established in line with the existing political and socio-cultural situation in Ethiopia.

One of the most important virtues of the indigenous CBNRM system in the Guassa area is that most formally established protected areas in Ethiopia have failed to protect the resources they were intended to conserve for various reasons (Tedela 1995). This is mainly because the establishment of protected areas in developing countries all too often entails huge social and ecological costs (Hackel 1999). Thus, the general social consensus leading to designation of certain areas as national parks and reserves was not, and is not, universally shared by affected communities (Tessema *et al*. 2010). A growing body of empirical evidence now indicates that the 'fence and fine' approach to conservation has had an adverse effect on food security and livelihoods of people living in and around protected areas (Pimbert and Pretty 1997). An indigenous resource management approach can be effective because it reflects community-led constraints to regulate resource use. In areas where national parks are unlikely to be economically viable or socially desirable, community-led conservation initiatives are one possible solution.

Conclusion

In conclusion, the lessons learned from the Guassa community may be relevant to conservationists who have begun to step up their efforts to secure CBNRM systems, with potential conservation implications for species listed on the Appendices of CITES. Communal land management offers great promise for sustainable conservation relative to 'fence and fine' systems involving law enforcement in formal protected areas. Instead, traditional systems are in effect a partnership between individuals and their community, where rules and regulations enshrined within the traditions of the society ensure the ongoing functioning of the system. Their long association with their territories has resulted in developing strong ties to their lands, expressed both in customary laws, complex religious ceremonies, symbolic activities and extremely detailed knowledge of their resources. Such knowledge may be deeply coded within traditional lore handed down and refined from generation to generation. Crucially, many indigenous communities such as those living in the Guassa area of Ethiopia see clearly that their long term survival depends on their caring for their land and their associated biological resources.

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No reason to conserve: Exploring the drivers and performance of wildlife conservation in Kenya

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Introduction

This paper concerns the predicament of wildlife occupying the lands of 8 million rural Kenyans in the arid and semi-arid lands (ASAL) which cover 75% of Kenya's land area. The paper reflects on the drivers behind conservation in Kenya and the recent expansion of locally driven conservation initiatives on private and communal land. In the ASAL the dominant livelihood activity is livestock keeping. The ASAL hosts approximately 20% of Kenya's human population and 80% of the livestock; and in this human occupied landscape 65% of Kenya's wildlife is found, with 40% in private and communal wildlife conservation areas. Only 10% of Kenya's wildlife is found in National Parks, and 25% in National Reserves, predominantly the Maasai Mara Reserve (Western *et al*. 2006). For reasons of history, there is currently no legislative or institutional framework to support wildlife focused conservation on private and communal land. But without it a significant opportunity may be squandered.

The paper focuses on Laikipia County and the communal conservation areas in the adjacent northern rangelands of Kenya as a case study of locally driven conservation. Laikipia County, geographically central in Kenya, bounded by Mt Kenya to the south, the Aberdare range and Great Rift Valley to the west, and semi-desert to the north and east, is characterised by a steep rainfall gradient with corresponding changes in land-uses from cultivation, livestock ranching and nomadic pastoralism as the environment becomes drier. The adjacent dry northern rangelands are occupied by nomadic pastoralists.

Conservation performance at a national level

If national wildlife population trends are used as a proxy for conservation performance, Kenya's record is not good, with widespread wildlife declines suggesting long term conservation failure. Whilst there are different estimates, relating to spatial variation and data availability, there is overall consensus that declines are serious and on-going. Furthermore, the rates of decline appear to be no better inside formal protected areas than outside (Western *et al*. 2006).

Across Kenya's rangelands overall it has been estimated that large mammal populations declined between 38% – 55% between the 1970s and late 1990s[1]. More recently, significant declines have been reported in Kenya's premiere wildlife destinations. In the Amboseli-West Kilimanjaro/Magadi-Natron landscape between 2007-2010 wildebeest numbers declined by 83%, Zebra by 71% and Buffalo by 61% (KWS/TAWIRI 2010). Similarly, in the Maasai Mara a 70% decline in overall wildlife numbers between 1976-1996 (Reid *et al*. 2003) has been estimated to be continuing at the same rate to the present day (Ogutu *et al*. 2011). For some species such as elephant (88% decline 1973-1990, Litoroh *et al*. 2009) and eastern black rhinoceros (98% decline 1970-1990, Okita-Ouma *et al*. 2007) the most dramatic declines occurred between the early 1970s and late 1980s[2], but these have since stabilized and increased to the present day populations of approximately 597 rhino[3] and 35,000 elephant (Litoroh *et al*. 2009)[4]. As noted by

1. Wargute *et al*. (2006) 55% decline, 1970-2000; Grunblatt *et al*. (1996) decline 33%, 1977-1994; for the same period Norton-Griffiths (1998) 44% decline, with 48% outside formal protected areas and 31% inside formal protected areas; and de Leeuw *et al*. (1998) 38% decline 1977-1997. See Parker and Smith (2001), Parker (2006) and Gißibl (2006) for historical references and perspectives.
2. Oft cited dogma is that the ban on hunting in 1977 was to mitigate wildlife population declines, but evidence suggests that this was not the primary reason and it had little or no impact on wildlife declines. It may have been done more for socio-political reasons in relation to the dynamics of post independent Kenya, the legacy of inequality in the hunting profession stemming from the colonial era, the dynamics of a changing Game Department and newly established Wildlife Conservation and Management Department and the management challenges of the time. The massive slaughter of elephant and rhino for ivory and horn continued for a further decade, and declines of most species have continued to this day.
3. Population at the end of 2010 KWS presentation to the Association of Private Landowner Rhino Sanctuaries April 2011.
4. Although note that since 2009 there has been an upsurge of illegal hunting (poaching) of both elephant and rhino for ivory and horn (KWS presentation to the Kenya Wildlife Conservation Forum April 2011).

Leakey (2006) and Parker (2006), knowledge and understanding of wildlife population declines in Kenya is not new, they have been recorded and reported for more than 120 years, with observations dating from the late 1800s[5], including by Stewart and Stewart (1963) showing distribution changes for selected species between 1885 and 1963.

Causes of wildlife declines

Along with the wildlife population declines there has been a consistent articulation since the late 1880s of the causes including: overexploitation, unsustainable use, bushmeat, habitat loss, land fragmentation, human encroachment, human-wildlife conflict, livestock, poverty, firearms, and human population increases (for example see Parker and Smith 2001, Parker 2006, and Gißibl 2006 for historical references; and Wargute 2006, Craig 2011[6], Gichohi 2011[6], Grieves-Cook 2011[6], Heath 2011[6], and Isiche 2011[6] for details of greatest conservation challenges). In addition to these, corruption and mismanagement joined the list from the early 1970s onwards (Mburu 2004; Leakey 2006; Gichohi 2011[6]; Kaka 2011[6]), and more recently, extreme weather events and climate change (KWS/TAWIRI 2010; Gichohi 2011[6]). The economically uncompetitive nature of wildlife across most of Kenya's rangelands and the high costs of conservation have also been referred to as a cause for declines (Norton-Griffiths 1998; Shikwati 2003).

On the whole, most reasons for wildlife declines cited in the literature and rhetoric are not root causes, but rather are consequences of human livelihood activities and decision-making in response to prevailing opportunities. It is what lies behind the factors driving human livelihood activities, choices and decision-making that needs better understanding and articulation if the root causes of wildlife declines are to be tackled. For example, human population growth, which is commonly referred to as a threat and cause, does not necessarily drive wildlife populations down, as evidenced by the dramatic wildlife population increases in South Africa between 1964-2007 (Du Toit 2007), when the human population increased by 28.9 million (World Bank 2011). During the same period Kenya's human population grew by the same amount, 28.9 million (Lahmeyer 2006, Oparanya 2010), but wildlife populations plummeted. In South Africa, the dramatic increase in wildlife numbers alongside the human population increase has roots in the 1960s international desire to increase access to protein for people in Africa (Carruthers 2008), which influenced South African policy to facilitate game ranching as an industry. By contrast, in Kenya, wildlife has little value to the majority of people, on whose land it exists (Norton-Grifiths 1998).

From imperial environmentalism to environmental imperialism[7]

A broader examination highlights two interlinked factors which lie at the heart of the problems in Kenya, and are reflected by the work and approaches of conservation and animal rights organisations active in Kenya.

The first is the politics of conservation in Kenya, driven by a globalised conservation ideology which is rooted in nineteenth century European imperial environmentalism (Gißibl 2006) and the American model[8], and modern day interests of a global urban elite (Bryant and Bailey 1997; Fisher *et al*. 2005; Adams 2009; Nelson 2010). Since the 1880s approaches to conservation of wildlife in Kenya have been driven by outsiders with predominantly western world views, principles, philosophies and finance; the consequence of which has separated local people from the resource. Thus to identify a root cause of failure in conservation requires understanding the alienation of wildlife from the rural people on the land. The broader issue of alienation of people from natural resources is well understood, and is acknowledged as a driver of failure in both development (Sen 1981; Chambers 1997 for the wider discussion on development failure due the domination of those with power) and conservation, and has been articulated in relation to Kenyan wildlife policy and its history (Rowan 1998; Leakey 2006; Kaka 2011[6]).

5. For historical summaries and perspectives see Parker and Smith (2001), Gißibl (2006) and Parker (2006).
6. Africa Geographic magazine February 2011 edition Spotlight on Kenya 'asked some of Kenya's leading conservation and tourism thinkers for their views on the key conservation challenges facing their country'. The interview title is "In Their Own Words".
7. Gißibl's (2006) use of this term sought to explain in a nutshell the origins of wildlife conservation approaches in East Africa and the present day consequence.
8. The American model refers to the approach initiated in 1872 with the creation of Yellowstone National Park as a pure wildlife area, denying native Americans rights of access to the National Park, them having been removed from the area sometime earlier. This was not the norm in Europe at the time, but by 1945 was the approach in Kenya and other parts of Africa.

The second lies with the centralisation of authority, a consequence of the point above, and the legal framework within which wildlife is placed. Evidence from other essential natural resources shows that if the institutional management regime for natural resources is centralised, but the mandated authority is unable to fulfil its role due to a lack of capacity, capability or will; and yet rights and responsibilities are not relinquished, a management vacuum is created which tends to lead to resource overexploitation due to lack of access, control or ownership rights and lack of incentives to conserve (Juma 1989; King 2000; Nelson 2010). In exploring the root causes of wildlife declines this issue requires close examination because centralisation, State ownership and limited resources have been characteristic of conservation in Kenya since pre-independence. It is worth noting that other sectors have sought to tackle this problem through devolution, with revised legislation for water in 2002 and forests in 2005; although achieving real devolution in these sectors still requires time for the previously centralized authorities to embrace change and relinquish some of the control. Centralized bureaucratic agencies by themselves cannot provide sufficient management and other resources to conserve, protect or manage natural resources in human occupied landscapes. Calls since 2006 for genuine devolution, where both administrative functions and the power to take decisions and set objectives are decentralised and involve resource users and landowners, through drafting new wildlife conservation and management legislation in Kenya, have yet to be realised.

Locally-driven conservation: The case of Laikipia and adjacent Northern Rangelands

Since the mid 1990s there has been a rapid expansion of locally-driven conservation on private and communal land in Kenya. Wildlife conservation on private and community land in Kenya is characterised by free-ranging wildlife populations across land holdings; and the lack of a specific or supportive legislative framework, albeit that the State has recognised for some time the need for wildlife conservation outside formal protected areas. Wildlife conservation on private and communal land is intimately linked in Kenya, with private lands providing both experiences and support from which to expand to communal land. Currently the land area where locally-driven conservation is taking place covers approximately 30,000km^2 and is expanding. This is the equivalent of 68% of the area of land set aside as formal protected areas and represents a doubling of space for wildlife in Kenya's rangelands in the last decade.

Locally driven conservation was prompted in the 1990s by the recognition that if wildlife was to survive, including in the formal protected area network[9], there needed to be engagement in conservation by landowners[10]. It was recognised, however, that this would require more than just the incentive of photo-tourism. Photo-tourism had, since the 1977 hunting ban, been the primary way to benefit from wildlife, but it was recognised that this had limitations in most areas and was a fickle business. Consumptive use of wildlife was reintroduced in 1990 under a cropping programme for meat and skins. Unfortunately, this initiative only lasted until 2003. The common reason why the programme was short lived is given as mismanagement; but critical analysis reveals that it failed by design due to the restrictive policy environment which meant that less than 5% of the value added from wildlife products accrued to landowners (Elliot and Mwangi 1997).

In Laikipia County, however, the cropping programme had measurable conservation success: an additional 990 km^2 of small holder and communal land derived benefits from wildlife[11]; over 200 additional personnel were employed into the sector; illegal hunting reduced in community cropping lands due to increased community policing; Burchell's Zebra populations, which constituted 80% of the cropped wildlife, increased; and after 10 years of continuous cropping, wildlife populations in Laikipia were sufficient to allow translocations to Meru National Park to re-establish collapsed populations. In addition and of critical importance the cropping programme opened up channels of communication between Kenya Wildlife Service and landowners which remains strong to this day.

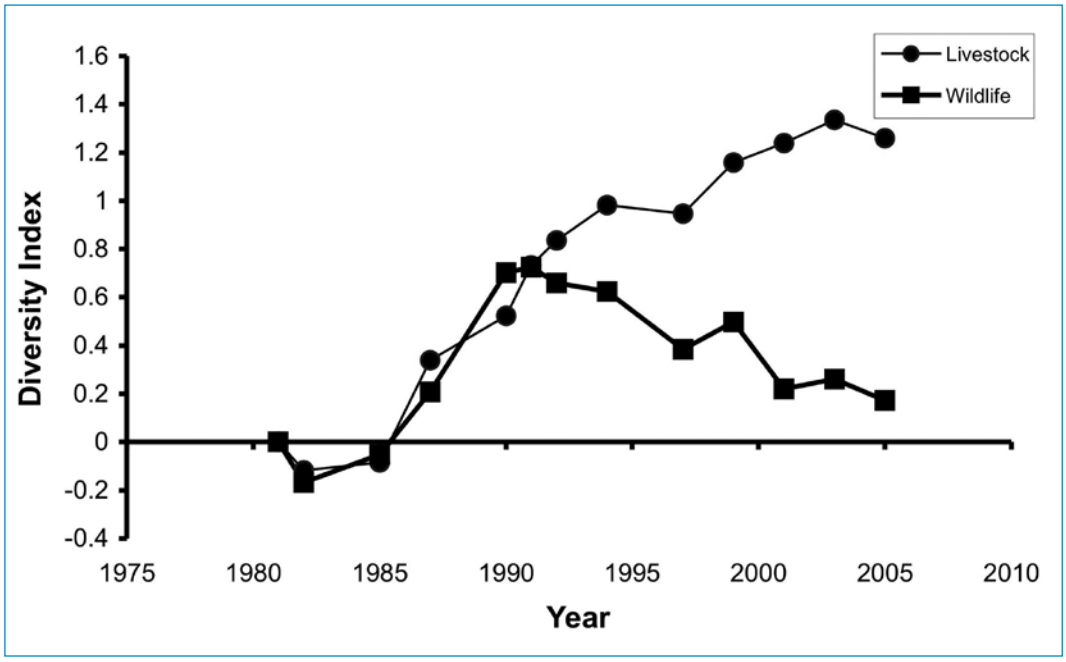
For Laikipia the legacy of the cropping era, with the strong local management and good liaison with Kenya Wildlife Service, has been the expansion of a successful landowner-based

9. At the time 70% of all wildlife lived outside National Parks and Reserves
10. Both private and communal
11. Small holder and communal land are particularly challenging to engage for wildlife

environmental conservation organisation called the Laikipia Wildlife Forum, and significant conservation success for wildlife and the wider natural resource base. It is notable, however, that the small-holder and communal land involved in cropping lost its wildlife after cropping ceased because none of those areas have been able to engage in wildlife related activities, despite an expanding photo-tourism sector in Laikipia.

In contrast with national trends, Laikipia has shown a 15% wildlife population increase between 1981-2010, with a peak in the early 1990s (Fig. 1)[12]. The declines seen in Laikipia as a whole since the early 1990s are linked to the increasing livestock populations on communal and abandoned small-holder lands now occupied by pastoralists, and the difficulty in establishing viable wildlife-based livelihoods for the owners and users of the communal and small-holder lands. Current wildlife populations now almost exclusively exist on large private landholdings (Fig. 2) although the populations are free-ranging across the wider landscape and can move into the northern drier rangelands. Laikipia's private land hosts approximately half of Kenya's black rhinos, has the fastest growing population of African wild dog, has a growing elephant population (which as part of the wider Ewaso ecosystem numbers 7,400 animals), is one of the few areas in Kenya with a stable lion population of approximately 250 adults, and has growing Grevy Zebra numbers. Overall, Laikipia has become one of Kenya's most important wildlife areas, in terms of both numbers and conservation of threatened and endangered species.

Figure 1. Change in abundance of wildlife[13] and livestock[14] in Laikipia, 1981-2010



Source: M. Kinnaird, G. Ojwang' and T. O'Brien, unpublished data.

Wildlife distribution in Laikipia is linked to land tenure, with large-scale private landholdings providing the space for most wildlife (Fig. 2). For example Impala populations are 20 times higher, Burchells Zebra six times higher and Grant's and Thompson gazelle five times higher on private than on communal land. 40% of private landowners are actively engaged in photo-tourism, and contributions from photo-tourism to land holding annual operating costs range from 5%-100%, with 38% being the average contribution (April 2011 LWF survey of Laikipia). Tourism revenues therefore do not fully explain the existence of wildlife on large-scale landholdings in Laikipia, a significant reason being that many landowners can afford to host wildlife through other non-wildlife related means, and simply wish to enjoy the presence of wildlife. However, in communal lands wildlife distribution is strongly tied to wildlife-linked benefits. In Laikipia overall wildlife population densities are lower on communal lands, but in these areas are higher in community conservation areas, where 30% of Laikipia Group Ranches are engaged in photo-tourism.

12. Analysis of the wildlife trends in Laikipia shows a link to increased livestock and lost space in communal and small-holder lands and the carrying capacity of the land being reached.
13. 15 species
14. 5 species

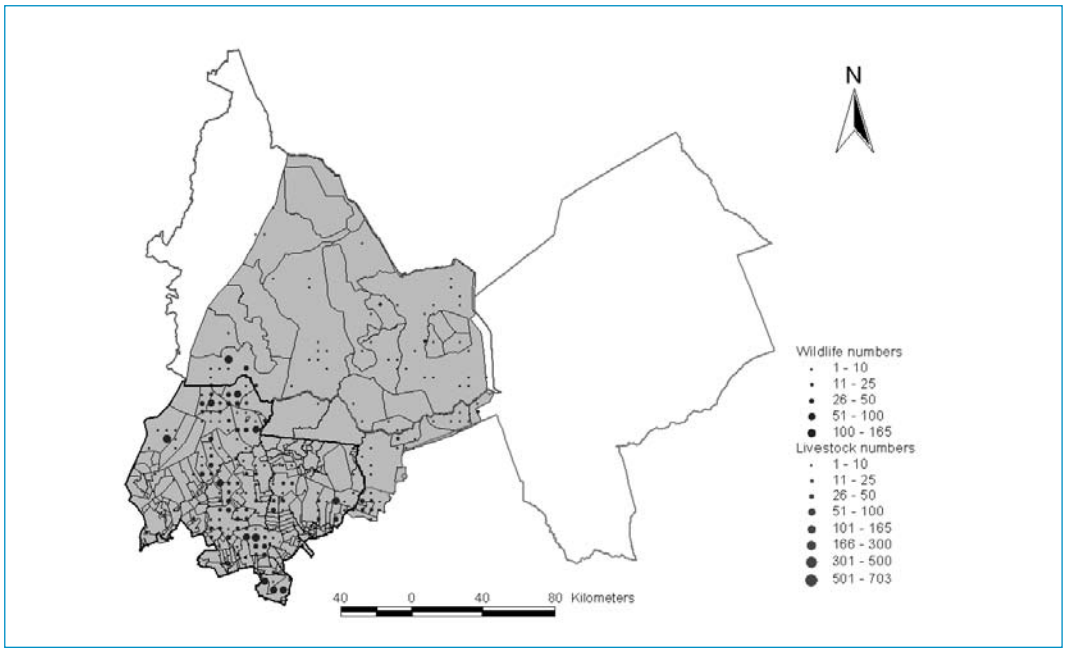
There has been a dramatic increase in wildlife-based activities in Laikipia and the bordering northern rangelands since the mid 1990s. Of the 18 communal conservation areas currently working under the auspices of the Northern Rangelands Trust (NRT), photo-tourism is considered a viable option for 10, whilst 6 are actually engaged in tourism (including bird shooting as well as photo-tourism). Projections for 2011 show that tourism revenues will contribute between 5%-25% of operating costs in 7 communal conservation areas, the balance being paid with external donor funding. 60% of photo-tourism revenues are allocated to community-determined projects and the 40% balance contribute towards operating costs. The remaining 11 communal conservation areas are 100% funded by donor funds. It is worth noting that the NRT receives 8-10 applications a year from communities wanting to form conservation areas, which is creating a significant challenge in view of the high dependence on donor funding.

What drives communities to apply to NRT for support to conservation areas can be drawn from cost benefit analyses of established communal conservation areas by Malleret-King and Hatfield (2008), and Glew *et al*. (2010) in Laikipia and the northern rangelands. Indirect benefits from the engagement of conservation organisations and/or tourism operators feature strongly. Examples listed include education and health care, security, road infrastructure, relations within the community, relations with other communities, grazing access and quality. Both studies showed that conservation areas can bring livelihood benefits, and that benefits at both the household and community level tend not to be financial in nature, but primarily in relation to public services and infrastructure.

From the perspective of wildlife, most communal conservation areas in northern Kenya have only been established in the last 10 years, the exceptions being Il Ngwesi in Laikipia and Namunyak in Samburu, both formed in 1995. Wildlife population trends have had some analysis, and whilst the distribution maps in Fig. 2 show that Laikipia private ranches remain the primary haven for wildlife, positive results are being found in communal conservation areas.

Preliminary analysis by NRT of wildlife trends in communal conservation areas show that populations of some species have stabilized or are increasing, and that conservation areas are particularly important for species such as Grevy's Zebra, hosting 50% of the Kenyan population (Kenya has 93% of the global population), elephants are returning to areas for the first time in 30 years, and African wild dogs are expanding throughout the range and being frequently sighted in contrast to 10 years ago. However, across the landscape there continue to be declines in

Figure 2. Distribution of wildlife[15] in the Greater Ewaso Ecosystem (Laikipia, Isiolo and Samburu Counties shown, Laikipia in black outline in the South West)



Source: Prepared by Mpala Research Centre.

15. 15 species

species such as Oryx, Eland and Gerenuk which are preferred food sources for people (J. King, Research and Monitoring, Northern Rangelands Trust, pers. comm. April 2011; DRSRS/MRC wildlife survey 2010).

The creation of communal conservation areas in northern Kenya was until very recently been driven by conservation organisations on the basis of areas of importance for species, such as elephants or Grevy's Zebra. More recently, however, there has been an increasing desire by communities to form conservation areas, as evidenced by the number of applications to NRT for support. The hypothesis is that the livelihood benefits that are being enjoyed by established communal conservation areas are stimulating the demand. The fact that the benefits local communities derive from engagement in conservation are predominantly public service in nature (roads, healthcare, education) may reflect the lack of long term investment by Government and other agencies in these areas from a development perspective, rather than people's desire to engage with wildlife. Whilst there is increasing evidence that Government is contributing toward conservation area costs, both from a development and conservation perspective, communal or private conservation areas are not driven by Government or non-conservation organisations despite their clear development role. To date, communal or private conservation areas remain unrecognised legally, despite their scale, development and conservation importance. With dependence on external funding, the localised successes are unlikely to provide a long-term solution to the national declines in wildlife without a more formal enabling environment.

Conclusion

The expansion of locally-driven conservation in Kenya has been dramatic in the last decade, and benefits for people and wildlife are evident and important. However, this only accounts for 6% of the ASAL land area, and with external donor funding needed to cover 75%-100% of operational conservation costs in areas remote from the tourism honey pots such as the Maasai Mara, there may be limits to continued expansion. Yet the ASAL presents a significant and unique opportunity in Kenya where wildlife has the potential to catalyse widespread environmental, social and economic benefits. However, in Kenya there is no legal-institutional regime to support either the consolidation or expansion of locally driven conservation.

In the absence of such a legal-institutional framework the expansion has been opportunistic. Conservation organisations have taken on a role that would be conventionally filled by Government and development agencies, making the most of the gap in public services delivery to maximise investment in conservation. Nevertheless, this current opportunity for conservation may be precarious without the right institutional environment.

There is no doubt that wildlife could play a transformative role for millions of people in the ASAL, and for Kenya as a whole, and there is no doubt that people are willing to take wildlife-derived opportunities. Locally-driven conservation in Kenya's ASAL shows that wildlife can play a catalytic role in reviving land health, societies and economies, as they do elsewhere in the world, and wildlife populations would respond positively. The tragedy in Kenya is that whilst the destiny of wildlife and environmental health lies literally in the hands of rural Kenyans, matters of wildlife in any formal sense are out of their hands; and there, with 120 years of conservation history, is a hint of the root cause of Kenya's catastrophic wildlife declines and to some extent ASAL poverty. Much greater attention must be given to identifying and understanding the root causes of wildlife declines and conservation failure.

In the final analysis wildlife remains disconnected from the people. The benefits that are currently providing the incentive for locally-driven conservation may in future be provided by any number of development or private sector initiatives that have no link to wildlife conservation. The lack of an enabling institutional environment to reconnect people and wildlife continues to give most rural Kenyan's no reason to conserve.

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Ranching the broad-snouted cayman (*Caiman latirostris*) in Argentina: An economic incentive for wetland conservation by local inhabitants

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Introduction

In spite of the widespread belief that indiscriminate hunting and utilization are seen as the main factors responsible for the marked numeric decline of wild species worldwide, it is a fact that their effects are often of lesser significance in comparison to the increasing loss of habitats. Currently, the human population is surpassing 6.800 million people and will probably remain in constant growth until reaching 10.000 million in a few years (UICN 1980). The necessity for food and shelter will grow at the same pace, requiring more wood, minerals, fossil fuels and, above all, more land suitable for intensive agriculture. Facing such realities, how can natural ecosystems be conserved in the long-term? If loss of habitat continues at this pace, what will be the fate of the species we are concerned about today? While the designation of natural reserves or sanctuaries can alleviate the problem to some degree, it does not represent a complete solution by itself.

The evaluation of natural ecosystems in economic terms and their incorporation into production systems is currently presented as the most solid tool for habitat conservation, since the maintenance of such productivity is in everyone's interest. One of the preferred means for addressing the protection of natural ecosystems is through the sustainable use of wildlife, where the economic benefits act as an incentive for conservation. In addition, the identification of 'key' species of economic importance for certain ecosystems generates indirect conservation gains for other species associated with the same habitats (Larriera *et. al*. 2008).

There is a clear division in practice between species that do not have economic value at present, and which therefore may depend on reserves, parks, sanctuaries or protected natural areas for their long-term survival, and those that have clear economic value (some of which are already severely depleted). Paradoxically, it is that same commercial interest that could transpire to be the means of their conservation, and help a population recovery. In fact, this has already occurred in many cases (Herrera, 1999; Larriera and Imhof 2006; Larriera *et al*. 2008; UICN 1980, 1991).

Generally, the management of wildlife under different ways of sustainable use is the viable alternative to assure the conservation of these species. In no way will it be feasible to indefinitely apply restrictions to the use of the fauna or flora in the wild across the board, while at the same time, basic human needs are increasing. This does not mean that all species of economic interest are saved from depletion or extinction in this way, but simply that as long as those individuals interested in exploiting a certain resource understand the rationale of sustainable use as the most profitable in the long-term, the possibilities of the species survival in question increase quickly.

Sustainable use of crocodilians

At one time, the conservation of wild crocodilians was pursued exclusively through the creation of wildlife refuges or sanctuaries, the imposition of strict bans on wild harvesting, and the belief that closed-cycle captive breeding was the only rational type of use. At that time commercial utilization of wild populations was regarded almost as the first step on the road to extinction. Subsequently, the concept of sustainability came into being, and in the case of many crocodilian species that were historically exploited, it became evident that rational utilization need not affect the status of the population. It was also evident that the real problem was environmental modification through deforestation, drainage of wetlands, or more recently, intensive agriculture.

From that moment, “the enemy becomes a friend” and commercial use was recognised as one of the very few effective tools against habitat loss.

The challenge was to change people’s attitudes towards crocodilians, and to give them more “value”. Simply telling the public that crocodilians were “good” for the environment was not enough. People needed more tangible rewards. They got these in several ways. The first step was not to deny simple facts: crocodiles are sometimes dangerous and can be a problem, so extensive educational awareness campaigns encouraged people to treat crocodiles with caution and respect.

The idea of “sustainable use” of wild populations was highly controversial in the past, more so than it is today. However, in this case it has provided an economic incentive helping to conserve crocodilian species and their habitats. As a conservation strategy, “sustainable use” is endorsed not only by the IUCN-SSC Crocodile Specialist Group (CSG), but also the world’s major conservation bodies including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD) and WWF (Webb pers. comm.).

It is self-evident for many NGOs – and for most scientists and wildlife managers – that sustainable utilization of crocodilians through ranching or hunting, whether alone or combined with other activities, such as ecotourism, does work positively in favour of conservation. Despite the fact that, in general terms, there has always been significant objection to the idea of harvesting wildlife for conservation, and that there are many people who will argue that it doesn’t work, actually it has shown to be highly successful in many instances. On the other hand, even those who still harbour hostility towards crocodilians acknowledge their biological and economic importance, and would not wish to see them disappear. Such is the importance of linking conservation with people (Hutton and Child 1989; Hutton and Webb 2002; Hutton *et. al*. 2002; Webb pers. comm.).

The Crocodile Specialist Group

The IUCN-SSC Crocodile Specialist Group (CSG) was established in 1971, before CITES came into force with all crocodilian species listed on its appendices (1975). The formation of the CSG was motivated by conservation concerns about the world’s 23 species of crocodilians distributed in some 100 countries. Despite little formal research, it was clear that most species had suffered serious population declines, prompting genuine fears of extinction. The declines were due mainly to excessive and uncontrolled commercial harvesting for the luxury crocodile leather industry (http://www.iucncsg.org/ph1/modules/Home/).

The CSG today, with a voluntary membership of 436 scientists, wildlife managers and crocodile industry representatives from 57 countries, can report that 19 crocodilian species appear to be secure from extinction and only 7 (http://www.iucncsg.org/ph1/modules/Home/) species are still at risk. Paradoxically, none of these have high commercial value (http://www.iucncsg.org/ph1/modules/Home/).

Management programs involving sustainable use of wild crocodilian populations have demonstrated that conservation goals (recovering a depleted population) can still be achieved while part of the population is being harvested for trade, creating incentives to keep the program going. They have also shown that conservation and commerce can coexist without conflict, despite being motivated by different goals. Most importantly, they have demonstrated that if people and wildlife both benefit from wildlife conservation programs, the programs will have a better chance of internalizing costs and becoming self-supporting in the long-term. Programs that rely on transient donor funding are inherently difficult to sustain because the funding is finite and will eventually be reduced or withdrawn. All the benefits are consistent with the aims and goals of most environmental agreements and organizations (e.g. CITES, CBD, IUCN, UNEP). They also parallel the goals of the UN Global Compact, created in 2000, which aims to encourage the business world to adopt sustainable and socially responsible policies (Webb pers. comm.).

These management programs provide the luxury leather market with a legal supply of crocodilian skins, with significant ethical credentials. Part of the value of most high fashion handbags sold to customers in Europe today tracks its way back through the supply chain to individual people and families, often in remote areas, who harvested the egg or the crocodilian. It ensures that people at the coalface of crocodilian conservation in the field – whose actions will ultimately determine whether crocodilians and their habitats are retained – become direct beneficiaries of their conservation (Webb pers. comm.).

Ranching Caiman latirostris in Argentina

The northern part of Argentina represents the southern-most limit of the distribution of the Broad-snouted Caiman (*Caiman latirostris*) and the Yacare Caiman (*Caiman yacare*). Both species are distributed in the Provinces of Formosa, Santa Fe, Misiones, Corrientes, Entre Rios, Chaco, Santiago del Estero, Salta and Jujuy, in Argentina (Figure 1), although *C. yacare* occurs in higher densities above the 30° latitude and *C. latirostris* up to the 32° latitude (Medem 1983; Waller and Micucci 1993; Yanosky 1990).

Figure 1. Distribution of Argentinean crocodilians

Populations of the Broad-Snouted Caiman (*Caiman latirostris*), at least some years ago, were considered to be seriously depleted, partly due to commercial over-exploitation of the past decades and to the progressive loss of habitat caused by drainage of the marshlands for cattle production. On the other hand, the few remaining adults in the wild were regularly killed by the local inhabitants, sometimes to sell the skin on the illegal market, but also out of fear for the welfare of small animals and children. As field work progressed, a distribution area and a reproductive potentiality bigger than what had been expected were verified (Larriera *et al*. 2008).

During the period of illegal hunting, until the late 1980s, Broad-Snouted Caiman's skin was the preferred one, because its high quality compared with Yacare caiman (*Caiman yacare*), which is much more ossified (Fuchs 2006). In the first studies in the wild, it was believed that the situation of *C. latirostris* was worse than it really transpired in the field. This was because the environmental preferences of the species, which inhabit heavily vegetated places, are difficult for humans to access, whether for hunting or studying, making effective population assessments difficult. On the other hand, *Caiman yacare* prefers open water environments, giving the impression that they were more common in the places where both species were found. Adequate studies subsequently demonstrated the reality, as the only difference seemed to be that Caiman latirostris was not less frequent, but simply more difficult to locate (Larriera *et al.* 2008).

Ranching of eggs, combined with restocking of the wild population, was considered the safest option to pursue with regard to minimizing the impact on the population. Listed in Appendix I of CITES, international trade in *C. latirostris* products was prohibited until the Argentinean *C. latirostris* ranching proposal was approved at the 10th Conference of the Parties to CITES (Harare, Zimbabwe 1997), and the population transferred to Appendix II. Initially, ranching was only implemented in Santa Fe Province, but in 2001 it was extended to Formosa Province, and in 2004 to Corrientes Province (Larriera 1990, Larriera 1998; Larriera *et al*. 2008; Ross 1998). *Caiman yacare* was already listed in Appendix II of CITES, so no concessions from CITES were required.

The background for the CITES downlisting was essentially the scientific information generated by the ranching program that began in Santa Fe Province in 1990 (Larriera 1990, 1991, 1993, 1994).

Natural history and the ranching program itself

Crocodilian activity is dependent on ambient temperature. In winter, in the southern limit of its distribution (Santa Fe Province), ambient temperatures fall to 0°C on some days, so activity is restricted to a few movements between the land (where the animals are exposed to the sun) and the water. From October, crocodilians begin to feed more often, and prepare themselves for the reproductive season. Mating begins in early November, and nest construction from early to mid-December. Females lay their eggs in a mound nest built with vegetation and soil, sometimes far from permanent water. Egg-laying occurs from mid-December to mid-January. Mean clutch size for *C. latirostris* in Argentina is 35 eggs, and the natural incubation period is around 70 days (Larriera and Imhof 2006).

It was estimated that only 30-40% of wild eggs produce hatchlings, with the most common causes of embryonic death being flooding and predation (Larriera and Piña 2000). Average survivorship to one year of age has been estimated at 10%, due to predation and the effects of winter (which starts two to three months after hatching at the southern limit). However, survival varies markedly from year to year according to environmental conditions (Larriera and Imhof 2006).

The rationale for the harvest of wild eggs for captive rearing (ranching), is based on consideration of the high natural mortality of embryos and hatchlings and that returning up to 10% of animals hatched at the rearing station will at the very least keep the population stable or allow it to keep growing. The philosophy of the technique is very simple, and consists of “saving” animals under captive conditions, which allows utilisation of some of them for commercial purposes, in order to give economic value to the wetlands where they live.

Through the ranching program egg harvesting is carried out from mid-December to late January. Normally the nests are located by cattle ranch employees, who receive a payment for every marked or harvested egg. During the first years of the work, local inhabitants only identified nests in the wild, and the harvest was carried out by project personnel. But as the work progressed, local people in the field were trained to harvest the eggs themselves, which meant more money for them. The transport of eggs from the nesting areas to where vehicles are waiting is carried out using horses in most cases. Distances vary from a couple of hundred metres up to 15 kilometres (Larriera and Imhof 2006).

The harvest of the eggs is carried out by the “Gauchos” on the basis of the technique proposed by Larriera (1990), and consists of opening the nest to expose the eggs, which are then marked with colour pencils on the top, in order to maintain their relative positions in the incubator as changing these could kill the embryos. The eggs marked in this way are placed in plastic containers together with nest material, thus minimizing the effect of rough movements during transport.

Eggs are transported to the rearing station in Santa Fe City, where they are placed in incubation chambers with 98% humidity and 31,5° C conditions. At hatching, hatchlings are marked by cutting a sequence of the vertical tail scales, identifying year and nest number, and then transported to rearing pens where water, temperature and food are controlled (Larriera and Imhof 2006; Larriera *et al*. 2008).

Since its beginning in 1990, the ranching program in Argentina has returned around 30,000 C. latirostris yearlings to the wild. The recovery of the wild population has been verified in all the harvest locations, with exceptional increases of 1,500% in some of them (Larriera and Imhof 2000; Piña *et. al*. 2010; Siroski 2003). It has also been confirmed that 50% of the breeding females in the working areas are animals previously released by the project (Larriera *et. al*. 2006).

Conclusions

The local inhabitants usually involved in the project are employees of the cattle ranches, so they are really the cowboys in the field. We in Argentina call them "Gauchos", and their work is basically to control the cows in areas of up to 3,000 hectares each. They know their localities very well and are familiar with the nesting areas of the caimans, so during the breeding season they are the first ones to find the nests, and, when properly trained, they also carry out the harvest. These people receive benefits directly from the program through a payment for every egg collected – currently $US 1 each. Some of the Gauchos harvest just two or three nests, amounting to only $US 100 to $US 200 for the work, but others in more productive areas, and those more motivated, can harvest up to 1,000 to 2,000 eggs which represents a significant amount of money to them, considering that their salary is around $US 400 per month.

Of course, the economic incentive also acts to stop local inhabitants killing caimans and to protect the nesting areas. Because they have an economic incentive to keep the caiman population in good shape, they do not allow anyone to touch the animals in the field, so in practice, they are actively involved in the protection of the wild adults. On the other hand, the Gauchos are also involved in the research work, such as releasing and population monitoring, together with the almost 50 biologists, veterinarians and sociologists involved in the scientific activities (Figure 2).

Certainly caimans are now no longer a problem for the Gauchos and do have a positive value to them. Between the three Provinces involved with ranching programs, there are about 1,200 people involved in one way or another, which is more than all the employees of the National Parks, the local government officials, and the national government officials in charge of the enforcement of the laws in the country. In effect, it is a task force devoted to the adult caiman adult protection.

In the last season in Argentina about 30,000 *C. latirostris* and 60,000 *C. yacare* eggs were harvested, which is a major incentive to protect the adults for the local inhabitants in the north of the country. This meant that in those regions where ranching is now carried out, during the last year the local people who live in the field and share the ecosystem with the caimans have received almost $US 90,000 through egg payments. Certainly, no-one wants to see the crocodilians vanish now. In fact, they would welcome greater numbers.

This is a good example of how a CITES Appendix down-listing started a process with obvious benefits to the species, the environment and the community.

Acknowledgements

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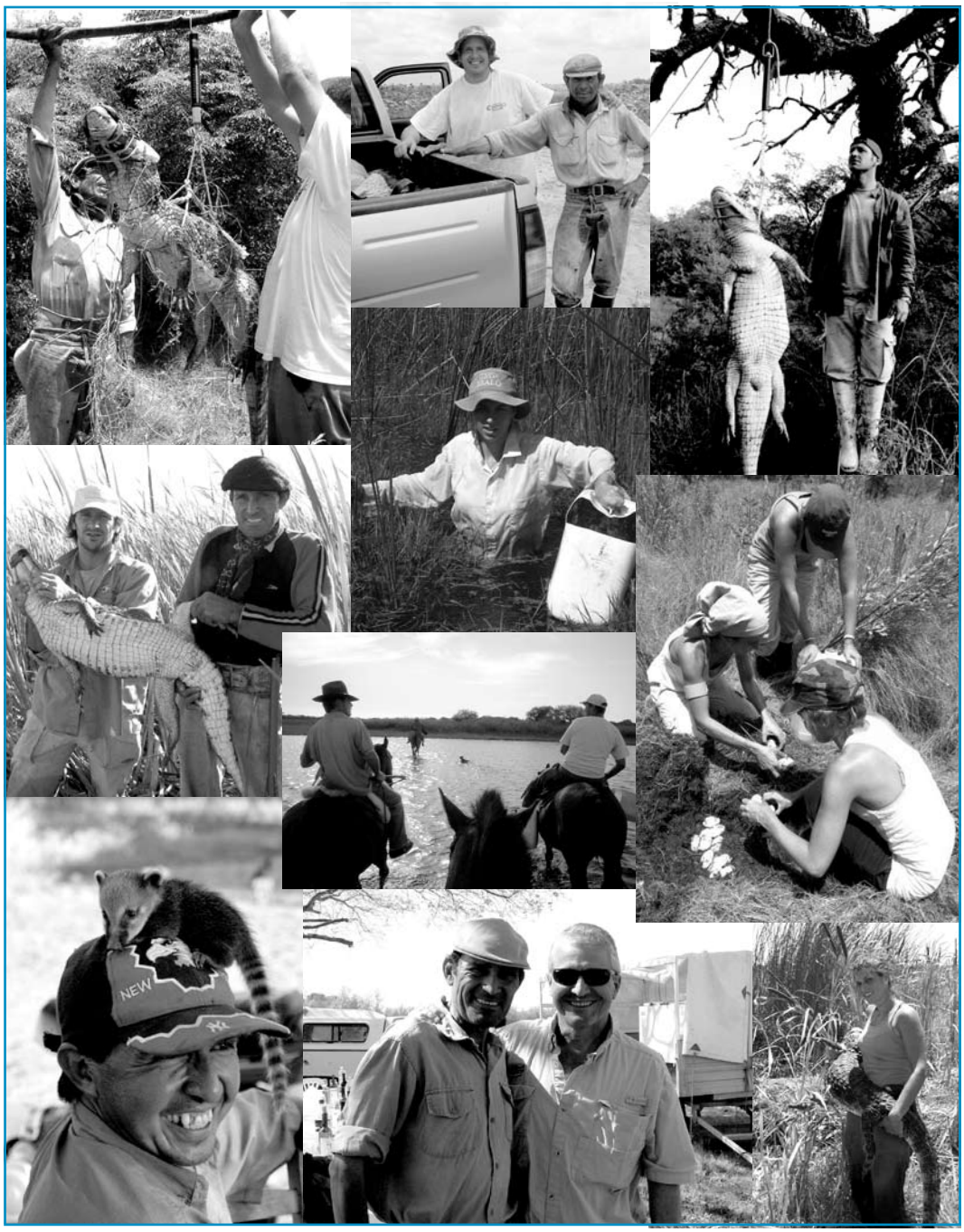
Figure 2. Gauchos and researchers working together in the field



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The relevance of CBNRM for the conservation of the Yellow Anaconda (*Eunectes notaeus*, CITES Appendix II) in Argentina

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Introduction

International trade in reptiles, involving millions of skins each year, is an integral part of the exotic leather industry, which has existed for more than half a century. In the mid-1990s it was estimated that at least 10 million reptiles were hunted each year to be processed and manufactured into products, mainly destined for markets in the USA, Japan and Europe (Jenkins and Broad 1994).

In Argentina, commercial trade in snake leather probably began in the 1930s and peaked in the 1940s (Gruss and Waller 1988; Micucci *et al*. 2006). According to CITES trade data, between 1980 and 1999, 320,000 Yellow Anaconda skins were traded worldwide, but mainly to USA and Europe. In those years, Yellow Anaconda skins on the world market originated principally in Argentina and Paraguay. Since then, the volume of trade has declined sharply, mainly due to restrictive measures adopted by both countries (Micucci *et al*. 2006).

As happened with practically all Squamata in trade, the exploitation of anaconda historically was carried out in an ad-hoc way and was certainly not based on scientifically sound guidelines or even basic biological information (Waller *et al*. 2007). However, Yellow anacondas were and remain common animals throughout their range (Strüssmann and Sazima 1993; Strüssmann 1997; Micucci *et al*. 2006). Favourable ecological attributes in combination with environmental and socio-economic factors, explain why Yellow anacondas withstood unregulated high off-take harvest levels during more than 20 years (Waller *et al*. 2007).

In the early 1980s, major concerns about the conservation status of historically traded species, as well as a progressive improvement in CITES implementation, led to the establishment of management programs as an option to unregulated utilization. However, in spite of the experience gathered with caimans and crocodiles, practically nothing was done to manage snakes and lizards effectively despite the fact that trade in these species involves millions of skins annually (Scott and Seigel 1992; Dodd 1993).

Hunting of Yellow anacondas diminished abruptly in Argentina when trade was effectively banned in 1999. However, at several locations in the Province of Formosa, anacondas were still opportunistically captured, but their hides were smuggled through to Paraguay for export.

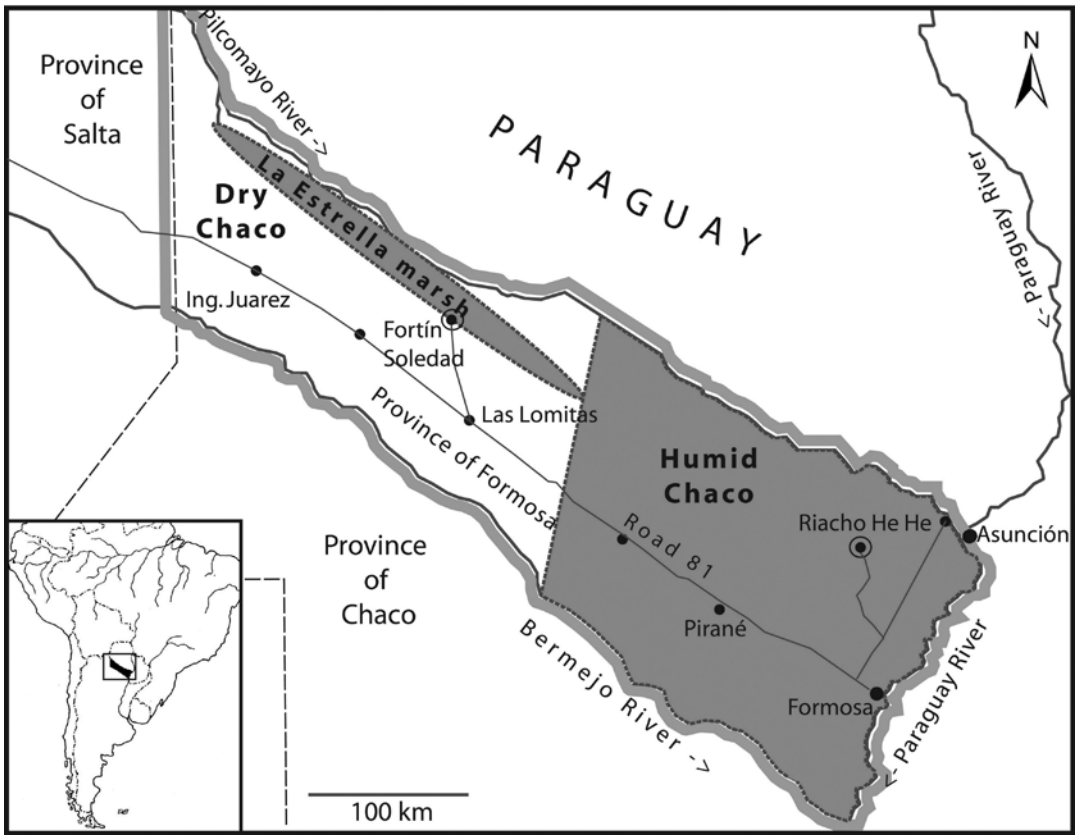
In 2001, a study in Formosa assessed the feasibility of harvesting Yellow Anaconda skins in a sustainable manner (Micucci *et al*. 2002). In 2002, as a direct result of that research, the CITES Management Authority of Argentina asked Fundación Biodiversidad, an NGO, to design a management program for the species.

Reconciling local traditions with conservation

The Yellow Anaconda Management Program (YAMP) was conceived in 2002, with the objective of reconciling the traditional use of the species by local communities with its long-term conservation. Additional goals were to promote biological research on anacondas, avoid resource misuse and waste, and maximize local income in a manner that would favour resource and habitat appreciation (Micucci *et al.* 2006).

From a conceptual perspective, the YAMP is based on an Adaptive Management Approach (AMA; Holling 1978), well suited to a system with high levels of uncertainty. It provides the ideal conceptual framework for exploited species for which research and population monitoring programs, using standard methods, are often not practically feasible to implement.

Figure 1. Distribution of Yellow anacondas in Formosa: *La Estrella* Marsh and Eastern humid Chaco plains in grey



The Province of Formosa in the far north of Argentina was selected for implementing the harvest program due to the abundance of anaconda habitat, a long-standing hunting tradition, and a favourable governmental predisposition towards sustainable use (Fig.1). Formosa has responsibility for establishing and controlling procedures and guidelines for executing the program at the local level. Fundación Biodiversidad (FB) leads and executes the annual technical program. Major reptile skin exporters finance and participate in the program under a mechanism established by the CITES Management Authority of Argentina.

Formosa still harbours large tracts of relatively well-preserved ecosystems and a significant ethnic population. The main indigenous inhabitants are the Pilagá, Toba and Wichí. Formosa is entirely located inside the *Gran Chaco* eco-region (1,000,000 km^2), which is mostly an alluvial sedimentary plain, shared between Paraguay, Bolivia and Argentina. The ecosystems of the *Gran Chaco* are unique but were poorly understood by scientists until recently. Nowadays, thorn natural forests and extensive palm savannas are progressively being converted to agriculture and cattle production which usually involves vegetation clearing, burning and the draining of wetlands.

Anacondas are abundant everywhere in Formosa's Humid Chaco plains but particularly in the Pilcomayo River floodplain locally known as *La Estrella* (Fig. 2). La Estrella is a highly seasonal marsh some 250 km long and 3,000 km^2 in area. Every year, rainwater originating in the upper basin of the Pilcomayo River floods the region entirely for 8 months. The YAMP was adopted by local communities living in the La Estrella floodplain, where a subsistence economy of rural and indigenous people coexists with a reasonably dense population of anacondas.

Local inhabitants at *La Estrella* Marsh are mainly indigenous people and creoles. Poverty is widespread and the main land uses are livestock rearing and forest resource exploitation. Since

Figure 2. La Estrella Marsh during its seasonal flooding

La Estrella is located in the arid part of Chaco, the local economy depends on the seasonal flooding, which is the main source of water for the people, and nutrients for the grasses and livestock during the dry season.

Harvest control

The harvest of Yellow anacondas involves three fundamental economic actors: *hunters, local skin buyers* and *exporters* (Fig. 3). Middlemen (sub-local buyers and transporters) are not allowed to participate. Anaconda collectors are rural indigenous and creole community members. About 300 families participate in anaconda hunting in the Province of Formosa each year. Usually, the local skin buyer (LSB) is also a food supplier or market-man and has the logistical means for transporting and stockpiling snake hides.

During April and May a series of trips are organized to register and inform LSBs on the year's guidelines. These activities are aimed at regulating hunting effort, although the Program provides no limit to the number of hunters (in practice there are a finite number). These are closely related to the skin buyers, due to economic and cultural factors. Immediately before the opening of the harvest (June), the Program notifies the LSBs on the *skinning pattern* to be used in the forthcoming season. Taking into consideration the cloacal spurs and other features, Program hides can be recognized by changing the way of skinning (skinning pattern) every year in order to avoid illegal hunting and stockpiling.

The Program requests hides of a minimum size of 230 cm taken from the neck to the anal scale. This measurement corresponds to a live specimen of approximately 200 cm snout-vent length (SVL) (Micucci *et al*. 2003). Since female maturity occurs on average at 165 cm SVL (Waller *et al*. 2007), this precautionary provision is intended to allow the anacondas a reproductive opportunity before being hunted.

The harvest takes place from June to August when Yellow anacondas do not exhibit any reproductive behaviour. The cool weather and the wide range of temperatures during Formosa's winter foster thermoregulatory behaviour in the anacondas that allows hunters to find and capture the snakes by hand.

Most of the hunting requirements are implemented when the hunters bring their skins to the LSBs for sale, since the skins that do not comply with Program standards are worthless for the LSBs. Besides, on a periodic basis, the LSBs facilities are visited by a representative of the exporters (purchase agent) together with a provincial wildlife officer with the purpose of buying the skins. At that stage, skins that comply with the Program standards are individually tagged in situ for control and future tracking.

Figure 3. YAMP operative scheme (modified from Micucci and Waller 2007)

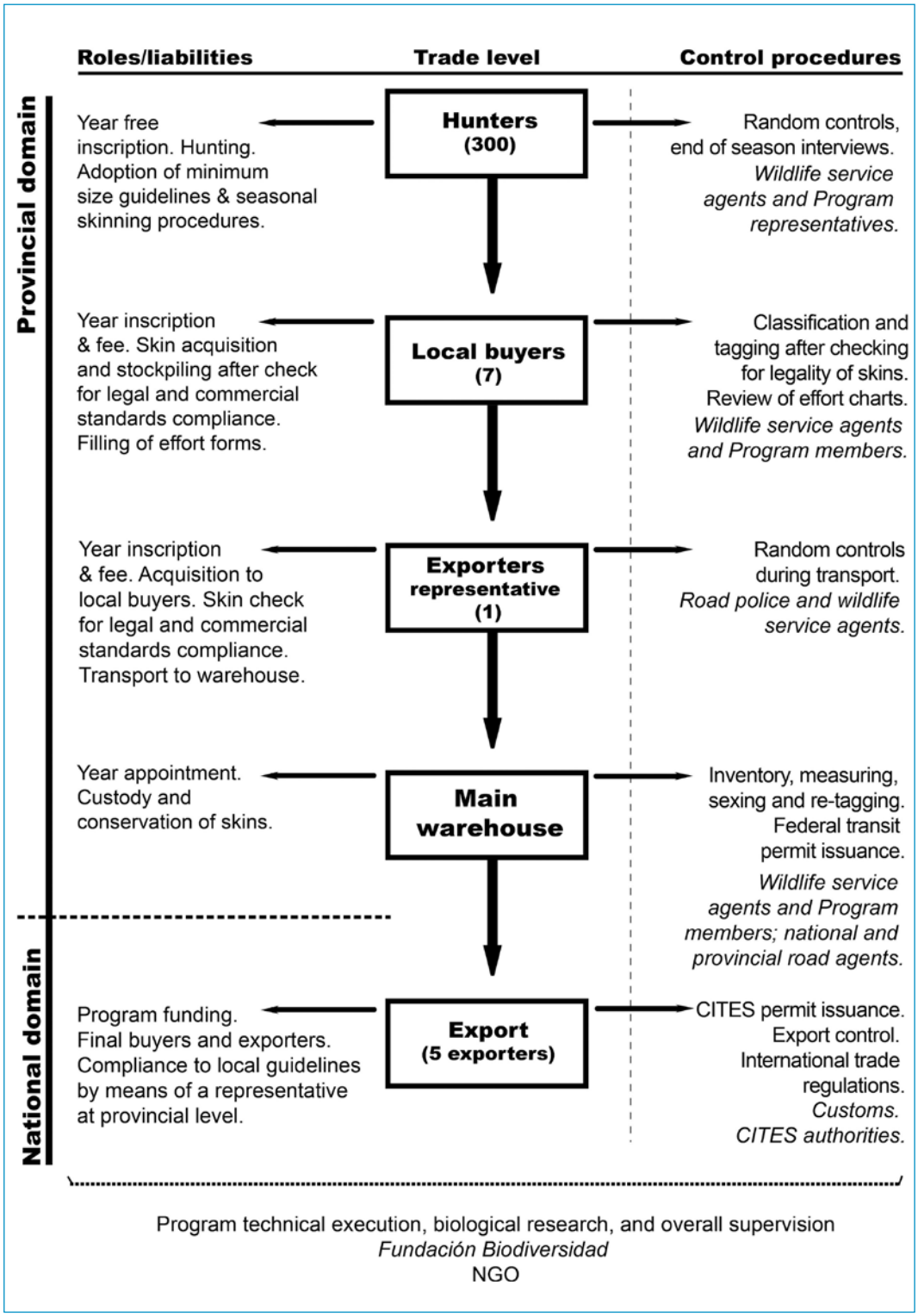
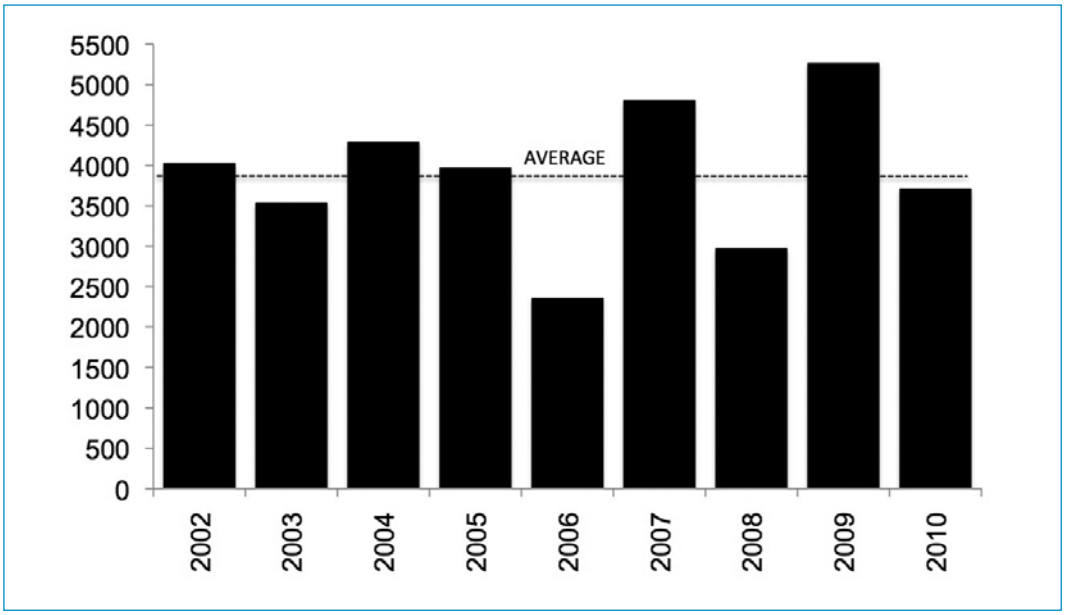


Figure 4. Yellow anaconda skins produced at La Estrella Marsh between 2002 and 2009



The tagged hides obtained are periodically transported to a single warehouse located in the city of Formosa. At the end of the season, and before leaving the province, hides are sexed (by spurs and bone remnants), measured, and field tags replaced by export tags that comply with the provisions established by the CITES Management Authority of Argentina. The export tag is required before transporting skins out of the province and is a prerequisite for the issuing of a CITES export permit.

Monitoring sustainability

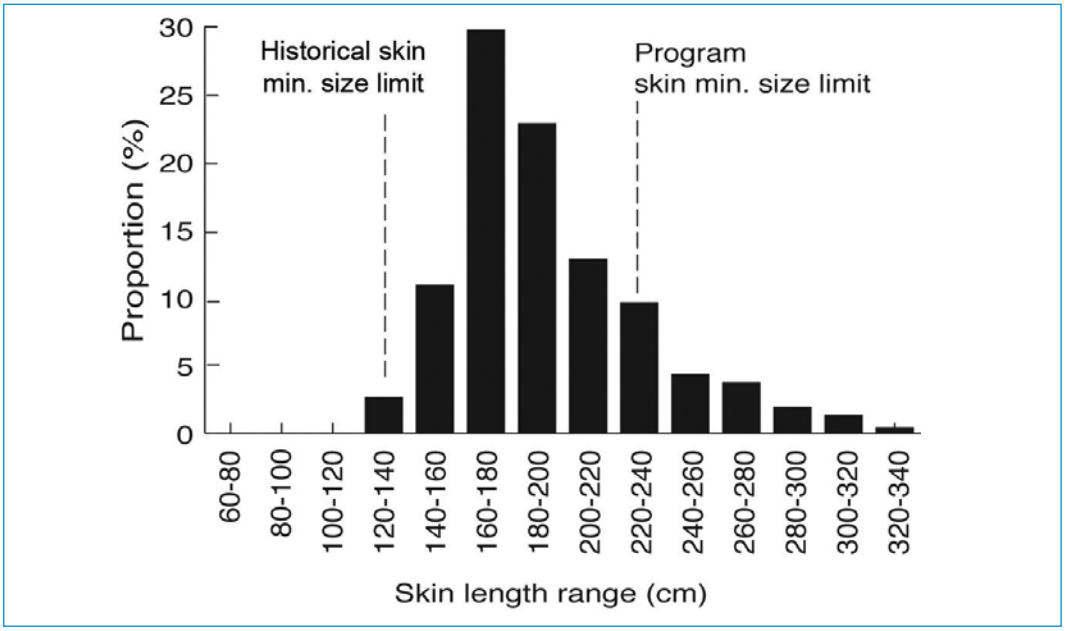
The Program makes no effort to control directly the number of animals harvested; in fact, Anaconda populations are managed by controlling hunting effort and on the basis of "sustained yield" harvest theory (Caughley and Sinclair 1994). Specifically, we test surplus-yield production models (i.e., Schaefer 1954; Fox 1970), which have been used mainly in fisheries, but also for terrestrial fauna.

Before establishing the YAMP, the legal exploitation of anacondas was banned, but an illegal harvest took place with total disregard of size considerations. According to traders and local dealers interviewed, Formosa's production involved ca. 20,000 skins per year above 15 cm wide (Micucci *et al*. 2002, 2006). This hide width would correspond to a skin length of 150 cm from a live anaconda about 135 cm SVL (Micucci *et al*. 2002). In demographic terms this means that practically all (90%) of anacondas, males and females, older than 1 to 1.5 years of age, were vulnerable to being hunted under a market-driven regime (Fig. 5; Waller *et al*. 2007).

With the current minimum size policy (200 cm SVL) we have been able to substantially reduce overall harvest levels, for juveniles and adults, compared to the historical trade. Current production, without mediation of quotas, represents a management-derived reduction of harvest to a quarter of Formosa historical values (5,000 vs. 20,000 skins), and a 40% reduction on female vulnerability to hunting (Micucci and Waller 2007).

The impact of the harvest on the population status of anacondas is monitored through traditional indicators (i.e. CPUE vs. effort, size and sex structure of the harvest). Total numbers of snakes caught are insufficient to predict population trends if not considered in conjunction with hunting effort data. In this sense, appraisals of harvest intensity are made from yield curves, analyzing the behaviour of capture volumes in relation to applied effort. These curves are obtained from effort and CPUE data (Micucci and Waller 2007). Since the rationale of sustained yield models implies that a harvest represents a specific proportion of the total population, a reduction of the crop would be expected, as in the case of a population reduced by natural conditions (i.e. drought, fires), but this does not mean over-harvesting in that year (Caughley and Sinclair 1994).

Figure 5. Natural distribution of 500 illegal skins seized in Paraguay (Micucci and Waller 2007). Current minimum size limits established by the YAMP are substantially more conservative than historical minimum sizes in trade



Actual harvest monitoring also takes into consideration the significant correlation between the number of hunters and gross capture. More hunters usually implies more effort, for increased numbers of snakes caught, and vice versa (Micucci *et al*. 2007). Year 2006, for example, was a 'bad' year for captures in the YAMP, because a low number of hunters participated, and the overall effort was diminished relative to previous seasons. This drop corresponded with an increase of traditional labour demand and with the indiscriminate distribution of unemployment benefits to hunters and their families by the government (since 2003). In other words, if the YAMP does not mediate in bettering skin prices (as it is continually doing) the system tends to stabilize in such a way that exporters' actual profits are in total harmony with actual structure. If exporters are reluctant to increase skin prices, as an incentive to harvest, then the harvest will be reduced. It is thus an effort-mediated system, with a commercial collapse always anticipating to a biological collapse.

In the event of overexploitation, we would expect to find a substantial change in the size structure of anaconda's populations and/or a reduction in the average size of the skins harvested. Taking into consideration that no significant consistent change in population structure nor reduction in the average size of the population (based on average skin sizes) has occurred, we can accept that current harvest guidelines are appropriate for the sustainable management of yellow anacondas in Argentina (Micucci and Waller 2007).

Distribution of benefits

The Yellow Anaconda Program is economically structured by Government (federal and provincial), exporters (5), hunters (about 300), local buyers (7), and the NGO in charge of the technical/scientific Program.

Table 1 shows the partitioning of benefits between different Program participants, based on the average export value of a Yellow Anaconda skin (USD 50). The governmental sector receives the smaller part (4.2%). In fact, the government delegates the Program execution to an NGO in order to encourage fast and direct allocation of funds to research and monitoring. In this sense, Program technical activities receive 14.8% of the export value. Hunters and local buyers earn 13.3% all together, but three-quarters of this amount goes to the hunters. Externality compensation and community devolution by the private sector accounts for approximately one third of the international value of a skin. Although earnings at the local community level represented in 2002 a three-fold increase when compared with prices then paid by the illegal traders, we strongly encourage better prices in pursuit of an optimum allocation of benefits (Micucci and Waller 2007).

Figure 6. A hunter with a newly caught Anaconda

Table 1. Anaconda Program benefits partitioning on a 50 USD skin price basis

Program actor	USD	%
Provincial and export taxes	2.1	4.2
Program running costs (NGO)	7.4	14.8
Hunters and local buyers	6.7	13.3
Stockpiling logistic expenses	3.1	6.2
Total expenses per skin	19.2	38.5
Exporters income	30.8	61.5

Final considerations

The commercial use of wildlife in many countries took place in a largely unmanaged and ad hoc way for almost a century. During the last 20 years attempts have been made to change these practices, around the world, through the establishment of sustainable utilization programs for different animal species. Different levels of success have been achieved in the path to this goal, but they provide precious initiatives into the ways to use the economic value of components of natural ecosystems, often threatened by traditional land use patterns, to achieve conservation goals.

Lack of scientific data on species and ecosystems is frequently argued as a constraint when trying to introduce scientifically sound management policies. Yet history shows that in most cases, management decisions rarely emerge from pure research projects. They usually result from a strong commitment between agencies, NGOs, users, and other stakeholders. The 'adaptive management' approach (Holling 1978) has proved to be an efficient tool for overcoming the problem of dealing with the uncertainty in natural ecosystems, and it is a reasonable solution to the drawback of initial lack of biological information on most managed species (Webb 2002).

One significant constraint to apply innovative management procedures for a traditionally used species uses to be the existence of long-established trade networks. Existing utilization patterns are hard, or impossible to modify from inside and the manager becomes a mere spectator of what is occurring. Since there is no perception of risk, traders and all other participants are rarely enthusiastic about accepting any fundamental change in procedures that could diminish their

profit margins. A short but effective local trade ban, such as that which was applied in the Yellow Anaconda case during the late 1990s, or the pressure of foreign agency recommendations and provisions (i.e. CITES, European Union stricter domestic measures, or the USA Endangered Species Act) has sometimes been effective in modifying the inertia and encouraging acceptance of innovative new management prescriptions to what has long been essentially a traditional harvest.

Figure 7. Anaconda skins nailed to soil for drying in a house backyard at *La Estrella* area

In recent years, the harvesting of charismatic wild animals has been the focus of increasing attention and criticism, and YAMP was no exception (Rivas 2007, 2010; Waller and Micucci 2008). The controversy on wildlife use in part reflects the broad spectrum of opinion regarding 'appropriate' uses of particular species, or indeed, of any wildlife species. A misunderstanding of the fundamental differences between 'conservation' and 'animal welfare' principles can confuse public debate about such issues and prevent their resolution by objective, logical means. A television-mediated culture that actually promotes emotional feelings against the 'direct killing' of star species, is interpreted by some as a panacea for conservation, yet it often ignores the real forces that drive current land use patterns throughout the world. Population growth, poverty, increased demand on traditional commodities and globalization are, in fact, the main causes of the massive wildlife losses that generate national and international concern.

The YAMP is a valid pro-active attempt to encourage alternative landscape use models, that has the potential to counter the loss of species and ecosystems we are experiencing worldwide, due to traditional land uses, like livestock rearing and industrial agriculture and forestry. Besides the economic impact to local people and traders, the YAMP has stimulated – and continues stimulating – intense research (Mendez *et al*. 2007; Waller *et al*. 2007). The tools applied to control and monitor the anaconda harvest have been adequate and cost-effective, providing definitive evidence that the harvest is sustainable and not detrimental to the survival of the wild population. The approach may have broader application where similar harvests are being undertaken with other species in other countries.

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Use of Vicuñas (*Vicugna vicugna*) and Guanacos (*Lama guanicoe*) in Andean countries: linking community-based conservation initiatives with international markets

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Introduction

Vicuñas (Vicugna vicugna) and guanacos (Lama guanicoe) are wild South American Camelids that share a very peculiar feature: they bear an extremely fine fibre that can be harvested from the live animals, without harming them, providing a novel opportunity for sustainable wildlife use.

Wild management of these species involves local producers rounding up free-living herds, under the supervision of fauna inspectors in a procedure similar to the ancient Incan practice known as the chaku. In modern sustainable management systems, conservation biologists study the impacts of capture and shearing at individual and population levels (Carmanchahi *et al*. 2011). An adaptive management approach ensures that management techniques are adjusted on the basis of experience, science, traditional and local knowledge. Animal welfare protocols minimize capture-related stress and mortality (e.g. Marull and Carmanchahi 2008).

Vicuña conservation is considered a success story by CITES. The vicuña recovered from a global population of only 10,000 to about 421,500 individuals during the period 1965-2010 (Lichtenstein 2010a). CITES and the Vicuña Convention played a key role in halting the population decline. However, the case of the vicuña raises questions about what parameters we should use to define success in wildlife conservation. Conservation is not only about wildlife numbers, but also about people, their needs, views and values from the local to the international level. It includes issues of access and property rights over natural resources, local institutions for resource management, power relationships (at a local, national and international scale), economic drivers, and even the impact of distant market forces (Escobar 1998; Berkes 2007; Larson and Ribot 2007). Taking into account this broader perspective, the vicuña and guanaco sustainable use programmes can be analyzed as a more complex phenomenon. In this paper, I focus on the conservation opportunities and local threats to guanaco and vicuña wild management programmes related to production and commercialization of their fibre.

Background on Vicuña and Guanaco

Vicuñas and guanacos are among the few native large herbivores that inhabit South America and the most abundant free-ranging ungulates to inhabit the continent's deserts and high plateau scrublands and grasslands. The distribution of vicuñas is limited to elevations above 3,700m in the *puna* and *altiplano*, high Andean ecoregions in Argentina, Peru, Bolivia, Chile, and Ecuador (Wheeler and Laker 2009). Peru hosts approximately 50% of the global vicuña population (Table 1). Guanacos occupy a range of arid lands from sea level to 4000 m above sea level in Argentina, Chile, Peru, Bolivia and Paraguay. Approximately 95% of wild guanacos live in Argentina, primarily in the Patagonia region (Baldi *et al*. 2010).

Both species were extremely important in the local economy of South American indigenous populations (De Nigris 2004, Yacobaccio 2009). Local rules and regulations in the case of vicuñas, and low human population densities in the case of guanacos prevented over-exploitation. The situation changed dramatically after the Spanish conquest (Yacobaccio 2009). Trade in skins led to over-exploitation, and vicuñas were hunted to the brink of extinction. By 1960, it was estimated that the vicuña population had dropped from its pre-colonial population of around 2 million to an estimated 10,000 individuals (Wheeler and Laker 2009). In the case of guanacos, the population diminished from an estimated of 30–50 million to 600,000 guanacos (Baldi *et al*. 2010).

Table 1. Vicuña populations, fibre production, management systems and beneficiaries

Country	Vicuña population	National fibre production 2008 (kg)	Management system	Beneficiaries
Argentina	72,700	271	Captive/wild	National Institute (INTA), 15 ranch owners, one community, one "non-Andean" private company
Chile	17,000	160	Captive/wild	45 Aymara families
Bolivia	112,094	924	Wild	77 indigenous communities representing more than 3,000 families
Peru	219,665	6034	Captive/wild	267 indigenous communities and 77 persons or businesses on whose land vicuña live

Source: Lichtenstein 2010b

At the end of the 19th century a military campaign in Patagonia exterminated many local indigenous groups and expanded the economic frontier (Bartolomé 2003). The defeat of the indigenous groups released vast tracts of land for conversion into *estancias*, massive ranches for the production of sheep for export to Europe. The wild, native guanaco was replaced by exotic livestock (sheep), and fences and wires started dividing the landscape. Competition with sheep, hunting, and habitat degradation due to overgrazing resulted in reduced guanaco densities, local extinction, and restriction to marginal, low-quality habitats (Baldi *et al*. 2004).

International, regional and national conservation efforts were successful in halting further population declines. CITES played a key role in the conservation and implementation of sustainable use programmes for both species. In 1975, vicuñas were listed as an endangered species under Appendix I. As the vicuña population increased, certain populations from Peru, Chile, Bolivia and Argentina were gradually transferred to Appendix II (McNeill *et al*. 2009). Given that vicuña distribution overlaps with rural Andean communities that face high levels of persistent poverty and inequality, there are high expectations at the local level that livelihoods can be substantially improved through vicuña use. In 1979, Argentina, Bolivia, Chile, Peru and Ecuador signed the Convention for the Conservation and Management of the Vicuña. Andean people that had been bearing the burden of vicuña conservation were named as the main beneficiaries of future vicuña use in Article I of the Vicuña Convention, and in the signatory states' subsequent submissions to CITES meetings.

Guanacos were included in CITES Appendix II in 1978. The negative perception of guanacos by sheep ranchers, added to a strong demand in Europe for guanaco fibre and calf pelts resulted in major exports of guanaco skins, and the issue of large numbers of permits to kill guanacos (Baldi *et al*. 2010). In 1993, the CITES Standing Committee recommended that all Parties suspended imports of specimens of guanacos from Argentina until the biological basis for its management programme and its mechanisms for controlling trade were specified. This recommendation fostered the creation of a Guanaco National Management Plan in 2006 in order to ensure the sustainability of management activities.

Vicuña and guanaco management programmes are a variation on what are collectively referred to as community-based natural resource management initiatives (CBNRM), a form of natural resource management that emerged as a strategy linking conservation and community development through local participation and sustainable use. The objective of such programmes is to deliver a financial return to local communities that protect and have protected the species on their land for decades and have potentially foregone other income because of the presence of wild camelids. The rationale is that allowing commercial utilization of fibre obtained from live-shorn animals will encourage local participation in their management and the development of positive local attitudes towards conservation. In turn, this should result in a decrease in poaching, the replacement of domestic livestock with wild camelids – or an increase in tolerance for vicuñas or guanacos on community (or private) lands – and greater support for conservation measures.

Two management systems have been developed: captive breeding and wild management. Captive breeding involves maintaining vicuñas or guanacos in fenced enclosures of various sizes where selective breeding may take place, while providing food, water and veterinary care. While wild management has the potential to create economic incentives for the conservation of species and habitat, the link between captive management and conservation is less obvious and the magnitude of economic returns much smaller (Lichtenstein 2010a).Wild management uses a capture and release system which has evolved from the Inca *chaku* tradition. In the case of vicuñas, large numbers of community members holding colourful flags chase the animals into a funnel from where they are taken to be shorn. Given the larger size and strength of guanacos, they are chased mainly by men on horses into a trap, and then shorn and released (Carmanchahi *et al*. 2011).

The vicuña is one of the most valuable and highly priced sources of animal fibre on the international market. The adult animal produces only eight ounces every two years. According to the textile industry, vicuña fibre is more expensive than other fine fibre because of its rarity and unique qualities. The luxury garments made from vicuña fibre are sold in the most exclusive fashion houses in Europe, USA, Asia and Australia to the world's wealthiest elites. Guanaco fibre is not as fine as that of the vicuña but otherwise quite similar in its thermal properties, softness, colour variations of brown and the presence of guard hair (Mueller *et al*. 2010). The two fibres are difficult to distinguish under the microscope. However, wearing a vicuña garment is a recognized status symbol, whereas guanaco fibre is not widely known and so does not command the same prices.

Vicuña fibre production and commercialization

The exploitation of vicuña fibre offers the potential for poverty alleviation in some of the lowest income communities in the Andean region. Vicuña producers from Bolivia are Andean communities from *Quechua* or *Aymara* origin, and in the case of Chile, they consist of groups of Aymara families (Table 1). In Peru, although the majority of beneficiaries are still local indigenous communities, exclusive usufruct rights were removed by law in 2000 (DL No 653; Sahley *et al*. 2004) and were extended to persons and business – thus allowing textile companies and investors to compete with Andean communities in the production of fibre. At present the textile company that processes vicuña in Italy is also producing vicuña fibre in the Andes (Proceedings of the XXVIII Ordinary Meeting of the Vicuña Convention 2011).

Since 2009, the largest producer of fibre in Argentina has been a private company from outside the Andean region. According to its web page: "*It's an honour for the Schneider Group to have become the first private company in the world to produce what we consider the best possible vicuna fibre in the market*" (The Schneider Group 2011). Vicuña fibre production by international wool trading companies is not aligned with Article I of the Vicuña Convention nor with the aims of poverty alleviation and the creation of local incentives for conservation, included in Andean country presentations to CITES[1]. Thus, a sustainable wildlife use model that originated as CBNRM has turned into "business as usual", instead of "*for the benefit of the Andean population*" (Proceedings of the XXVIII Ordinary Meeting of the Vicuña Convention 2011). Given that most of the vicuña fibre value chain occurs outside Andean countries, by enabling private companies (that have more access to capital, labour, credit and markets) to compete with Andean communities on fibre production, local communities reduce their chances from getting economic benefits. Given that vicuñas are a common pool resource, the exclusion issue is important. Community-based conservation is more likely to work if the users enjoy exclusive rights to the resource and have a stake (Berkes 2007).

Vicuña fibre is mostly exported with limited added value (Proceedings of the XXVIII Ordinary Meeting of the Vicuña Convention 2011). Italy is the final destination for most of the fibre (Lichtenstein 2010a). The same two trader companies operate in Argentina for vicuña and guanaco fibre. One of these companies also buys vicuña fibre from Chile, Bolivia and Peru (Lichtenstein 2010a; Table 2). Most of the fibre from Peru and Bolivia is sold to the International Vicuña Consortium (IVC), a holding company led by the Italian firm Loro Piana.

1. All available on line.

The total vicuña fibre production of Andean countries is approximately 7,400 kg per year (Proceedings XIV Technical Meeting of the Vicuña Convention). Although Andean countries are the only world producers of the most expensive animal fibre, the market gives buyers control of prices rather than producers. The vicuña fibre market is an oligopsony with a few large buyers and a large number of sellers (the converse of an oligopoly, a market dominated by a few large suppliers). This market places the control of the terms of trade and most of the profits with the buyer (Ribot and Pelusso 2003). A common theoretical implication is that the price of the good is pushed down, which seems to be the case with vicuña fibre.

There is no formal market for vicuña fibre and there are no reference prices. In the past ten years, prices paid for raw fibre have ranged from US$250 to US$940 (Lichtenstein 2010b; Table 2) and used to vary greatly among and within countries (Table 2). At present companies are willing to offer ~ US$300-430 per kilo. The lack of a joint strategy for fibre commercialization among countries benefits trading companies as well as the lack of information about prices paid to other producers, communities or countries. Local people are unaware of the demands imposed by the international market and the prices paid for finished goods abroad. As a result, many communities find themselves in a poor negotiating position.

Table 2. Evolution of vicuña fibre prices 2006-2009

	INTA Argentina (US$/kg)	Bolivia (US$/kg)	Chile (US$/kg)	Peru (US$/kg)
2006	896,50	380	670	365
2007	922,30	560	770	250-507
2008	no bidders	no bidders	650	350-415
2009	no bidders	430	430	350-415
Buyers	PC	PC/IVC	PC	IVC + PC + various companies

Source: Lichtenstein 2010b

The revenues obtained from the transformation of raw material in Italy are considerably high. Assuming the market prices paid to communities in Peru or Bolivia in 2007 (i.e. USD $380/kg), the cost in raw material for a vicuña scarf made from 250g of vicuña fibre that is sold for USD $1,975 is, at most, USD $95. According to these figures, producers get less than 4.8% of the price paid for the final product. This revenue is low considering that according to country presentations to CITES and the companies´ advertisements of the fibre, an important aim of the projects is to lift people out of poverty.

Guanaco fibre, production and commercialization

In the case of guanaco management, the units of production are sheep ranches. The aim of the guanaco management programmes is not poverty alleviation but to create incentives for species and habitat conservation via the generation of sources of income complementary to sheep ranching. A live-shearing programme started during the late 1990s when several large sheep ranches in Argentina began managing guanacos by conducting live capture and shearing and thereby producing fibre for export. Since 2002 the capture, shearing and release of guanacos to sell their fibre has increased in Patagonia, with thousands of guanacos shorn every year (Baldi *et al*. 2010). The high market value (USD $ 150) of guanaco fibre influenced landowners to invest in management infrastructure. Low sheep wool prices also contributed to rancher´s interest in exploring economic alternatives.

By 2006, there were 12 guanaco captive breeding operations in Rio Negro Province, eight in Chubut, one in Neuquén and two in Santa Cruz. Wild management was carried out by seven ranches in Rio Negro (Baldi *et al*. 2010) and the Cooperativa Payún Matrú in Mendoza. The latter was formed in 2005, mainly by local goat herders with a subsistence economy. It is a unique example of sustainable use, where the beneficiaries of guanaco fibre harvesting are a low-income community (Lichtenstein & Carmanchahi 2010).

As in the case of vicuña, there are only two trader companies that buy raw fibre and control market prices. By 2010, most of the projects had stopped operating due to difficulty in marketing guanaco fibre, a decrease in market price to USD $40-60 per kilo and a relative increase in sheep wool price. The few projects that remained operating are seeking ways of putting added value on the fibre at local level and finding new markets.

Given the currently low economic value of guanaco fibre, there is increased pressure by landowners on provincial governments to issue hunting permits to kill guanacos on their properties. Meanwhile, poaching is increasing. Illegal hunting is fuelled by a number of factors: a perceived need to reduce guanaco numbers and allow more forage for sheep; to feed sheep dogs; to generate income from informal meat sales in the poorest areas of Patagonian towns and cities; or to sell fibre or *chulengo* pelts (Baldi *et al*. 2010). The availability of illegal fibre further decreases the market price of legal fibre. Furthermore, guanacos are often portrayed as pests by the local media. These factors combined – competition with domestic livestock, the lack of an open established market for the fibre, uncertainty about resource rights, a deficient legal framework, a limited number of beneficiaries, and the lack of common property institutions and governmental support – have undermined the performance of sustainable use efforts

Conclusions and policy recommendations

The economic value derived from the sustainable use of these species could be an opportunity for wildlife conservation, but it could also pose an important threat. In the case of the vicuña, the high market value of its fibre has attracted a number of groups interested in capturing the benefits to the disadvantage of local people. This dilution of local benefits may threaten vicuña conservation; it challenges the rights of Andean communities to the resource, and could undermine the spirit of the Vicuña Convention. In the case of guanacos, the lack of an open established market for the fibre leads to a further replacement of guanacos for sheep and an increase in poaching. This threatens not only the conservation of the species but also causes further desertification in an already degraded area (Baldi *et al*. 2010).

There are several challenges that need to be addressed as a matter of urgency to improve the guanaco and vicuña sustainable use programmes:

- Develop initiatives that maximize benefits to local communities and minimize biological impacts to the species and habitat;
- Develop a joint commercial strategy among Andean countries and improve information exchange (e.g. prices, potential buyers) between countries and among producers;
- Develop policies that tackle market failures, improve market access and ensure that markets work for local communities
- Trade links need to be developed to help redirect a fairer and more equitable proportion of benefits to local people in order to increase incentives for conservation and address local development
- Strengthen producer associations and social enterprises – particularly building capacity for commercial engagement;
- Andean governments should promote the generation of added value at national and regional levels, including the development of a market for handicrafts using legal fibre;
- Develop a market for guanaco fibre and management systems with a larger number of beneficiaries;
- Strengthen local land and resource rights – including integrating Article I of the Vicuña Convention into national legislation in order to secure usufruct rights for vicuñas;
- There is a need to further control poaching and the fibre trade along the whole commodity chain from local production to international textile manufacturing to ensure compliance with existing CITES legislation;
- Given the similarity of guanaco and vicuña fibres, easy methods to help authorities that control exports and imports to tell them apart should be developed.

In order for vicuña and guanaco management to become a success conservation story and a model for sustainable wildlife use there is still a long way to go.

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Creating incentives for community-based management of migratory species: The case study of the saiga antelope and the wider policy perspective

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Abstract

Out of the thousands of migratory animals roaming the planet only a small fraction are managed by communities. The need to create incentives for local people to sustainably manage migratory species is immense; however, the challenges for community-based natural resource management (CBNRM) are formidable. This is because migratory species tend to have vast ranges, often crossing national borders during their annual journeys, making it difficult for communities to manage a resource together and sustainably. The case study of the CITES and CMS Appendix II-listed Saiga Antelope (*Saiga* spp.), a migratory ungulate of the steppes and deserts of Eurasia, is used to illustrate the complexity of the matter. The status of the species is closely intertwined with the socio-economic conditions of the region since poaching is the primary threat to the saiga. Now that individual populations are starting to recover from a 95% decline in the 1990s, it is particularly important to continue to monitor regional socio-economic trends and to carefully adapt to more community-based conservation strategies, where appropriate. Migratory patterns and population density need to be taken into account since these can influence hunter behaviour and thereby have implications for the suitability of community-based approaches. The factors which determine whether or not a migratory species can be managed through CBNRM need to urgently be woven into international policy through instruments such as the Convention on Migratory Species (CMS), not least in the context of climate change.

Introduction

On land, in the sea, in rivers, lakes and in the air – migratory species exist across all ecosystems and are a highly diverse group, ranging in size alone from something as small as a copepod or a dragonfly to a blue whale. Their ability to migrate has evolved independently a myriad of times (Alerstam *et al*. 2003) and the drivers of migration are just as variable. Animals migrate for a multitude of reasons, *inter alia* to take advantage of rich seasonal resources, favourable weather or to avoid predators or disease. To define coherent recommendations for the conservation of such a diverse group of animals on the move is not straightforward; however, in the context of community-based management there are a number of unique additional challenges with regards to migratory species, which need to be taken into account when drafting policy relevant to CBNRM.

While this might appear daunting in the light of the existing challenges surrounding CBNRM as a concept, there are success stories for the community-based management of migratory species and given the vast potential to effectively conserve these animals on the move through communities and locally, attempts must be made to apply CBNRM more widely to migratory species conservation (Hurst 2004; Frisina and Tareen 2009). For this to take place successfully, however, the lessons learnt from around the globe need to be taken into account throughout the planning and implementation phase (e.g. Shackleton et al. 2010). In the context of migratory species, practical CBNRM guidelines for conservation stakeholders would be beneficial.

Migratory species in the CMS context

While the biological definition of a migratory species is complex (e.g. Milner-Gulland *et al*. 2011), the Convention on Migratory Species[2] defines migratory species politically by targeting

1. The findings, interpretations and conclusions expressed in this paper are those of the authors, and do not necessarily represent the views of the Convention on Migratory Species, its Secretariat, or the countries they represent.
2. Convention on the Conservation of Migratory Species of Wild Animals, Bonn, 23 June 1979, in force 1 November 1983, 1651 *United National Treaty Series* No. 28395.

transboundary migrants. The conservation of these species which "cyclically and predictably cross one or more national jurisdictional boundaries", as defined in Article I, paragraph (a) of the Convention, tends to be critically dependent on the individual range states collaborating closely. This is why in the 1970s the international community called for a specific treaty for migratory species conservation to facilitate this international cooperation.

This political commitment illustrates the level of concern regarding both the conservation status of migratory species and the difficulty of protecting these. In 2011 almost 150 states had signed one or more instruments of the Convention, illustrating the continued and growing will amongst the international community to tackle the challenges ahead. One of the acute challenges within the CMS framework today is the creation of social and economic incentives for communities to sustainably manage migratory species. The Vienna symposium on "The relevance of community-based natural resource management (CBNRM) to the conservation and sustainable use of CITES-listed species in exporting countries" (17-20 May 2011) makes an important contribution in this regard.

Communities and migratory species

Since the majority of threats to migratory species are anthropogenic in nature and communities are often in a pivotal position to affect the conservation status of migratory populations, it is vital to assess how conditions for successful CBNRM can best be created. From a CMS perspective, it is important to analyse what role the treaty can play in facilitating CBNRM, recognizing that it is primarily an international legal instrument and that the gap between the international policy arena and local communities is a wide one. This gap also requires further attention. However, prior to discussing what role Multilateral Environmental Agreements (MEAs) can play, one needs to consider the suitability of CBNRM as a tool for migratory species conservation *per se*. The application of community-based natural resource management (CBNRM) has been challenging for biodiversity as a whole, primarily because the required conditions such as full ownership and decision-making rights at the community level are difficult to establish (see Roe's article in this volume for a full overview).

For migratory species the biggest challenge in the context of CBNRM is their large range and consistent movement, which for species fitting the CMS definition, covers several countries. Over such large regions it is extremely difficult for communities to collaborate sufficiently closely to manage a shared resource together. There are often not only national boundaries and the associated regulatory obstacles in the way, but also logistical, language and cultural barriers. Some of the questions to be considered include:

- At what scale can the resource be most effectively managed and how is this coordinated?
- How can incentives be created for communities to conserve the resource in question?
- How can benefits be shared fairly among the communities?
- How should the monitoring be conducted and by whom and how should it be funded?
- How should the management be evaluated? How does one identify individual or community "cheaters" and how should one react to "cheating"?
- Which communities should be involved and in what capacity?
- Can the resource be sustainably harvested and if so, is this supported by the communities?
- If harvesting is the preferred option, when would be a good time to harvest and under what regime (e.g. focus on age, sex, size)?
- If trophy hunting is favoured, what means are available for implementing community-based management of trophy hunting schemes in the context of a migratory species? What lessons can be taken from other harvesting systems (e.g. trophy hunting) already in place on how best to allocate licenses to communities in migratory systems? How can this be made to work in a transboundary context?

Overcoming these, avoiding unsustainable harvesting and ensuring fair and equitable sharing between communities and countries is a formidable challenge.

Non-consumptive use

For the non-consumptive use of migratory species there are less challenges involved since there is generally no risk of overexploitation and even if collaboration between different "owners" of the resource is complex, then the impacts are going to be less serious for the migratory population affected since there is no taking. There are good examples of tourism and wildlife watching creating significant levels of income and employment, and thereby potentially creating meaningful incentives for conservation. These include promising figures of 10 million participants *per annum* engaging in whale watching activities in the US, creating USD 1,5 billion in annual revenue (Hoyt 2001) or the impressive figure of USD 120 billion direct expenditure from wildlife-related recreation in the US in 2006 (USFWS 2006). With regards to migratory species, the example of Bracken Cave in Texas with more than USD 3 million revenue *per annum* is noteworthy (Ryser and Popovici 1999). These figures illustrate the potential revenue that can be created from non-consumptive use at the very top end of the scale. However, the above-mentioned examples have little in common with CBNRM beyond a common focus on deriving their income from a natural resource and ultimately having an interest in the conservation of the species observed.

There are a growing number of successful CBNRM projects targeting the non-consumptive use of migratory species, such as the Wings Over Wetlands project under the UNEP/CMS African Eurasian Waterbird Agreement in the Wakkerstroom Wetland in South Africa targeting waterbirds like the blue crane (*Anthropoides paradiseus*) (Wings Over Wetlands 2011), turtles in Brazil (Vieitas *et al*. 1999) or whale sharks in the Seychelles (Rowat and Engelhardt 2007).

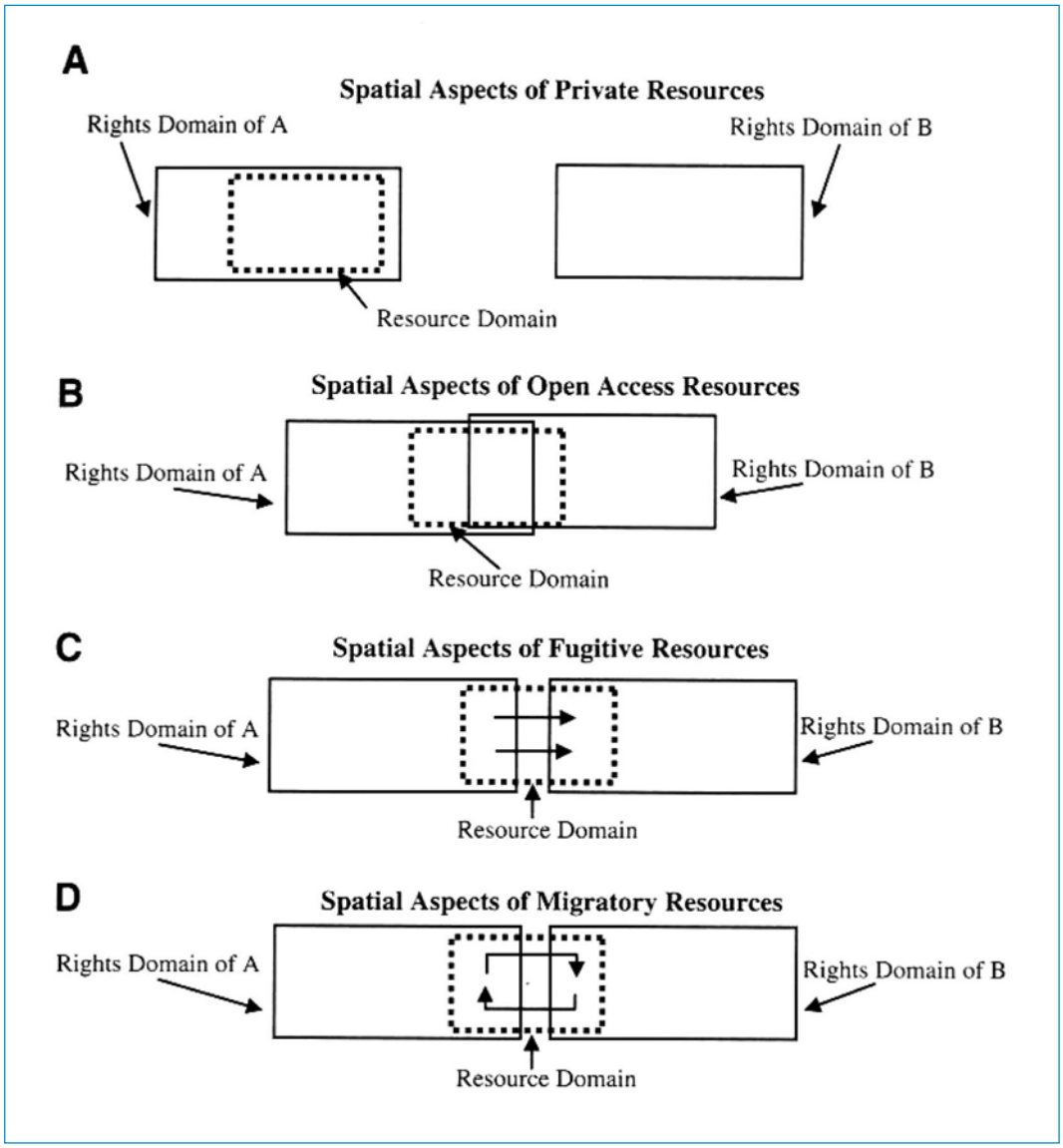
The development of such viable projects is, however, a challenge since these animals migrate and are only present at any one place in certain seasons, which restricts the period during which they can provide a source of income and/or employment. In addition, there are more fundamental challenges, which are commonly encountered by community-based tourism projects, such as the project not being community-managed and the profits not being re-invested in conservation (e.g. CMS 2006; Goodwin and Santilli 2009; Wood 1998). Furthermore, from an economic perspective a large proportion of such projects tend to be critically dependent on external funding and are without these funds often not viable due to low occupancy rates and poor governance (Mitchell and Muckosy 2008).

Consumptive use

When a CBNRM project involves the consumptive use of a migratory species the situation becomes even more complex. Firstly, this is because the ranges of long-distance migrants tend to be so large that access is difficult to restrict. Secondly, these species pass many communities and regulatory zones with many potential users along their annual journeys. Under such conditions, where there are many users with free access to a finite resource and where exclusion is difficult, a "tragedy of the commons" can result and populations are more likely to be harvested unsustainably (Hardin 1968; Sutherland and Gill 2001). This is because the individual who harvests more retains the full private benefit, whilst the costs are born by all. While the tragedy of the commons is too specific and simplistic, such "open-access behaviour" is far from an ideal situation for a CBNRM project. The difficulty of avoiding the overexploitation of fish stocks in international waters illustrates such an "open-access" situation.

Coordination amongst communities and decisions regarding off-take quotas are likely to become increasingly difficult the larger the migratory range and the more countries a species passes on its annual journeys. Giordano (2003) illustrates the spatial dimensions of managing a migratory species which passes different rights domains (Fig. 1, D). If one imagines that in a real-world scenario there would be many more rights domains as outlined by Giordano (2003) one can easily imagine that even the most basic principles of CBNRM such as early participation of all stakeholders are complex.

Figure 1. Illustration of the spatial challenges surrounding the management and ownership of resources which pass different rights domains (D). In a natural environment one could imagine many more rights domains along the annual migratory routes of a species.



Taken from Giordano (2003).

Despite all these concerns and limitations there are positive examples of effective management of a common property resource, albeit few. Those that exist appear to be of a more local nature whereby not all the communities within a range collaborate, but one community by itself "defeats the potential tragedy of the commons" and carefully monitors the migratory population and harvests accordingly (e.g. Ostrom 1990). One such success story is the harvesting of CITES and CMS Appendix I listed Olive Ridley turtle (*Lepidochelys olivacea*) eggs by the Ostional community along CBNRM principles in Costa Rica (Campbell 2002). The arribada mass nesting behaviour, which is unique to Olive Ridleys, lends itself to sustainable egg harvesting since those eggs laid by the turtles nesting at the beginning of the arribada tend to be destroyed by those females laying their eggs subsequently. There is good evidence to suggest that the current early egg harvesting by local people is sustainable (Campbell 2002; Campbell 2007). While the government has legalised egg collection for a limited period during the arribada there is, however, opposition from tourists visiting the area. Non-consumptive use tends to be favoured by tourists visiting the site and the trade-off between income from tourism and egg collection is leading to some conflict (Campbell 2007). Furthermore, the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC) which includes Costa Rica does not permit any taking of eggs and thus conflicts with national Costa Rican law permitting the annual collection (Campbell 2007). CMS also prohibits the taking of Appendix I species, however, in this particular

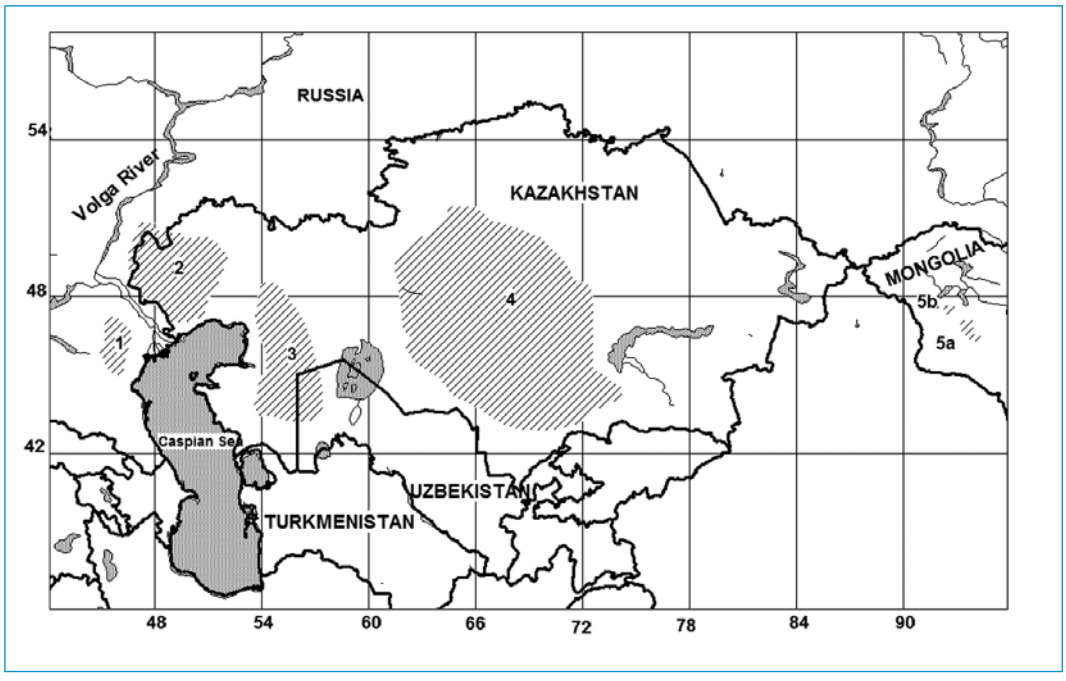
case the taking appears not to be to the disadvantage of the species (Article III, paragraph 5). Given some of these local and international conflicts it remains to be seen how politically viable this otherwise successful CBNRM project of a migratory species will be.

Case study: the saiga antelope

The saiga antelope (*Saiga* spp.) is a highly migratory ungulate of the steppes and deserts. The species is valuable for its meat and horn, which is used in Traditional Chinese Medicine. The species is listed on CMS' and CITES' Appendix II and is covered by a species-specific CMS Memorandum of Understanding (MoU), which is coordinated in close cooperation with CITES[3] and has been signed by all saiga range states since 2009 (Kazakhstan, Mongolia, Russian Federation, Turkmenistan, Uzbekistan; Fig. 2). The saiga underwent a dramatic 95% decline in population numbers within one decade following the collapse of the Soviet Union in 1991 (Milner-Gulland *et al*. 2001; Kühl *et al*. 2009).

Poaching continues to be the primary threat for the species, which is why conservation strategies such as CBNRM which could create incentives for saiga conservation in rural poaching communities are particularly important to conserve this Critically Endangered species (www.redlist.org, Kühl *et al*. 2009). Efforts by MEAs, national agencies, NGOs, research institutions and civil society are starting to bear fruit and the majority of saiga populations are starting to stabilise and even increase in numbers, albeit at a relatively low level, which is excellent news (CMS 2010). Assuming that these efforts will be further strengthened and that population levels might recover to a level where sustainable use is once again feasible as envisaged under the CMS saiga MoU, there will soon be a need to prepare for more effective CBNRM initiatives, also taking into account consumptive use. National law and regulations will need to be adjusted accordingly. Some of the additional considerations that need to be taken into account are outlined below.

Figure 2. The current ranges of the four *Saiga tatarica tatarica* populations and the Mongolian sub-species *Saiga tatarica mongolica* are illustrated with country borders, and latitude and longitude, range states are provided within brackets. 1) Precaspian/Kalmykia (Russia), 2) Ural (Kazakhstan, Russia), 3) Ustiurt (Kazakhstan, but migrates to Uzbekistan and Turkmenistan), 4) Betpak-dala (Kazakhstan), 5a) Shargyn Gobi population (Mongolia), 5b) Mankhan population (Mongolia).



Reproduced from Milner-Gulland *et al*. 2001 with kind permission).

2. Convention on international trade in endangered species of wild fauna and flora, Washington D.C. (U.S.), 3 March 1973, *United Nations Treaty Series* No. 14537.

Socio-economic research is used on a regular basis to assess the situation in rural communities within the saiga's range, specifically analysing the attitudes of local people, not least to guide the development of community-based projects. There have been a number of small projects focussing on alternative livelihood creation to reduce poaching pressure and trialling participatory monitoring by engaging local people in saiga observations outside of protected areas, where there saiga dynamics are less well understood (CMS 2010). The latter also serves as an awareness raising measure.

A presentation of results from recent socio-economic research to illustrate the lessons learnt from the development of community-based projects under the saiga antelope MoU goes beyond the scope of this paper and can be found elsewhere (Whitebread 2008; O`Neill 2008; Leon 2009; Kühl *et al.* 2009; Howe *et al*. in press). It is, however, evident that in the early planning phase of an CBNRM project for a migratory species it will be beneficial to conduct detailed social surveys to assess firstly whether community-based conservation might be a useful strategy. Only if the answer is positive, should one then assess whether community-based harvesting might work from an economic as well as an ecological perspective (e.g. Brown 2010). Social surveys indicate that migratory patterns and population density are key determinants of hunter behaviour which need to be taken into account when assessing the suitability and stability of community-based approaches (Kühl *et al*. 2009). The longer the migration of the saiga the more commercial and less subsistence-orientated saiga poaching appears to become, which thereby calls for stronger law enforcement and may make CBNRM approaches more difficult (Kühl *et al*. 2009). To what extent such findings apply to other migratory species is unclear. What is evident, however, is that any CBNRM initiative targeting the consumptive use of a migratory species needs to, in addition to the standard CBNRM recommendations (see Roe´s article in this volume), carefully address the socio-economic drivers of any current exploitation, taking into account geography and migration dynamics, as well as institutional structures and attitudes of local people.

CBNRM within the CMS context

There is significant potential for CBNRM to create economic and social incentives for communities to sustainably manage migratory species, as the discussion and examples above illustrate. In the preamble of the CMS the contracting parties call for the "wise use" of resources in order to conserve migratory species for future generations, stating that each generation of man has an obligation that this legacy is conserved. While in the convention text there is no explicit mention of community-based management, which is not surprising given the treaty was drafted in the 1970s, there are a number of CMS daughter agreements and action plans which embrace the concept, such as the African Eurasian Waterbird Agreement or the Memorandum of Understanding (MoU) concerning Conservation, Restoration And Sustainable Use of the Saiga Antelope (*Saiga* spp.). In line with the challenges surrounding consumptive CBNRM, there are probably many more (non-consumptive) wildlife watching and tourism projects used to implement CMS than consumptive ones, such as the Olive Ridley turtle example. The concept of sustainable use is not firmly ingrained within the Convention as illustrated by Resolution 8.1 on Sustainable Use and the fact that the Addis Ababa principles have not been adopted (CMS 2005). There is, however, a working group on sustainable use within the CMS Scientific Council, commercially harvested migratory species are increasingly being listed under the Convention and several agreements, such as the MoU on saiga antelopes, state sustainable use as the long-term goal of the agreement. The argali (*Ovis ammon*) has been proposed for listing under the Convention, which if adopted by CoP10 will pave the way for further CBNRM projects building up on current experience (e.g. Frisina and Tareen 2009).

Parties to the Convention and the wider international community have the choice at the tenth meeting of the Conference of the Parties to CMS (November 2011, Bergen, Norway) to integrate CBNRM more firmly within CMS, as recommended by the report of Working Group 4 of the Vienna Symposium. This would certainly be beneficial for the conservation status of many migratory species and the many communities within their ranges. Careful drafting will be required to set appropriate incentives at the international level and to facilitate bottom-up conservation at the local level while avoiding "top-down panaceas" (Ostrom 1990).

Conclusion

There are a number of considerations regarding the suitability of CBNRM as a conservation strategy for migratory species. While there is an urgent need for socio-economic incentives and for stronger engagement of communities in conservation efforts targeting migratory species, this is far from easy to achieve for such species. This is primarily because migratory species tend to have large ranges and often cross a number of national boundaries on their annual journeys, which leads to complex ownership and management conditions. The Convention on Migratory Species is concerned with facilitating this cooperation across national boundaries. Non-consumptive use has been shown to be an effective measure for creating income and employment, which can indirectly facilitate successful management. For consumptive use the situation is more challenging since migratory species often fall victim to overexploitation due to limited cooperation amongst a large and international group of users. The number of successful CBNRM projects targeting migratory species is small, especially for transboundary populations. However, with suitable regulation facilitating cooperation between stakeholders, successful community-based conservation is feasible. More emphasis is required on setting appropriate regulatory and financial incentives at the international and national level to permit communities to sustainably manage migratory species in closer cooperation while avoiding "top-down panaceas" (Ostrom 1990). Much of these regulatory incentives are likely to focus on deregulation and decentralisation, focussing on greater responsibility at community level. Parties need to consider the incorporation of CBNRM within CITES and CMS in order to facilitate socio-economic incentives for local communities to conserve migratory species through these treaties with a vision to encourage more bottom-up conservation. The applied daughter agreements under CMS are likely to provide a fruitful vehicle for such bottom-up conservation as the case study of the saiga antelope agreement illustrates.

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Section 4. Working groups

Principles and characteristics of successful CBNRM programmes: Problems and knowledge gaps for effective CITES implementation

Chair: Rowan Martin
Rapporteurs: Amelie Knapp, David Newton

Preamble

The working group noted that the term Community-Based Natural Resource Management may have outlived its usefulness. Local communities should be treated no differently to other users of natural resources and discussion should focus more on the nature of resource management regimes rather than the actors carrying out the management or the areas where management takes place.

The term "community" may be extended to include not only local people living with resources (primary stakeholders) but also other actors along the chain of production (secondary and tertiary stakeholders) who are dependent on the effectiveness of the primary stakeholders.

These principles are intended to be general and applicable to all regions of the globe. However, it is fully recognised that what are presented as the "ideal" requirements for successful community resource management may not be realisable in all regions either because of prevailing governance systems or cultural factors.

Community resource management is not a universal panacea for all species and ecosystem conservation problems. For many rural areas of the world, however, it is the most effective approach to a successful and self-reliant stewardship of natural resources.

In the documentation for this symposium there are instances where the impression is given that community resource management (CRM) should serve the interests of CITES. The Working Group felt strongly that there is an equal need to consider how the Treaty can be adapted to accommodate the needs of local communities and recognise their conservation initiatives. For large parts of the globe, successful conservation will depend on the trust and cooperation of local peoples for its success.

Context and questions addressed

When attempting to generate broad symposium findings, the following questions seem relevant:

Question 1

Which fundamental principles and characteristics of community-resource management (CRM) programmes are essential to achieving the successful conservation and sustainable use of CITES-listed species through CRM?

The key points (1)-(3) are taken from Resolution CGR.Motion 069 adopted by the World Conservation Congress in Barcelona in 2008. Points (4)-(7) are based on "Indicators for FairWild (medicinal plants)" which focus on sustainable harvest from the wild.

CRM is most likely to be successful where **legal rights** have been conferred on local peoples –

(1) to establish communal institutions for conservation and management of natural resources on which they depend for their livelihoods;

(2) to define the structure and membership of their own institutions; and

(3) such rights include the authority and responsibility to –
   (a) **take all necessary measures to protect their natural resources** (including the right of exclusion);
   (b) **take all decisions on the use of local resources** and collaborate with neighbouring institutions/communities when issues of scale demand a wider consideration;
   (c) **retain the income and non-monetary benefits** from their management; and
   (d) **decide on the distribution of all income and benefits** from their management.

These are the socio-legal requirements which, if not satisfied, are likely to result in the eventual failure of any communal resource management programme. Additional requirements are –

(4) Management is underpinned by the **overarching principles** that –
   (a) **Use should not result in negative environmental impacts**; and
   (b) **All use should be ecologically sustainable**.

(5) **Adaptive Management**, carried out by the communities themselves, is both a necessary and sufficient methodology for **implementing** and **monitoring** community resource use.

(6) Management practices should be responsible and precautionary – i.e. in order to avoid or minimise waste, harvest levels should be aimed at meeting market demands or community needs rather than realising the maximum sustainable yield which may be possible from a resource (paragraph (4)(a) above).

(7) Use by all stakeholders should comply with relevant laws, regulations and agreements. Where outside interests are involved –
   (a) they should respect customary rights and enter into contractual benefit-sharing and access agreements with communities;
   (b) ensure fair working conditions for all participants in community resource management;
   (c) apply responsible business practices.

(8) The raising of awareness of local peoples to the options offered by community resource management to improve their livelihoods is a matter of high priority.

The Working Group points out that in very few instances does Communal Resource Management match up to all the requirements listed above … nevertheless there are few alternatives for conservation of wild species outside State Protected Areas

Question 2

Do these principles and characteristics apply irrespective of geography and taxon?

NO. *See preamble*.
Where very **rare** or **localised species** are to be managed by local communities, oversight by State agencies and support from outside organisations may be appropriate. In situations where communities do not have cohesion and appear incapable of developing management institutions, external organizations might carry out management by employing staff locally. The training provided through in-service management could eventually result in communities forming institutions and assuming responsibility for management.

Migratory species present the greatest of all problems for community management. Unless all of the relevant communities whose land or waters form part of the range of the species can act in coordination, the prospects for conserving such species may be slim.

Question 3

Could these principles and characteristics serve as indicators against which to determine what constitutes a successful community resource management programmes?

Ultimately the status and trends of species populations and their habitats are the criteria by which success must be measured. Data from some case studies presented at this meeting (e.g. the Laikipia Forum and community conservancies in Namibia) indicate clear improvements in the status of wildlife populations on land under community resource management in contrast to wildlife declines in adjacent areas where no such management is in place.

Caution should be exercised in defining criteria for success in community resource management. Such management is ongoing, dynamic and adaptive. Indicators of success are project-dependent. Projects which appear unsuccessful initially may later succeed through ongoing adaptive learning processes. The general growth in the number of community resource management projects appearing throughout the world could be considered an indicator of success.

Where ecological sustainability is clearly demonstrated, improvements in the livelihoods of people are also indicators of poverty alleviation. A greater emphasis on the dissemination of information from such successful projects (and, as a corollary, from projects which have not been successful) would be beneficial for importing countries.

Question 4

What are the greatest hurdles for the implementation of communal resource management and how can they be overcome?

(1) **At the local level**, the problems may arise from –

(a) **Lack of awareness amongst communities of the relative values of different land use options**. In African savannas, for example, the direct returns from land managed under wildlife generally exceed those possible from subsistence agriculture or pastoralism, particularly in arid and semi-arid ecosystems where annual rainfall is less than 500mm. The indirect returns from improved ecosystem conservation may be even greater. Tragically, the failure to devolve adequate rights over natural resources to local people tends to drive land use towards the lower-valued options.

(b) **Entrenched reluctance amongst poor peoples to alter lifestyles**. Risk-aversion strategies are a characteristic of mass poverty (John Kenneth Galbraith – **The Nature of Mass Poverty**) and they result in an accommodation to being poor. Cultural tradition may also cause people to reject new resource management practices (e.g. nomads).

The only escape from the resulting poverty trap lies in education – people must become discontented with their current lot. Financial mechanisms which share the risks for local people attempting a change in lifestyle can assist the transition to higher-valued land uses based on natural resource management.

(c) **The ratio of human population densities to available resources**. In many areas of the world human population numbers have exceeded the threshold where their livelihoods can be derived sustainably from the land on which they live – whether those livelihoods are based on subsistence agriculture, pastoralism or natural resource management. This poverty trap is currently affecting large parts of Africa, Asia and South America. The situation may have arisen from a long history of inequitable land distribution, through commercial developments which have expropriated land from communities or from a failure of land use planners to anticipate the livelihood needs of people.

Such situations would appear to present an intractable problem. The *per capita* dividends obtainable from community natural resource management are too low to provide the incentives needed for local people to form management institutions. The situation may be ameliorated by –

- giving local peoples greater autonomy to address their own problems;
- consolidation of land holdings amongst the people themselves to form larger, more viable units where returns from natural resources become meaningful; and
- changing settlement patterns to leave larger tracts of unoccupied land.

(2) **At the national level**, the greatest obstacles to the development of successful communal resource management institutions lie in –

(a) **The failure to devolve adequate user rights to local people**. Governments and NGOs are reluctant to trust resource management to local communities arguing that they do not have the technical skills to carry it out effectively. There are other reasons – devolution

carries with it a loss of bureaucratic power and reduced opportunities for the political élite to expropriate the significant values of certain wild resources. Whatever the reason, because of their proximity to the resources, local people can frustrate the realisation of all outside attempts at management and conservation if their rights are ignored.

(b) **Negative or perverse incentives for land management**. Many governments do not view wildlife management as a valid form of land use and focus their attention on agricultural and livestock development. An example is the capital expenditure on veterinary cordon fences which favour the domestic livestock industry (more particularly, the export of meat to the northern hemisphere) and which have devastated wildlife populations in many African countries. Most importantly, these fences have foreclosed options for the higher-valued land uses which large national and transfrontier wildlife conservation areas could have provided to benefit rural peoples.

(c) **Alienation of traditional communal land**. When valuable resources are discovered in communal land, there is tendency amongst many African governments (and their colonial precursors) to expropriate the land for private development. The Working Group gave examples of forced removals of communities to make way for large-scale commercial development of land for agriculture and the privatisation of prime wildlife tourism sites in communal land.

(d) **Lack of support for local communities when their natural resources are threatened by externalities to which they are unable to respond effectively**. Examples of this might include illegal hunting or harvesting carried out by powerful groups outside the community, poor upstream watershed management or ill-considered mining development. In such situations, communities might reasonably expect support from government agencies: too often vested interests preclude such support.

(3) **At the international level** –

(a) **Communal management regimes are not common in the western hemisphere so that many Europeans and Americans have difficulty relating to the concept**. In the 19th century game populations were severely reduced in Europe because of a history of open access. This led to hunting laws promulgated by States which to a large extent restored wildlife in those areas where excessive hunting had taken place. Accordingly, many Europeans see State regulation of wildlife hunting as the solution to the problem and have a natural reluctance to see control given to resource users.

However, the situations in Europe and Africa (for example) are not identical. Europeans have no recent history of deriving their livelihoods from wildlife management whereas Africa's wealth has, for hundreds of years, lain in high-value commodities such as ivory. It was this wealth that interested the colonial powers three hundred years ago. Experiments with community resource management institutions are not a feature of European societies whereas in Africa there is a growing body of rural peoples who have realised the competitive advantage of wildlife as a land use, especially where charismatic megafauna are involved. These people have invested in institutions to realise this potential wealth and the conservation of natural resources follows from their decisions.

(b) **The loss of markets for products and activities derived from natural resources** can inflict considerable damage on successful community resource management programmes. Examples of this are the listing of species on Appendix I of the CITES treaty (e.g. the African elephant) and the abrupt closure by importing countries of hitherto available markets for wildlife products or trophies under the CITES provision for "stricter domestic measures". No matter how well-meaning such actions are, they seldom result in an improved conservation outcome and may remove the incentive to conserve.

(c) **Perceptions and value systems in the northern hemisphere** held by some people may act against acceptance of community resource management. There was a feeling by some participants in the Working Group that the intrinsic value of wildlife species was threatened by the consumptive use implicit in community wildlife management. The issue of animal suffering was also raised. Proponents of sustainable use in the Working

Group recognised the need for more information to be disseminated to allay fears that animal welfare was not paramount in community resource use. However, they felt that sustainable consumptive use was not incompatible with appreciation of the intrinsic values of wildlife.

Question 5

What are the current knowledge gaps regarding the role of local communities in the successful application of CBNRM programmes which contribute to more effective implementation and enforcement of both the Convention and related national legislation?

(a) As a general principle, successful communal resource management provides the solution to the classic problem of the Tragedy of the Commons (Hardin 1968). Through collective management and self-interest, local communities can fulfil a role in protecting natural resources which is beyond the capacity of governments or international treaties. This fact is seldom appreciated.

(b) There is a wide variety of communal resource management programmes and each one is unique. Reports containing essential information about such projects tend to be regional rather than global. Information on why projects succeeded or failed is not widely available. However, the increasing power of the internet provides access to an immense body of literature on the subject including individual case studies (a single search on Google for the acronym CBNRM yields over 70,000 results) ... so that it is not justified to claim that information is difficult to obtain.

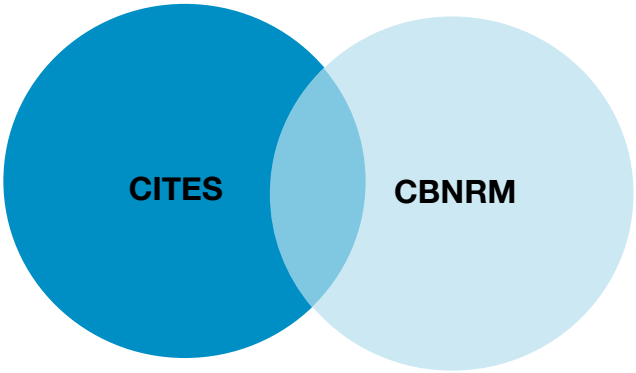
(c) In the context of CITES, when Parties are seeking either to alter the listing of species on the Appendices or to contest actions which might be taken under the banner of "stricter domestic measures", the onus is on the proponents of such motions to provide the information on communal resource management within their countries which the Scientific and Management Authorities of other CITES Parties require to make informed decisions. For the proponent Party, providing such information should entail the fullest cooperation amongst its Scientific and Management Authorities, the affected communities and any NGOs supporting the relevant community institutions.

Income generation, conservation outcome and implications of CITES species listings

Chair: Holly Dublin
Rapporteur: Vin Fleming

General

- Text not agreed by consensus – range of views
- Symposium title confusing
- Challenge to focus on areas of overlap between CITES & CBNRM but the sum of each much greater than the overlap
- Lots of misconceptions about both CITES and CBNRM
- Good to have this first chance to improve understanding between the two areas



Context and questions addressed

Local communities perceive the inclusion of species in the CITES Appendices as an action which restricts use and trade, and hence reduces income generation. Yet, the stable and long-term accrual of income at the local level is likely to be a key factor in the successful management of CITES-listed species by local communities.

Question 1

What are the opportunities for consumptive and non-consumptive uses which generate income at the local community level and do not result in the overexploitation of CITES-listed species?

Opportunities

- Good governance is essential – cannot realise any opportunities without an enabling policy / legislative framework – in turn this is heavily dependent upon political will
- Essential (pre)conditions include need to :
  a) unlock the value of animals and plants through policy reform;
  b) devolve rights to this value to defined local communities – the more value is devolved the greater the incentive to manage sustainably (by contrast, the more that is retained centrally is equivalent to a tax on use);
  c) user rights – local vs. national – need to define resource beneficiaries;
  d) be able to exclude external users – tenure over resource essential;
  e) have regulatory framework to ensure any use is sustainable;

f) have a monitoring system in place so government and the community share the same information on the state of, and trends in, the resource;
g) apply adaptive management to ensure any use is adjusted for sustainability;
h) need to get communities to understand that there must be a link between the benefits they receive and their conservation performance – if not communities do not link benefits to good practice – accountability
i) avoid capture of benefits by elites.

- Need to explore entire range of options for use – engage communities in vision for future uses.
- Opportunities available depend on species/location/political stability – range from ecotourism to trade in live specimens and/or derivatives.
- Benefits to resource and benefits from the resource are two different things.
- Payment for existence values – dependent upon external funds – are these sustainable options?
- Internally or externally driven – home grown or not – does it affect the likelihood of sustainability?
- One way to avoid over-exploitation is through implementing CITES requirements for NDFs

Question 2

Is there demonstrable evidence that CBNRM programmes and associated income generation contribute to improved conservation and sustainable use practices by those same local communities?

Evidence

- Yes (and no)! Good examples of benefits but CBNRM doesn't always work everywhere – equally don't know what would have happened without CBNRM (not many counterfactuals)
- How you judge success depends on objectives of management and related values – these vary between interest groups
- Primary indication of success is stable or improved conservation status of CITES-listed species
- Also benefits from wider ecosystem services and to livelihoods resulting from related habitat protection
- Income generation is only one measure of success - benefits which underpin success are **not always monetary** and include:
  a. civic development & education;
  b. greater empowerment and participation in democratic processes;
  c. shifts to more positive attitudes and increased tolerance to wildlife;
  d. greater sense of pride in community identity and their cultural values;
  e. building links between generations and providing a counter-weight to rural de-population / migration to cities
- Full transparency in supply chain contributes to success of CBNRM – identifies who benefits and at what level?
- Success breeds success – communities look to expand management to other species
- CBNRM a chance to show link between sustainable use of species in CITES context and development objectives (MDGs / UN Millennium Development Goals)
- But difficult for CBNRM to compete with other, often subsidised, land uses (agriculture) especially if income capture is central or through elites
- High commercial values from trade may result in shift of benefits away from local communities – traditional knowledge / controls may be over-ridden or there may be a shift to other production systems (e.g. captive breeding elsewhere)
- Stricter domestic measures within exporting and importing countries – may have significant impacts on success of programmes – communities may feel disenfranchised by these

Question 3

What are the practical implications for local communities and CBNRM programmes when species are included in CITES Appendix I, II or III, or when the Appendices are amended?

Appendix I

- App. I listings desirable for some countries / communities if they prefer non-lethal use of species
- Listings with annotations (trophy hunting) have been successful – e.g. leopard, markhor
- But reaction to up-listing of some species (in human-wildlife conflict) could be negative and detrimentally affect the species
- Up-listings may have an impact on revenue generation for some species (e.g. black rhino)
- Elephants have been a major difficulty but an exception in general terms

Appendix II

- Can result in higher value for specimens (market demand for known sustainable harvest) but brings administrative burdens – NDFs and permits – and management constraints
- NDFs an onerous task – but requirements not defined – should be relatively simple for well-managed CBNRM?
- Misperceptions about nature of App. II – they are not 'endangered species
- What does language in Res. Conf. 8.3 mean ('impacts on livelihood of the poor') – no metrics for measurement
- Lots of opportunities for CBNRM – from down-listing or new listings on App. II
- Scope for capacity building and stimulate data collection

General

- App. III – benefits mostly indirect but could help control illegal trade which diverts benefits from CBNRM
- But App. III often perceived as a precursor to up-listing or trade restriction
- General: ignorance in some perceptions of what CITES does and does not do. Always a negative understanding of CITES (e.g. trade bans, costs of going to meetings to defend positions) – so what can we do to improve the perception of CITES?
- CITES seen as being powerful as does have teeth and does bring limitations (in other words if CITES had no impact / implications then it wouldn't be needed)
- Does CITES have the power or is it the use by others of the power of CITES?
- CITES may have enforcement ability but not necessarily enforcement capacity.

Question 4

How could positive impacts stemming from amendments to the Appendices be enhanced and negative ones mitigated?

Enhancement/Mitigation

- Issues need to be addressed at national level – mitigation or enhancement of benefits all require action at national level - cannot be imposed from outside
- Need better stakeholder consultation within countries to enable communities to inform listing decisions and/or their implementation – and need mechanisms to feed in information on impacts on CBNRM of listing proposal
- Pressures for CBNRM need to be brought to bear **within** a country as a democratic process – not something external interests can easily affect.
- Different sectors (of the same Governments / organisations) act antithetically – need better harmonisation / joining up of policies
- Good information available from CBNRM but countries (MA and SA) not always willing to make use of it
- Differences in support for CBNRM among countries & regions – significant (political) barriers to CBNRM development in some countries – makes mitigation of negative impacts and enhancement of benefits difficult
- Capacity building can contribute to enhancement and mitigation opportunities

Impacts of trade restrictions and other EU policy measures, and combining adaptive management under CBNRM with CITES non-detriment findings

Chair: Colman O'Criodain
Rapporteurs: Katalin Kecse-Nagy, Volker Homes

Context and questions addressed

Developing countries perceive trade restrictions or suspension adopted by the European Union as having negative impacts on CBNRM programmes Furthermore, identifying or gathering the scientific and technical information needed to comply with the provisions of Article IV of CITES (non-detriment finding) often poses real challenges for exporting countries.

Question 1

What is the impact of domestic measures adopted by importing countries, e.g., the United States and the European Union, on compliance with Article IV requirements of the Convention and to the sustainable use of affected species?

- The intrinsic pros and cons of stricter domestic measures were discussed. However, the Treaty allows for these, although it was noted that there is an on-going discussion in CITES as to when and how they should be applied.
- There was some discussion of EU stricter domestic measures that have a veterinary rationale but it was agreed that the focus should be on import regulatory measures that have a conservation rationale.
- The differences of approach regarding the stricter measures of the EU and USA stricter measures were noted – the USA measures are less flexible.
- The EU stricter domestic measures can have positive impacts, leading to recovery of affected populations, improved conservation management and better awareness of NDF requirements in exporting countries.
- They can also facilitate wider initiatives in CITES – e.g. incorporation of species into the Significant Trade Review. There is a strong convergence between EU decision on import restrictions and recommendations concerning the same species/countries in the Significant Trade Review.
- However, these positive conservation impacts are often strongest where the trade is more organized and is represented by organizations in the EU.
- However, EU stricter domestic measures can also have negative impacts leading to loss of revenue and possible loss of motivation to conserve the wild species and its habitat. Moreover, in some circumstances, EU restrictions can simply cause the trade to shift to other export markets. Alternatively, the supply can be met from captive bred sources, with the risk of false declarations or the loss of the motivation to conserve the wild species and its habitat.
- Communication between the EU and stakeholders in range States is many times poor, largely due to poor communication within the range State (between the Management authority and local stakeholders). Stakeholders sometimes find EU requirements confusing.
- Of the presentations in plenary, with the exception of the Argentina example (*Amazona aestiva*) – where the rationale for the restriction was veterinary and where there had been a previous positive scientific assessment, no other negative impacts of EU stricter measures were noted in the cases presented.
- The flexibility of the EU legislation allows it to incorporate CITES outcomes – e.g. implementing Significant Trade Review recommendations.

Question 2

What information/input does the European Union need in order to take well informed decisions concerning potential trade restrictions or suspensions?

- The EU bases its decision on the guidelines that it issues to its own Scientific Authorities but it was agreed that these should be made more widely available and should be supplied to range States that are subject to stricter domestic measures.
- The Scientific Authority guidelines address such issues as biological factors, harvest methods, population management, enforcement and any potential benefits of trade.
- The EU considers its approach as precautionary but pragmatic.
- It was suggested that there is scope for more transparency in EU decision-making but it was also noted that the EU is now making relevant meeting documents publicly available.
- There is a need for more capacity building in range States, even though the European Commission and some EU Member States already provide support through the CITES Secretariat and other channels.
- The EU in some cases receives contradictory information from various sources and must then take a precautionary approach.
- (The EU's requirements for Appendix II species that are protected by the EU Habitats and Birds Directives are equivalent to those of CITES Appendix I.)

Question 3

What can enhanced bilateral or multilateral cooperation contribute to prevent decisions by the European Union that might affect successful CBNRM programmes?

Where community projects are underway that are considered biologically sustainable, it was suggested that these should be brought to the attention of the EU and other CITES Parties – preferably but not necessarily channelled through the relevant Scientific or Management Authorities.

Questions 4 & 5

How did European Union proposals for amendments to the Appendices and related annotations as well as its positions on proposals by other Parties at meetings of the Conference of the Parties to CITES, impact on CBNRM programmes?
AND
How can such impacts be taken into account in the formulation of and argumentation for such EU positions?

- The EU's own proposals in the last 10 years are not of significance in this regard.
- Over the last 10 years the EU has had to take positions on other proposals brought to CoP meetings, including:

  – African Elephant, African Lion, Black Rhino, Polar Bear, Nile Crocodile, Vicuna and Leopard.
- Different views on positive or negative impacts of EU positions on the CBNRM programmes were expressed by participants although it was noted that there is no systematic monitoring and evaluation of these impacts in most cases and there was no basis for concluding that the overall conservation impacts were predominantly either positive or negative.
- For example, in the case of EU position on Tanzania and Zambia elephant down-listing proposals those who supported the proposals would argue that there have been negative conservation consequences including for CBNRM programmes in those countries as a result; on the other hand, those who opposed the proposals would argue that their adoption would have had wider negative conservation consequences including for some CBNRM programmes.
- EU representatives assured the group that they reflected on the CBNRM programmes but also had to take other factors into account, such as biological and trade criteria, and enforcement considerations.

Question 6

How can the European Union maximize the positive impacts and minimize the negative impacts of its policy measures on existing, successful CBNRM practices?

- This was implicitly answered in other questions to some extent.
- However, one would need to cross-reference with other groups regarding the criteria for successful CBNRM.
- Beyond EU CITES policies, EU policies on overseas aid and veterinary issues, etc. would have to be taken into account.

Question 7

How can the adaptive management of Appendix II species under CBNRM programmes be made mutually compatible with and supportive of CITES requirements for NDFs?

- This is a wider question which does not only refer to the EU and so is relevant to other working groups.
- Insofar as it is relevant to the EU refer to Question No. 2.
- It was noted that the NDF is a fundamental requirement for trade in Appendix II specimens.
- The group was informed that when EU has evidence that a species is under a CBNRM regime this can contribute to a positive decision in terms of allowing imports.
- Capacity building programmes would need to be supported.
- CBNRM programmes should have regard to available information on NDF requirements, such as EU Scientific Authority guidelines, the IUCN NDF checklist and the outcomes of the Cancun NDF workshop.

CBNRM and international goals, policies and initiatives for biodiversity: Relevance and interdependence

Chair: Trevor Salmon
Rapporteurs: Marcel Nijnatten

Context and task

The operation of CITES is guided by its Strategic Vision 2008-2013 (Resolution Conf. 14.2), and benefits from cooperation between CITES and other conventions and organizations. Keeping in mind the overall aim of contributing to the conservation and sustainable use of biological resources, how can the final findings and conclusions of this symposium best contribute?

Noting that the task of the group was to assess the contributions that the findings of the Symposium could make before those findings had been made, the working group agreed some working assumptions.

Working assumption(s)

1. CBNRM (whether consumptive or non-consumptive) can assist in the conservation and sustainable use of CITES listed species
2. CBNRM is already taking place.
3. The outcomes of the Symposium will influence the EU in how it decides how to engage with CBNRM, after SC61.
4. There needs to be a consistent understanding of what CBNRM is or agreement on an alternative term. E.g. locally-led management of natural resources for local access and benefits and sustainability.

The working group agreed the following modus operandi in considering its task:
It would consider opportunities and linkages already available, or likely to become available, that may assist the understanding and use of CBNRM so that, where relevant, it can contribute to improved implementation of CITES and an improved understanding and utilization of the concept as a tool to assist in such implementation.

It would seek to focus on possible mechanisms within existing instruments that could improve knowledge and utilization of CBNRM in a way which could benefit CITES listed species.

It would review mechanisms to identify potential or actual beneficial linkages, opportunities for a greater EU focus, and where possible temporal opportunities.

Abbreviations used

ABS	The Nagoya Protocoll on Access and Benefit Sharing
ABS ICNP	Intergovernmental Committee for the
Nagoya	Protocol on Access and Benefit-sharing
AHTEG	Ad Hoc Technical Expert Group
BLG	Biodiversity Liaison Group
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention for Migratory Species
CoP	Conference of the Parties
EBS	European Biodiversity Standard
EU	European Union

FAO	Food and Agricultural Organization
GBO	Global Biodiversity Outlook
GEF	Global Environment Facility
IAS	Invasive Alien Species
ICNP	International Conference on Network Protocols
IPBES	Intergovernmental Panel on Biodiversity and Ecosystem Services
IUCN	International Union for the Conservation of Nature
MEA	Multilateral Environmental Agreement
MoP	Meeting of the Parties
MoU	Memorandum of Understanding
NBSAP	National Biodiversity Strategy Action Plan
ODA	Official Development Assistance
PA	Protected Area
RAMSAR	Convention on Wetlands
REDD	Reduced Emissions from Deforestation and Degradation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SC	Standing Committee of CITES
TEEP	The Economics of Ecosystems and Biodiversity
UNCCD	United Nations Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Center
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCD	United Nations Framework Convention on Climate Change
WHC	World Heritage Centre

Key Relevant MEA and Institutions considered:

a. The CITES Strategic Vision: 2008-2013;
   - *the Strategic Plan for Biodiversity 2011 – 2020 adopted at CBD COP10, in particular the Aichi Biodiversity Targets 2020;*

b. Existing Memoranda of Understanding between CITES and other international organizations such as
   - *the Convention on Biological Diversity:*
   - *the Convention on the Conservation of Migratory Species of Wild Animals;* and
   - *the Food and Agricultural Organization of the United Nations*;

c. Other Instruments:
   - *Ramsar;*
   - *IUCN;*
   - *UNESCO/WHC;*
   - *UNCTAD* and
   - *International Treaty on Plant Genetic Resources*
     (nb. In plenary, UNCCD and UNFCCC also mentioned)

d. the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services);

e. the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS).

f. EU ODA ("Official Development Assistance") cooperation

Opportunities for greater cooperation between CITES and CBD programs and structures

Overview

The CITES Strategic Vision is in the process of being reviewed to take account of the outcomes of CBD CoP10 and the Aichi targets. At the same time countries are developing their NBSAPs to take account of broader biodiversity MEA and development imperatives and the time is ripe to consider if and how CBNRM can appear in these NBSAPs.

Numerous CBD Decisions have elements that are relevant to CBNRM (see below) and with EC leadership better linkages in Brussels and across the EU between CBD and CITES programs there are opportunities to see how CBNRM and CITES can be better embedded in action to deliver those CBD Decisions.

EU (temporal) considerations

The outcomes of the Symposium are unlikely to be able to influence discussions at CITES SC61 but the EU could consider how to subsequently engage with the process agreed to take forward the development of the CITES Strategic Vision's goals, objectives and indicators.

Several CBD initiatives and Decisions incorporate opportunities to enhance the understanding and implementation of CBNRM:

- Art 8j and Decisions X/40 to X/43 – 8j expert group meeting at end of May 2011 provides an immediate opportunity to place CBNRM on the table for consideration;
- Decision X/6 Poverty eradication: expert group meeting on biodiversity and development November 2011 in India;
- X/17 Global strategy for plant conservation;
- X/20 – Cooperation with other MEA;
- X/21 business engagement;
- Sectoral Decisions – i.e. Inland waters (X/28); semi humid aridlands (X/35); invasive alien species (X/36);
- X/31 – Protected Areas (noting the current review of country PAs and the incorporation of these, and especially community managed, PAs into NBSAPs (GEF funds available);
- X/32 Sustainable use: promotion of ecological/production landscapes (NB. Satoyama fund);
- X/36 Forestry: Elements of bushmeat and REDD particulary relevant; and
- X/44 incentive measures.

CBD related meetings which may provide an opportunity to consider the relevance of CBNRM:

- May 2011 – Art 8j expert group
- June 2011 - ABS ICNP meeting
- 7-10 June 2011 (Nairobi) Joint meeting of the Liaison group on bushmeat and the CITES central African bushmeat liaison group
- 20-24 June 2011 (Wycombe, UK): AHTEG on indicators for the Strategic Plan
- 5-7 July 2011 (St. Louis, USA): International Conference on Global Strategy for Plant Conservation
- 7-11 November 2011 (Montreal): 15th meeting – on agenda: restoration; sustainable use (bushmeat) incentives; IAS; inland waters
- 22-25 November 2011 (Dehradun, India): Expert Group on Biodiversity for poverty eradication and for development.
- 30 April – 4 May 2012 (Montreal): SBSTTA (on agenda: island biodiversity; GBO-4; marine and coastal biodiversity; climate change etc)
- 7-11 May 2012: Ad-hoc working group on review of implementation of the CBD.

Broader Biodiversity MEA opportunities

Decisions taken in Nagoya to encourage greater Party involvement in the Biodiversity Liaison Group provide an opportunity for the EU to consider the BLG, after SC61, as a mechanism to initiate a discussion of CBNRM concepts and their integration and application across the MEA.

Review of CITES Strategic Vision

It is unclear yet how this will proceed and whether the current Vision will be extended beyond 2013 or whether a new one (cognizant of the CBD Strategic Plan and targets) will be developed.

In either event, the EU could consider looking to see how, post SC61, the spirit of objectives 3.4 and 3.5 can be enhanced to better embrace and enable CBNRM as an additional tool to assist in the implementation of CBNRM where it can be of assistance.

Review of Delivery of CITES Decisions 15.5 – 15.7 on livelihoods

The EU could encourage the SC working group established under Decision 15.5 to consider CBNRM as an additional tool.

Broader EU Measures

European Biodiversity Strategy

It was not clear to the working group how the recently published EBS (European Biodiversity Strategy) took account of the community facing elements of the Strategic Plan for Biodiversity (2011-2020) and its targets contained under Strategic Goal E (especially targets 17 and 18), and the EU could be encouraged to review this with a view to sharing its experiences with the CITES Parties. As well as its own actions, the lessons learnt by the EU from South-North exchanges such as the Dutch "Rewilding Europe" programme should be learnt and shared. The EU could set an example in following through the Aichi Goals and Targets in the EBS and in Member State NBSAPs, being cognisant of local community interests.

(nb. In plenary examples given of lack of coherance between DGs Environment and DGs Agriculture and Development, plus the benefit of considering CBNRM sources for products otherwise blocked or limited to big-business)

Ramsar Convention

No MoU between the CITES and Ramsar currently exists but with the latter's sites based focus, and therefore local based implementation, a dialogue between the two Conventions to share experiences of CBNRM could be encouraged and to see how CITES listed species can benefit from improved cooperation.

EU (temporal) consideration

Ongoing.

IUCN

(International Union for the Conservation of Nature)

There is an existing, but old, MoU that was not specific to workplan issues but which rather just deals with straight relations between the two Secretariats. CITES and IUCN are currently reviewing MoU. IUCN has a considerable species focus and local experience.

EU (temporal) considerations

EU could consider the opportunity presented by the forthcoming IUCN World Congress, in October 2012, to further promote CBNRM (and for the outcome of that to feature in any revised MoU). The regional meetings could be used to facilitate this process.

Convention on Migratory Species

Existing MoU between the two Conventions already exists, and it includes a joint work program that is currently being updated. There exists clear common interest in shared species and in on the ground CBNRM. The Annex to the MoU includes activities related to shared species and other substantive information that may be of mutual interest (e.g. on projects, activities, data, documents, reviews, etc.) and could identify priority issues for both Secretariats, under which CBNRM is not currently mentioned. Cooperation also exists with several CMS agreements, some of which already include CBNRM elements.

EU (temporal) opportunities
CMS CoP10 in November 2011 will be an opportunity for the EU to consider raising the outcomes of the Symposium to ascertain what opportunities for improved cooperation are present that could result in successful CBNRM projects and better embedding of the concept in both Convention's implementation processes.

FAO

(Food and Agricultural Organization)
An MoU, which currently focuses on fisheries, already exists. A new broader MoU, which will inter alia cover forestry and wildlife, is nearing conclusion between the two Secretariats. FAO works at the grassroots in rural areas, on issues such as underutilized crops, sustainable diet, bushmeat etc. CBNRM is a concept which FAO recognizes and embraces where possible. The two work programs should therefore complement each other in these areas.

EU (temporal) considerations
With the revised MoU nearing conclusion between the two Secretariats, the EU has an opportunity to carefully consider the draft when it becomes available to assess whether it is friendly to the concept of using CBNRM as an additional implementation tool.

UNESCO

(United Nations Educational, Scientific and Cultural Organization)
No MOUs currently exists but the World Heritage Convention is a member of the Biodiversity Liaison Group. The cultural rational for the WHC lends itself to CBNRM but this is underdeveloped. Potential lessons can be learnt from the establishment and maintenance of UNESCO MAB biosphere reserves, which are living working protected areas with a core, buffer and transition zone. The EU could benefit from reviewing MS experiences with biosphere reserves for utilization as evidence in the CBNRM debate.

EU (temporal) consideration
Opportunistic

UNCTAD

(UN Conference on Trade and Development)
UNCTAD is the focal point within the UN for the integrated treatment of trade and development and the inter-related issues in the areas of finance, technology, investment and sustainable development. A cooperative MoU between CITES and UNCTAD, particularly its BioTrade initiative, exists. The main purpose of this cooperation is to ensure the conservation of species, enhance the livelihoods of poor people in remote and marginal areas and promote business opportunities for entrepreneurs that comply with CITES requirements and national legislation. The relevant EU institutions could consider increasing their engagement with UNCTAD, based on the outcomes of this symposium.

EU (temporal) consideration
Ongoing

International Treaty on Plant Genetic Resources

Again the Treaty is part of the Biodiversity Liaison Group. It has a focus of an ABS style exchange system of plant genetic resources of crops, with its Article 6 referring to sustainable use. A mapping exercise by the EU of its related genetic resources work could be helpful to identify experiences of CBNRM.

EU (temporal) opportunities
Ongoing

UNEP/WCMC

(United Nations Environment Program – World Conservation Monitoring Centre)
A tri-annual work program is being developed by WCMC and the CITES Secretariat which may provide opportunities to consider the benefits and opportunities for CBNRM in CITES implementation.

EU (temporal) opportunities
To await sight of the work program

IPBES

(Intergovernmental Platform on Biodiversity and Ecosystem Services)
The opportunities contained at paras 6d and 6h of the Busan declaration are highly relevant and the EU can encourage their retention and development. This would provide an opportunity for the socio-economic aspects of biodiversity conservation to be supported by IPBES.

However, it is accepted that IPBES should not compete with, or duplicate, the existing scientific advice where this is already delivered satisfactorily, including that under CITES provided by the AC and PC and by Parties when proposing listings or Resolutions, but rather fill gaps or complement existing mechanisms.

EU temporal opportunities
Two further IPBES preparatory meetings are likely to take place in autumn 2011 and spring 2012.

TEEB

(The Economics of Ecosystems and Biodiversity)
The TEEB reports' follow up pilot exercises have the potential to provide input on the value of biodiversity and its management in the context of CBNRM.

EU temporal opportunities
Pilot studies into the utility of TEEB are currently taking place.

The Nagoya Protocol on Access and Benefit Sharing (ABS)

The principles of the Nagoya Protocol clearly have the potential to be highly relevant to the interests of local communities.

EU (temporal) considerations
Two pre-MoP ICNP meetings are expected. The first is in June 2011, and a second in expected in 2012 (prior to the anticipated 50th ratification and coming into force of the Protocol). The 2012 meeting may provide an opportunity to gain some consideration of CBNRM principles under the agenda item on global benefit sharing mechanism, especially if some case studies can be presented.

EU ODA

(Overseas Development Aid Programs)

The current review of the EU ODA Strategy (Official Development Assistance), and the interest there to better integrate environment and development cooperation, provides an opportunity to consider embracing CBNRM further within ODA.

EU (temporal) consideration

The Strategy is due to be published/concluded in late 2011. If too late to influence this, DG Environment could consider how to assist the implementation of CBNRM in its roll-out, where it can be useful and of assistance.

Inherent challenges, including those at the EU and MS level

- There exists a lack of coherence across relevant policies.
- In the light of financial and mandate constraints, cooperation and dialogue between Secretariats and/or Party's focal points are needed to ensure successful implementation of measures. A greater focus on outputs would benefit all.
- If local people are not engaged before a listing decision is taken it can result in a lack of ownership of the implementation. It also misses the opportunity to take account of local knowledge. The aspirations of target groups need to be taken into account in decision making, to maximise the chances of successful implementation

Summary conclusion

There exist numerous opportunities within biodiversity MEA, and related institutions, for wider consideration of the use of CBNRM to better achieve the implementation of CITES. The EU could consider all of those identified by working group 4, with a view to supporting its use where beneficial to delivering biodiversity conservation and sustainable use, to enable a broad evidence based evaluation of its utility at CITES CoP16 and beyond.

Section 5. Conclusion

CITES and community-based conservation: Where we go from here

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Introduction

The papers assembled in this volume are ample proof that the Symposium on Community-based Natural Resource Management (CBNRM) held in Vienna in May 2011 achieved the expectations of its organisers, in terms of bringing together key interest groups to synthesize the achievements of CBNRM for conserving species listed in the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and providing the knowledge base necessary for a broad, balanced policy discussion within the European Union (EU) and beyond, regarding the role of rural communities in CITES decision-making processes.

While noting the data gaps, the symposium presents ample evidence of the success of CBNRM. Such evidence includes comparison between the "performance" of populations of certain species in areas under CBNRM vis-à-vis those in Government-run protected areas, not to mention the proliferation of schemes that can be considered as CBNRM, indicating that the model is a successful one.

The acknowledgement of the primacy of conservation impact as the main criterion for success is important. Nevertheless, having accepted this, it then becomes pertinent to consider other issues, such as the generation of revenue for local people, the alleviation of poverty and, perhaps most important of all, the empowerment of local communities (e.g. Arntzen *et al*. 2003; WRI 2005).

Supporters of CBNRM will argue that conservation and livelihood criteria are inseparable. However, Working Groups 1 and 2, and Roe (this volume), all pointed out that CBNRM does not work everywhere, all of the time. Where it does not work we are still faced with the need to achieve positive conservation results *and* to maintain and enhance local livelihoods. Even where it is demonstrably working, there may be ways in which either the conservation impacts or the community benefits – or both – can be further optimised. This leads to consideration of the challenges facing achievement of successful CBNRM.

CBNRM, CBD and CITES

As Molungoy has pointed out in this volume, all of the biodiversity-related Multilateral Environmental Agreements (MEAs) and all of the Rio MEAs endorse the principle of sustainable use of natural resources. However, it is important to be aware of the context for this endorsement. The underlying objective is to protect the biodiversity and ecosystem services upon which human life depends, not to maximise its use *per se*. In fact, the MEAs exist because current levels of use are clearly not sustainable overall. Even the Millennium Development Goals (MDGs), whose overall objective is to improve the dignity and quality of all human life, recognise the need for environmental sustainability (MDG 7). Thus, internationally agreed policies and instruments in the domains both of environmental protection and human development recognise that sustainability and the quality of human life are intertwined.

Sustainable use in many parts of the world where biodiversity is under threat requires engagement by local communities whose livelihoods are dependent on the natural resources in question. In this regard, it is worth noting that the United Nations Convention to Combat Desertification (UNCCD) recognises the role of local communities in its implementation. However, it is the Convention on Biological Diversity (CBD) that goes furthest in marrying the overlapping considerations of conservation, sustainable use and the roles of local communities. The preamble explicitly mentions the importance of local communities and their dependence on natural resources. It also acknowledges the key role of women in biodiversity conservation and, perhaps most importantly of all, it recognises the reality that economic and social development,

and poverty eradication, are the overriding priorities of developing countries. By contrast, none of these issues are mentioned in the preamble to CITES. Moreover, the CBD manages to acknowledge them without diluting the key messages that human life depends on biological diversity, that this diversity is under serious threat and that concerted international action is required to address this threat.

Thus, the CBD rests on a much broader premise than CITES, making it easier to address issues, such as CBNRM. Moreover, the operative text has several key provisions that also facilitate recognition of CBNRM; in particular, Article 8(j) on traditional knowledge, and Article 10(c) on customary use of components of biodiversity.

Of course, the CBD has frequently been criticized (Morgera and Tsioumani 2011) for its heavily-qualified text, its tendency to expand its remit without fully achieving previously agreed commitments, and its convoluted, poorly-drafted decisions of the Conference of the Parties (CoP), as well as its failure to ensure compliance with its provisions. Nevertheless, it provides a *de facto* framework into which the issues addressed by the older biodiversity MEAs fit. Moreover, the Aichi Targets, adopted by the CBD CoP 10 on October 2010, set the context for overarching biodiversity protection actions for the next ten years. It is regrettable that the Aichi targets do not explicitly mention wildlife trade; however, targets 4, 6 and 12 require action to improve the sustainability of such trade if they are to be achieved.

A newcomer to conservation politics might expect, therefore, that there is seamless cooperation between the CBD and CITES, despite their respective shortcomings. Unfortunately, this is not the case. A mild example of the sensitivity towards the CBD in CITES circles can be found in one of the debates at the 61st meeting of the CITES Standing Committee, in August 2011. When discussing cooperation between the two Conventions, the United States, while expressing support for the efforts by the Secretary-General of CITES to create synergies, cautioned that CITES should "retain its character" and "not be subsumed" by the CBD (Miller, Russo and Rosen 2011). A more obvious example was provided shortly afterwards, when the question arose of reviewing the CITES Strategic Vision in the light of the Aichi targets. Some NGOs were openly hostile to this suggestion. Fortunately, their view did not ultimately prevail.

These examples reflect the differences in the "cultures" of both Conventions that impede cooperation at a practical level. For one thing, the United States, which was the first signatory to CITES and remains one of the more influential Parties, is not a Party to the CBD. More fundamentally, however, outcomes under the CBD are reached by consensus. While this can contribute to poorly-drafted and ambiguous decision texts, at the same time it makes for a more collegiate atmosphere, because there are no outright losers. CITES, on the other hand, takes decisions at CoPs by two-thirds majority, with each Party having one vote. Thus the decisions are much more clear-cut and the implications for all stakeholders are more obvious. CITES adherents will often point to this when comparing the Convention with the CBD. However, the clarity of the decision-making process comes at a cost. Considerable bitterness can be generated in the debate, especially when – as often happens – there is a simple majority for the proposal in question but the two-thirds required are not achieved.

Historically, there have been contentious debates in the CBD, over issues such as genetically modified organisms, agricultural subsidies, access and benefit sharing, etc. However, the underlying principles of the Convention – in particular, its endorsement of sustainable use (with equal emphasis on both words!) are not contested.

CITES is, of course, much older than the CBD. It was conceived against a background of widespread international demand for measures to restrict and regulate wildlife trade. This demand came in part from countries that hosted rare species that were in demand in international trade. Although he makes a case for a "light touch" with regard to trade regulation, Hutton's contribution to this volume, citing Murphree (2000), acknowledges that some species of commercial value continue to require global regulation, if only to support national efforts. The Convention rests on this assumption but it also presumes that any trade which does not endanger the survival of the species in question is not objectionable.

Nevertheless, there are vocal interests active in CITES circles who do not share these assumptions. On the one hand, there are those that have an aversion to any extractive use of wildlife, in particular wild fauna. On the other, we have business interests who routinely oppose almost any further restriction of trade.

Perhaps it is to be expected that a Convention which seeks to regulate international wildlife trade will attract the interest of groups that have fundamental ethical objections to such practices as hunting (especially for sport) or the holding of live animals in captivity. It is quite apparent that many of the NGOs – and even some of the Governments – that engage most actively in CITES meetings appear uncomfortable with any extractive exploitation of wildlife. At the very least, they are reluctant to give positive endorsement to such exploitation (Pueschel in this volume, for example). On this basis, some commentators infer that such NGOs, and the Governments that support them, are pursuing an agenda that has more to do with western cultural sensitivities surrounding the welfare of charismatic animals than it has to do with conservation, per se. In the heated rhetoric that often prevails in CITES, this can be expressed in terms of allegations that CITES is "hijacked" by NGOs that are using conservation arguments selectively to achieve hidden agendas that pander to the "gut instincts" of their members and donors, instead of trying to educate those members and donors regarding the complexity of the issues (Siege actually uses the term "hijacked" in his contribution to this volume).

However, the existence of ulterior motives – when this is proven – does not, of itself, invalidate the arguments advanced. On certain issues, the views of such NGOs are shared by others that clearly do not have a doctrinaire objection to extractive use of wildlife. Moreover, these NGOs have their counterparts on the other side of the debate, who represent hunting, trade and fisheries interests, and who are also habitually supported by some Governments. When proposals to restrict trade are debated, such NGOs frequently argue against them on the basis of the risks to livelihoods, the removal of incentives for sustainable use and the risk that trade will simply be driven underground. These are equally considerations that merit debate on a case by case basis but they are not always taken seriously when they are advanced by stakeholders that have a manifest interest in maximising the short-term opportunities for trade, irrespective of the conservation consequences.

Conceptually, CBNRM is about local communities finding ways to maximise both conservation and livelihood objectives. However, once the word "livelihood" is even mentioned, some NGOs react with suspicion. When the communities in question choose to include extractive use among the mix of methods to achieve their objectives the reaction is one of hostility. Tragic as this is, it must be seen as a consequence of the lack of trusts that pervades CITES debates, for which CBNRM is in no way responsible.

The reason that this is tragic, from a conservation perspective, is not that opportunities are being missed to improve livelihoods, important as that is. Rather it is because, when one looks at CBNRM as it is currently practised, it clearly constitutes one of the success stories of conservation in CITES terms and the Convention badly needs more success stories at present.

As with CBNRM itself, there are only limited data available on the success or otherwise of CITES, and very few counterfactuals. However, such data as exist are often not encouraging. Perusal of the IUCN red list (www.iucnredist.org) will show, for instance, that populations of many of Appendix I species – including most that are the subjects of CITES Resolutions (Asian elephant, Asian big cats, most rhino species and subspecies, most great apes, some African elephant populations, Tibetan antelope etc.) – are decreasing. When it comes to Appendix II, the frequent re-entry of species into the review of significant trade and the number of import suspensions the EU has put in place on conservation grounds are also worrying indicators. Moreover, go to the TRAFFIC website (www.traffic.org) on any given day and much of the news items will concern seizures of smuggled CITES-listed species.

Clearly, CITES is falling short on many fronts. Therefore, any mechanism that delivers improved management of CITES-listed species – especially the most threatened ones – must be welcomed. Consequently, the distrust and lack of awareness that impede CBNRM must be overcome.

Lack of awareness of CBNRM

When it was first conceived, the purpose of the symposium was to look at the role of the EU in facilitating or impeding CBNRM. It sprang from concerns that EU decisions in relation to import restrictions, or in relation to policy decisions at CITES meetings, are an impediment to CBNRM. As preparations advanced, the aspirations broadened, so that ultimately the workshop aimed to raise understanding and awareness in the European Union of the potential conservation benefits of linking the management of CITES listed species with rural economic development goals.

Nevertheless, the direct impact of EU decisions on CBNRM remained a recurring theme in working group discussions. However it did not emerge as an issue in any of the case studies presented except in the case of blue-fronted amazon from Argentina, as recounted by Althaus (this volume). In that case it was apparent that the project fell victim to a decision taken in the domain of veterinary policy, not conservation policy (even though that decision was heavily canvassed and subsequently welcomed by animal welfare groups). Conversely, the minimum size limit for import of yellow anaconda skins from Argentina to the EU facilitated bona fide CBNRM and helped to forestall competition from illegal trade (O. Menghi, pers. comm.).

Nevertheless, Working Group 3 also acknowledged that it is also apparent that communications difficulties exist between enterprises in relevant range States that wish to export CITES-listed species (especially Appendix II species) and the EU. This is explained by the fact that the EU must deal with national Governments in the first instance (via their national CITES Management Authorities) and it is below that level that the communication usually breaks down. Nevertheless, this poor communication could contribute to a decision to impose import restrictions. While there were no instances identified where this had impeded a bona fide CBNRM project, such a risk remains. Working Group 3 recommended that those engaged in CBNRM who envisaged exporting to the EU were encouraged to contact the European Commission directly.

With regard to EU policy on CITES decisions at meetings of the Conference of the Parties to CITES, the concrete example raised by Working Group 3 was that of elephant trophy hunts in Tanzania and Zambia based on CBNRM principles that might have suffered as a result of the EU's position on the Appendix II downlisting proposals submitted by those countries to the 15th meeting of the Conference of the Parties to CITES in respect of their elephant populations. However, Working Group 2 acknowledged that elephants in general have been a major difficulty, but also an exception in general terms.

In broader terms, Working Group 1 endorsed the view that loss of markets, whether through stricter measures or stricter listings, are a factor in impeding CBNRM at the international level. On the other hand, not all communities seek to exploit their natural resources through extractive use. In this regard, Working Group 2 also noted that they can support CBNRM project that do not consider consumptive use appropriate.

In many ways, however, the culture that prevails in Europe impedes CBNRM in more fundamental and pervasive ways. Working Group 1 drew attention to the difficulties that many Europeans and North Americans have in relating to the concept of CBNRM. For a variety of reasons, Europe, in particular, has virtually no recent history of communities coming together to generate livelihoods from wildlife management. The entire culture of Europeans' interaction with wildlife – whether indigenous or exotic – has evolved differently as a result. This process has occurred more recently in North America but the pattern is broadly similar. In both continents we have largely urban populations that tend to cherish wild animals – especially charismatic ones – simply because they have so little opportunity to interact with them. Given that these people have a major influence on the views of their respective Governments and NGOs, it is not surprising that simplistic, protectionist views prevail, especially as the economies of those countries are rarely affected as a result.

Before advocates and practitioners of CBNRM can address this, they have first to address the residual lack of awareness that prevails even in CITES circles. The symposium is a major step forward in achieving this. However, CBNRM needs to be integrated into the fabric of CITES discussions, through engagement with the Animals Committee and other relevant expert bodies.

As Working Group 1 pointed out, lack of awareness is not just a problem at the international level. There is also a need for improved awareness at national and, especially, local levels. Poverty, and the associated risk aversion strategies that characterise it (Galbraith 1979) are a contributing factor in this regard. By its nature, CBNRM cannot be imposed from above. However, it is to be hoped that simply devolving more decision-making rights to local communities will allow CBNRM to arise at least semi-spontaneously in some cases.

What is meant by CBNRM?

It will help if there is a clearer understanding of what is meant by the term CBNRM. Although there is a broad understanding, Roe (this volume) has pointed out that it is by no means precise. The term itself developed in Southern Africa (Martin 1986), where Jones (2004) has developed detailed criteria for assessing its effectiveness in terms of poverty reduction. However, it is clearly of wider application. Roe et al. (2009) and Baldus (2009) have reviewed of its application across the African continent. Moreover some of the case studies presented in this volume come from Asia and Latin America.

Moreover, as Roe points out in this volume, between the "extremes" of internationally or nationally-led conservation efforts and community-led ones there lies a broad spectrum of approaches with varying degrees of community participation (Barrow and Murphree 2001). In this context, it is interesting to note that Working Group 1 concluded that the term may have outlived its usefulness. There are cases of projects that are created with CBNRM principles in mind, but there are also others that develop more informally to the point that they comply with those principles. Many projects involve consumptive use but not all – as Weaver, King and others have pointed out in this volume. Community resource management (CRM) was suggested as an alternative.

However, the need for a tighter definition – or, better still, a new term – is crucial. All the more so because otherwise there is a real reputational risk for the concept as a whole, whereby poorly executed projects that purport to follow CBNRM principles undermine the credibility of those that already exist. One of the great achievements of CBNRM to date is that the best examples can stand on their own merits as models of sustainable wildlife management; from a conservationist's point of view, the fact that they enhance livelihoods is simply a bonus. Indeed, Working Group 1 stated virtually at the outset of its report that local communities should be treated no differently to other users of natural resources; that the discussion should focus more on the nature of the resource management rather than on the actors carrying out the management or the areas where it takes place. With this in mind, it is worth considering the interaction of conservation and livelihoods issue in more detail.

CITES and livelihoods

A number of contributors alluded to the need to incorporate cost considerations and livelihoods into the CITES decision-making process. As already noted, whenever these issues are discussed, there is suspicion on the part of some that what is sought is to dilute the scientific basis of CITES decisions. Even though such an argument is sometimes advanced by business interests opposing stricter trade regulation measures, it is not what is sought by advocates of CBNRM. Indeed, such a move would not be consistent with the text of the Convention. Socio-economic and livelihood considerations cannot be accommodated by ignoring the scientific requirements of CITES with regard to the listing of species and the making of non-detriment findings.

Rather, what is at stake is better achievement of CITES' core conservation objectives through involving local communities, with the incentives of greater empowerment and, hopefully, monetary benefit. The introductory chapter to this volume lists a number of CITES Resolutions that reference the livelihoods of the poor and the potential impacts on local communities. These reflect the perception that poorly conceived or executed restrictive measures can be counter-productive in conservation terms, before one even considers the effect they might have on marginal livelihoods. Moreover, as we have already discussed, such measures are often decided on in ignorance of the CBNRM enterprises that might be inadvertently affected.

With this in mind, there are a number of valid questions which decision-makers and proponents of decisions should seek to answer beforehand, insofar as they can.

a) Are CBNRM enterprises (or other actors) exploiting the species or population in question other than by non-extractive means? If so, is such exploitation sustainable?

b) What will be the consequences of the measure, purely in conservation terms? For example, will it tip the economic balance in favour of alternative land uses that have greater negative conservation impacts?

c) Are there any other ways in which the desired conservation outcome can be achieved other than through restrictive measures?

d) If the proponent still concludes that the restrictions are necessary, despite the risk of potential negative consequences, how can this risk be mitigated?

All of these are valid questions to consider in order to ensure that measures to curtail harvest and trade achieve their desired conservation outcome, and that they are proportionate. However, they are not necessarily easy to answer, especially in a climate where a species is undergoing rapid declines and new measures are urgently required.

What are the other impediments to successful CBNRM?

Some of the impediments are practical in nature. To begin with, some species present particular challenges for CBNRM and will be less amenable to successful management in this way. Working Group 1 noted that migratory species fall into this category That Working Group also noted that rare or localised species present difficulties, because the options for sustainable use are narrower and some level of national oversight may be necessary. In some cases, moreover, local human populations may exceed the threshold for sustainable use of available land.

Beyond these particular difficulties, there are much more serious challenges facing CBNRM, identified by Working Groups 1 and 2 and by Roe (this volume), that could be loosely categorised as governance issues, in that they involve competing pressures that affect Government behaviour.

In order for CBNRM to work effectively, Governments must devolve sufficient rights to local communities and must protect those rights. They may choose to put overall limits on the exploitation of more vulnerable species in the national interest but they must give communities as much discretion as possible within those limits. Moreover, these rights must be protected and defended by the legal system.

Governments must also curtail perverse incentives for more environmentally destructive alternative land uses – subsidised agriculture, in particular. This is not easy to achieve as those that are already benefitting from such subsidies will fight to keep them. And that, in turn, leads to the wider problem, that those engaged in competing land uses – especially well-resourced and highly organised entities, such as mining companies – will inevitably be in a stronger position to influence Governments than poor communities living on the margins.

It is not only legitimate enterprises that exert such influence. Kakabadse (2011) has described how those engaged in illegal harvest and trade are often protected by friends in Government. One well-documented case of this is the story of Anson Wong, in Malaysia, widely known as the “Lizard King” (Christy 2009). Brockington (2008) recounts numerous examples of criminality, lack of transparency, and fraud in Tanzania, while Rihoy and Maguranyanga (2007) describe instances of local trusts embezzling or mismanaging revenue from wildlife-based enterprises, attributing this in part to the role played by local elites.

It becomes readily apparent that corruption is a fundamental impediment to CBNRM. It allows powerful vested interests – whether illegal harvesters or legally constituted enterprises – to influence Government in improper ways. In doing so, the rights of marginal communities are trampled on and local biodiversity is also depleted or destroyed.

Moreover, because these problems are so intractable and involve so many privileged elites, they lie at the root of the tendency to set aside conservation-oriented scientific arguments in favour of short-term commercial ones. There is a seductive attractiveness in allowing uncontrolled over-exploitation of the resource to continue in the short term rather than facing up to more fundamental socio-economic or political problems that, as an indirect consequence, are driving poor communities to engage in unsustainable exploitation. However, the long-term consequences both for biodiversity and the welfare of poorer communities are terrible.

The EU and international community also has to look at its wider economic policies with regard to their impact on CBNRM. In particular, its trade policies in respect of, for example, agricultural produce, may be driving land use choices that are impeding CBNRM. It must also demand that corporate interests behave with the same level of probity in less developed countries as would be expected in the EU, for example.

Conclusion

Based on the information presented in this volume, it is clear that CBNRM is making an important contribution to conservation efforts in many of the poorer regions of the world, and that it is achieving this against a wider background of decline in biodiversity, with a very mixed record of success for other more conventional models of wildlife management.

The “null hypothesis” of some participants in the symposium was that EU policy in the CITES arena is an impediment to CBNRM. Although there was only limited direct evidence of this from the case studies presented, it is clear that cultural factors that might loosely be termed “European” or “Western” can impede CBNRM in subtle but pervasive ways. However, it would seem to the present author that this type of wildlife management faces even more fundamental problems: namely a wider lack of awareness, together with weak governance in many of the countries where CBNRM can offer a solution.

The governance issue is a particularly intractable one that affects so many aspects of life in poorer countries. However, it must be tackled, if the efforts of those dedicated to improving both biodiversity conservation and human well-being in those countries are not to be doomed to failure.

Perhaps, tackling the lack of awareness of CBNRM – both within poorer countries and internationally – might be one of the measures that could alleviate the governance issue. Not only does CBNRM constitute a successful means of biodiversity conservation that should be welcomed by the conservation community. It also demonstrates a model for empowerment of local communities and improvement of their lot that could encourage others to take their future into their own hands.

There is much that the EU can do to help, by engaging with CBNRM programmes and with the Governments in the countries where they are taking place. One outcome of this will, hopefully, be that wider economic and trade policies that impede such programmes are corrected, as far as is possible.

Ultimately, though, we must be realistic and accept that the burden of demonstrating this will fall to a large extent on those communities that are already successfully implementing CBNRM. It is a burden that is not to be underestimated. One can only hope that they take it on in the spirit of self-reliance and enterprise that has achieved so much for them to date.

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Martin, Rowan	Independent consultant	Zimbabwe	1
Menghi, Obdulio	Biodiversity Foundation	Argentina	1
Michel, Stefan	Nature Protection Team	Tajikistan	3
Milasowszky, Norbert	VINCA (Vienna Institute for Nature Conservation and Analysis)	Austria	-
Mitic, Michael	Haus des Meeres – Aqua Terra Zoo	Austria	-
Molterer, Jutta	Federal Ministry of Agriculture and Forestry, Environment and Water Management	Austria	-
Muchapondwa, Edwin	University of Cape Town	Republic of South Africa	2
Mulongoy, Jo	CBD (Secretariat for the Convention on Biological Diversity)	Canada	4
Newton, David	TRAFFIC (Trade Records Analysis for Flora and Fauna in Commerce)	Republic of South Africa	1
Nouak, Andrea	Federal Ministry of Agriculture and Forestry, Environment and Water Management	Austria	4
Nunez-Roman, Mercedes	Ministry of Industry, Tourism and Trade (CITES MA)	Spain	1
O'Criodain, Colman	WWF (World Wide Fund For Nature)	Switzerland	3
Orenstein, Ron	SSN (Species Survival Network)	Canada	2
Pangeti, George	Zimbabwe Parks and Wildlife Management Authority	Zimbabwe	2
Peak, Debbie	IPHA (International Professional Hunters Association)	Botswana	2

Persy, Eva-Maria	Vienna City Administration - Municipal Departement for Environmental Protection	Austria	-
Pietsch, Thomas	Four Paws International	Austria	1
Püschel, Peter	IFAW (International Fund for Animal)	Germany	3
Ranner, Andreas	Provincial Government of Burgenland, Conservation Department (common representative of the Austrian Scientific Authorities to CITES EU)	Austria	1
Renaudeau D'Arc, Nadine	South American Camelid Specialist Group of the IUCN-SSC (GECS/IUCN-SSC)	Switzerland	-
Rivera Brusatin, Adriana	Amazon Regional Programme, GIZ (German Society for International Cooperation)	Brazil	4
Roe, Dilys	IIED (International Institute for Environment and Development)	United Kingdom	4
Salmon, Trevor	DEFRA (Department for Environment, Food and Rural Affairs), CITES MA	United Kingdom	4
Sauer, Walter	SADOCC (Southern Africa Documentation and Cooperation Centre)	Austria	-
Scanlon, John	CITES Secretariat	Switzerland	-
Schally, Hugo-Maria	European Commission	Belgium	-
Siege, Ludwig	GIZ (German Society for International Cooperation)	Ethiopia	3
Sinha, Satyen	IFAW (International Fund for Animal Welfare)	United Kingdom	4
Sonntag, Ralf	IFAW (International Fund for Animal Welfare)	Germany	1
Svalby, Johan	FACE (Federation of Associations for Hunting and Conservation of the EU)	Belgium	3
Valentini, Marco	European Commission	Belgium	3
van Nijnatten, Marcel	Ministry of Economic Affairs, Agriculture and Innovation (CITES MA)	Netherlands	4
Vedele, Marc	Ministry of Ecology and Sustainable Development, Transport and Housing (CITES MA)	France	4
Wassermann, Gregor	Vienna City Administration - Municipal Departement for Environmental Protection	Austria	-
Weaver, Chris	WWF (World Wide Fund for Nature)	Namibia	2
Yeater, Marceil	CITES Secretariat	Switzerland	4

WG 1: Principles and characteristics of successful CBNRM programmes; problems and knowledge gaps for effective CITES implementation
WG 2: Income generation, conservation outcome and implications of CITES species listings
WG 3: Impacts of trade restrictions and other EU policy measures, and combining adaptive management under CBNRM with CITES non-detriment findings
WG 4: CBNRM and international goals, policies and initiatives for biodiversity: relevance and interdependence

Appendix 2

The relevance of community-based natural resource management (CBNRM) to the conservation and sustainable use of CITES-listed species in exporting countries

17th – 20th of May 2011

Hosted by
The Federal Ministry of Agriculture, Forestry, Environment and Water Management
Vienna, Austria,
in cooperation with the European Commission

AMENDED SYMPOSIUM AGENDA

Tuesday 17th May

19.00 Welcome dinner

Wednesday 18th May

07.45 – 09.00 Registration at the Conference Center

09.00 – 09.30 **Introductory session**
Host's welcome
Günter Liebel
Head, Section V, General Environmental Policy
Ministry of Agriculture and Forestry, Environment and Water Management
Introduction
Max Abensperg-Traun
Ministry of Agriculture and Forestry, Environment and Water Management
CITES Management Authority

PART I: The global context

09.30 – 09.45 **Emerging challenges and opportunities in listing species on the CITES Appendices, and in ensuring effective implementation**
John Scanlon (Secretary General, CITES Secretariat)

09.45 – 10.00 **Sustainable livelihoods, community involvement and awareness as driving forces for biodiversity conservation**
Hugo-Maria Schally (Head of Unit, International Affairs, Trade and Environment, DG Environment, European Commission)

10.00 – 10.15 A **question of balance? Reflections on the appropriate relationship between rural development and an international convention to regulate wildlife trade**
Jon Hutton (Director, UNEP-WCMC)

10.15 – 10.30 **CITES and the concept of sustainable use of renewable natural resources through CBNRM**
Thomas Althaus (former Chair CITES Animals Committee)

10.30 – 11.00 TEA / COFFEE

11.00 – 11.15 **Community-based natural resource management: an overview and definitions**
Dilys Roe (IIED / International Institute for Environment and Development)

11.15 – 11.30 **Local and global wildlife conservation strategies to advance the well being of animals and people**
Peter Pueschel (Programme Director, IFAW – International Fund for Animal Welfare)

11.30 – 11.45 **FAO's work on sustainable use of bushmeat: engaging in international policy processes and finding practical solutions at the local level**
Edgar Kaeslin (Wildlife & Protected Area Management, Forestry Department, FAO)

11.45 – 12.00 **Harmonizing policy support for CBNRM amongst Multilateral Environmental Agreements**
Jo Mulongoy (Principal Officer, Division of Scientific, Technical and Technological Matters, CBD Secretariat)

12.00 – 13.00 DISCUSSION

13.00 – 14.00 LUNCH

PART II: Community-based natural resource management (CBNRM) – case studies

14.00 – 14.20 **What does CITES mean for an African or Central Asian village? Some experiences from Tanzania and Tajikistan**
Rolf Baldus (President Tropical Game Commission, International Council for Game and Wildlife Conservation) and Stefan Michel (Wildlife Management Expert, Tajikistan Nature Protection Team)

14.20 – 14.40 **The catalytic role and contributions of sustainable wildlife use to the Namibia CBNRM Programme**
Chris Weaver (Director, WWF Namibia)

14.40 – 15.10 **Traditional and modern CBNRM in Ethiopia: the case of the Ethiopian highlands**
Zelealem Tefera (Country Representative, Frankfurt Zoological Society)
Between "tinned" wildebeest and animal rights: how do donors view sustainable wildlife utilization?
Ludwig Siege (Chief Technical Advisor, Ethiopian Wildlife Conservation Authority)

15.10 – 15.30 **No reason to conserve. Exploring the drivers and performance of environmental and wildlife conservation in Kenya**
Anthony King (Executive Director, Laikipia Wildlife Forum)

15.30 – 16.00 TEA / COFFEE

16.00 – 16.20 **Ranching the broad-snouted cayman (Caiman latirostris) in Argentina. An economic incentive for wetland conservation by local inhabitants**
Alejandro Larriera (Deputy Chairman of the IUCN Crocodile Specialist Group)

16.20 – 16.40 **Program for the conservation and sustainable use of the Yellow Anaconda** (Eunectes notaeus, CITES Appendix II) in Argentina
Obdulio Menghi (Biodiversity Foundation Argentina)

16.40 – 17.00 **Use of Vicuña (Vicugna vicugna) and Guanacos (Lama guanicoe) in Andean countries: linking community-based conservation initiatives with international markets**
Gabriela Lichtenstein (IUCN South American Camelid Specialist Group)

17.00 – 17.30 **Creating incentives for community-based management of migratory species: the case study of the saiga antelope and the wider policy perspective**
Aline Kühl and Elizabeth Mrema (UNEP/CMS Secretariat)

17.30 – 18.30 DISCUSSION

18.30 Coordination between symposium organizers, working group chairs and rapporteurs for upcoming Working Groups

Thursday 19th May

PART III: Working Groups

09.00 – 10.30 Working Groups to synthesize symposium findings on the basis of the Working Groups Terms of Reference

10.30 – 11.00 TEA / COFFEE

11.00 – 12.30 Continuation Working Groups

12.30 – 13.30 LUNCH

13.30 – 15.00 Continuation of Working Groups

15.00 – 15.30 TEA / COFFEE

15.30 – 17.30 Continuation Working Groups

17.30 Coordination between symposium organizers, Working Group chairs and rapporteurs

18.00 Shuttle bus from the Conference Centre to an informal dinner at a typical Viennese "Heuriger" (Fuhrgassl-Huber, http://www.fuhrgassl-huber.at/piv_d/archive.php?c=w_main&w=&t=w_front.html), a wine tavern which serves classical Viennese wine and food. At 22.00 hours, the shuttle bus will return participants to their Hotels (only those with block-bookings, others can depart in the city at locations of their convenience). Costs for food and drinks to be covered by participants themselves.

Friday 20th May

09.00 – 10.30 Continuation of Working Groups
10.30 – 11.00 TEA / COFFEE
11.00 – 12.30 Continuation Working Groups
12.30 – 14.30 LUNCH AND FINAL WORKING GROUP SYNTHESES THROUGH WORKING GROUP CHAIRS AND RAPPORTEURS

PART IV: Closing Session

14.30 – 15.30 Presentation of Working Group syntheses by WG chairs
15.30 – 16.30 Discussion
16.30 Concluding statements by organizers

Saturday 21st May

Delegates wishing to stay on in Austria for the weekend might like to consider a visit to the unique Nationalpark Donauauen which preserves the last remaining major wetlands environment in Central Europe, or to the transnational Nationalpark Neusiedlersee in the border region of Austria and Hungary. Both are known for their high diversity of wetland birds in particular.

Those interested should contact nationalpark@donauauen.at (http://www.donauauen.at/) or info@nationalpark-neusiedlersee-seewinkel.at (http://www.nationalpark-neusiedlersee-seewinkel.at/) for information.

Symposium

The relevance of community-based natural resource management (CBNRM) to the conservation and sustainable use of CITES-listed species in exporting countries

Vienna, Austria
17th – 20th May 2011

TERMS OF REFERENCE FOR THE WORKING GROUPS

WORKING GROUP 1

Chair: Rowan Martin
Rapporteur: Amelie Knapp, David Newton

PRINCIPLES AND CHARACTERISTICS OF SUCCESSFUL CBNRM PROGRAMMES; PROBLEMS AND KNOWLEDGE GAPS FOR EFFECTIVE CITES IMPLEMENTATION
When attempting to generate broad symposium findings, the following questions seem relevant:

1) Which fundamental principles and characteristics of CBNRM programmes are essential to achieving the successful conservation and sustainable use of CITES-listed species through CBNRM?
2) Do these principles and characteristics apply irrespective of geography and taxon?
3) Could these principles and characteristics serve as indicators against which to determine what constitutes a successful CBNRM programme?
4) What are the greatest hurdles for the successful implementation of CBNRM programmes, and how can they be overcome?
5) What are the current knowledge gaps regarding the role of local communities in the successful application of CBNRM programmes which contribute to more effective implementation and enforcement of both the Convention and related national legislation?

WORKING GROUP 2

Chair: Holly Dublin
Rapporteur: Vin Fleming

INCOME GENERATION, CONSERVATION OUTCOME AND IMPLICATIONS OF CITES SPECIES LISTINGS
Local communities perceive the inclusion of species in the CITES Appendices as an action which restricts use and trade, and hence reduces income generation. Yet, the stable and long-term accrual of income at the local level is likely to be a key factor in the successful management of CITES-listed species by local communities. So:

1) What are the opportunities for consumptive and non-consumptive uses which generate income at the local community level and do not result in the overexploitation of CITES-listed species?
2) Is there demonstrable evidence that CBNRM programmes and associated income generation contribute to improved conservation and sustainable use practices by those same local communities?
3) What are the practical implications for local communities and CBNRM programmes when species are included in CITES Appendix I, II or III, or when the Appendices are amended?
4) How could positive impacts stemming from amendments to the Appendices be enhanced and negative ones mitigated?

WORKING GROUP 3

Chair: Colman O'Criodain
Rapporteur: Katalin Kecse-Nagy, Volker Homes

IMPACTS OF TRADE RESTRICTIONS AND OTHER EU POLICY MEASURES, AND COMBINING ADAPTIVE MANAGEMENT UNDER CBNRM WITH CITES NON-DETRIMENT FINDINGS
Developing countries perceive trade restrictions or suspension adopted by the European Union as having negative impacts on CBNRM programmes Furthermore, identifying or gathering the scientific and technical information needed to comply with the provisions of Article IV of CITES (non-detriment finding) often poses real challenges for exporting countries.

1) What is the impact of domestic measures adopted by importing countries, e.g., the United States and the European Union, on compliance with Article IV requirements of the Convention and to the sustainable use of affected species?
2) What information/input does the European Union need in order to take well informed decisions concerning potential trade restrictions or suspensions?
3) What can enhanced bilateral or multilateral cooperation contribute to prevent decisions by the European Union that might affect successful CBNRM programmes?
4) How did European Union proposals for amendments to the Appendices and related annotations as well as its positions on proposals by other Parties at meetings of the Conference of the Parties to CITES, impact on CBNRM programmes?
5) How can such impacts be taken into account in the formulation of and argumentation for such EU positions?
6) How can the European Union maximize the positive impacts and minimize the negative impacts of its policy measures on existing, successful CBNRM practices?
7) How can the adaptive management of Appendix II species under CBNRM programmes be made mutually compatible with and supportive of CITES requirements for NDFs?

WORKING GROUP 4

Chair: Trevor Salmon
Rapporteur: Marcel van Nijnatten

CBNRM AND INTERNATIONAL GOALS, POLICIES AND INITIATIVES FOR BIODIVERSITY: RELEVANCE AND INTERDEPENDENCE
The operation of CITES is guided by its Strategic Vision 2008-2013 (Resolution Conf. 14.2), and benefits from cooperation between CITES and other conventions and organizations. Keeping in mind the overall aim of contributing to the conservation and sustainable use of biological resources, how can the final findings and conclusions of this symposium best contribute to:

1) the CITES Strategic Vision: 2008-2013;
   i. the Strategic Plan for Biodiversity 2011 – 2020 adopted at CBD COP10, in particular the Aichi Biodiversity Targets 2020;
2) existing Memoranda of Understanding between CITES and other international organizations such as
   i. the Convention on Biological Diversity,
   ii. the Convention on the Conservation of Migratory Species of Wild Animals and
   iii. the Food and Agricultural Organisation of the United Nations;
3) the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) of the UNEP/UNESCO; and
4) to define the mutual relationship between CITES and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS).

Biographies of speakers (in order of appearance)

In terms of content and aims, the presentation of Ludwig Siege is more appropriately placed in the "Global context" section rather than the "Case studies" (see Symposium agenda). It was therefore agreed to rectify this error for the symposium proceedings.

John Scanlon
John, an Australian and British national, has had a unique range of experience with environment and sustainable development policy, law, institutions and governance at the international, national, sub-national and local level.

His work experience has been gained in the private sector, in government, with the United Nations and with international organizations, as a leader, manager, professional adviser and legal practitioner, as well as through senior voluntary positions with the non government sector.

John joined CITES as Secretary-General in May, 2010.

His previous appointments include:
- Principal Advisor to the Executive Director of UNEP (Nairobi, Kenya);
- Strategic Advisor to the World Commission on Dams (Cape Town, South Africa);
- Head of the IUCN Environmental Law Programme/Director of the IUCN Environmental Law Centre (Bonn, Germany);
- Chief Executive, Department of Environment, Heritage and Aboriginal Affairs (Adelaide, Australia);
- Deputy Director General, Department of Infrastructure, Planning and Natural Resources (Sydney, Australia); and
- Chief of Staff, Minister for Environment and Natural Resources (Adelaide, Australia) and Acting Policy Advisor, Australian Federal Minister for the Environment (Canberra, Australia).

John has served as President of the National Environmental Law Association of Australia (SA Division), was founding chair of the Environmental Law Community Advisory Service (SA), and is a member of the IUCN Commissions on Environmental Law and on Protected Areas. He was admitted to legal practice in 1984, holds a Bachelor of Laws (1983), Master of Laws (Environmental) (1995), and is an accredited mediator (1996).

Hugo-Maria Schally
After graduating from law school (University of Graz, Austria) he practiced law in Austria for several years. He then did postgraduate studies in international relations at the Vienna Diplomatic Academy. In his further career he worked mainly on issues linked to sustainable development in the multilateral context holding jobs with UNDP, the Austrian Ministry for Foreign Affairs and the Organisation for Security and Co-operation in Vienna. He joined the European Commission in 1998 and has been a Head of Unit in Brussels in the Directorates General "External relations" and "Development". He is currently heading a unit at the Directorate General "Environment" dealing with Multilateral Environmental Agreements and Trade. In the course of his career he has been closely involved with the negotiation and implementation of many multilateral environmental agreements such as on the Ozone Layer, Climate Change, Bio-Diversity, Trade in Endangered Species, Waste as well as with major global Conferences such as UNCED (Rio de Janeiro, 1992), ICFFD (Monterrey, 2002) and WSSD (Johannesburg, 2002).

Jon Hutton
Jon Hutton is Director of the UNEP World Conservation Monitoring Centre (UNEP-WCMC) which is based in Cambridge. He has a background in biodiversity science, rural development and international policy, as well as over 20 years experience working as a conservationist in Africa, principally in Zimbabwe where he obtained his PhD in crocodile ecology. Jon has produced over 50 peer-reviewed papers and books covering issues such as conservation policy, wildlife management, community-based natural resource management, the sustainable use of natural resources and the relationship between conservation and poverty. In recognition of his academic interests he was made a Senior Member of Hughes Hall college, Cambridge, in 2004 and appointed Honorary Professor of Sustainable Resource Management at the University of Kent in 2007.

Thomas Althaus
Studies in Biology (zoology/ethology, botany, psychology of perception and learning psychology) at the University of Berne (Switzerland) and at the Colorado College (USA). Field work in the Grand Teton National Park (Problem of the "bear-trees"). Diploma and PhD thesis (Dr. phil. nat., 1982, University of Berne) on the development of behavior of dog puppies (Siberian Huskies). Research and teaching assistant at the Station of Ethology at the University of Berne (special field: Animal-human relationship). From 1986 to 2006 head of the Swiss CITES Management Authority and secretary of the CITES Scientific Authority of Switzerland and Liechtenstein. Member and (since 2002) head of the Swiss delegation at the CITES COPs and at the Meetings of the CITES Standing Committee. Since 2000 European Representative in the CITES Animals Committee and from 2002 to 2010 Chair of this committee. 1992-2006 Commissioner of Switzerland in the International Whaling Commission. Responsible for the implementation of the legislation on the keeping of wild animals at the Federal Veterinary Office and function as expert in the field of the keeping of wild animals in zoos, circuses and by private individuals. From 2005 to 2010 staff member at the WAZA executive office (World Association of Zoos and Aquaria). Now retired, he works as an independent consultant.

Dilys Roe
Dilys Roe is a Senior Researcher in the Natural Resources Group of the International Institute for Environment and Development (IIED) and leads IIED's work on biodiversity. She has a BSc and MSc in Environmental Management and is a PhD candidate at the Durrell Institute for Conservation and Ecology (DICE). Dilys's work focuses specifically on the interlinkages between biodiversity conservation and poverty reduction and she has published extensively on this theme. She coordinates the "Poverty and Conservation Learning Group" – a network of conservation, development and indigenous rights organizations (see www.povertyandconservation.info); is a core partner of the Social Assessment of Protected Areas (SAPA) initiative; and was a founding member of the Conservation Initiative on Human Rights. In addition to her work at IIED, Dilys has previously acted as a consultant biodiversity advisor to the UK Department for International Development (DFID).

Peter Pueschel
Peter Pueschel's professional history includes almost three decades in wildlife conservation and environmental protection in senior positions with international non-governmental organisations; particularly Greenpeace and IFAW (International Fund for Animal Welfare). To further ecological sustainability and animal welfare conservation policies he has worked to further international conventions like CITES as an NGO representative. His leadership portfolio includes programme areas such as reforming destructive fisheries, halting wildlife habitat pollution, campaigning against commercial whaling and eliminating other detrimental exploitation of wildlife and wildlife habitats of species such as sea turtles, tigers, elephants and many more. His work includes successful collaborations with national and international enforcement agencies to combat wildlife crime. His experience includes participation in many international conferences such as the International Whaling Commission (IWC), fisheries meetings of the UN Food and Agriculture Organization (FAO), Interpol, the Convention on Migratory Species (CMS) and the UN Convention on Biodiversity (CBD). Today Peter Püschel is Head of IFAW's Tiger Programme, is in charge of IFAW's policy involvement with international agreements and conventions worldwide and supervises international campaigns.

Ludwig Siege
Ludwig Siege was born in 1950 and trained as an economist. He joined the German Agency for Technical Cooperation (GTZ) in 1980 and has worked there ever since in various capacities. From 1983 to 1985 he had his first assignment in Tanzania in the Tanga Integrated Rural Development Programme. After an assignment in Eschborn, the headquarters of GTZ, he took over the Integrated Rural Development Project in Kabompo, Zambia (1987-90). Between 1991 and 1993 he headed the Sudan programme of GTZ, and at the end of 1993 he returned to Tanzania to take over the Selous Conservation Programme. He implemented a number of additional German and European conservation programmes and was involved in the planning of the Selous-Niassa Wildlife Corridor project. He left when the Selous Conservation Programme came to its end in December 2003 and then worked for three years in Madagascar as head of the German bilateral Natural Resources Programme. Presently he is in charge of a protected area programme in Ethiopia funded by the Global Environment Facility.

Edgar Kaeslin
Edgar Kaeslin has been working for the Food and Agriculture Organization of the United Nations (FAO) since January 2009 in the Forestry Assessment, Management and Conservation Division (FOM) as the Officer for Wildlife and Protected Area Management. With a mandate to reconcile conservation, sustainable use and rural development, he has been involved in global policy and project work with a thematic focus on human-wildlife conflict, the unsustainable and/or illegal use and trade of wildlife and its products ("bushmeat"), and the impacts of climate change on wildlife and protected areas, and a geographical focus so far on Africa, Central Asia and the Near East region. Before joining FAO, he has been working as the Scientific and Technical Officer for the Ramsar Convention Secretariat based at IUCN Headquarters in Gland, Switzerland, and before that – from 2004 to 2006 – he had been advising and backstopping a portfolio of environmental projects in the Kenyan coast province for UNDP under the GEF Small Grants Programme.

A zoologist by training, he studied the impacts of forest edges and small-scale secondary forest patches on bird diversity in an Amazonian lowland rain forest of Ecuador for his PhD thesis in the late 1990's.

Jo Mulongoy
Trained as a microbiologist, biotechnologist and food technologist, Jo Mulongoy taught as Professor in the Democratic Republic of the Congo, Nigeria, Belgium and France. He headed the Soil Microbiology Department at the International Institute of Tropical Agriculture (IITA) in Nigeria for 14 years. He headed the Plant Biotechnology Programme of the International Institute for Research for Development in Africa in 1992 and 1993 in Cote d'Ivoire and directed the Biotechnology and Biodiversity Programme of the International Academy of the Environment in Geneva from 1996 to 1999. He worked for the Secretariat of the Convention on Biological Diversity from 1993 to 1995 and, as the Director of the Scientific, Technical and Technological Matters Division, from 1999 to date. In this capacity, he played a key role in developing the strategic plan for biodiversity and all the programmes of work of the Convention, including the one on protected areas.

Rolf D. Baldus
Rolf D. Baldus, a 1949 born economist, was a university staff member, a family-company manager and a consultant before he became a ministerial ghost-writer and later the personal assistant to the Minister for Development Cooperation in Bonn. After working at the EU wildlife desk in Brussels he managed the Selous Conservation Programme under German-Tanzanian development cooperation from 1987 to 1993. Back in Germany he was in charge of the Development Policy Section in Chancellor Helmut Kohl's Office until he returned to Tanzania in 1998 at the invitation of the Wildlife Division. As Government Advisor for Community Based Natural Resources Management he was involved in developing a new Wildlife Policy and in revising the Wildlife Act. He also assisted the creation of the Saadani National Park and the Selous-Niassa Wildlife Corridor before returning to the German Ministry for Development in 2005, where he was responsible for the cooperation with the Southern Caucasus and Central Asia. Until recently he served as President of the Tropical Game Commission in the International Council for Game and Wildlife Conservation (CIC). After retiring from Government services he now lives near Bonn, working as an author.

Stefan Michel
Stefan Michel, born in 1969, became a professional animal keeper after finishing school education and worked in the Zoological Garden in Dresden for five years. He then studied biology at the Martin-Luther-University Halle-Wittenberg, specializing in geobotany and zoology. Since student days he regularly travelled to central Asia. He initiated a project on biosphere reserve establishment in the Nuratau-Kyzylkum region of Uzbekistan. The experience with this project, which addresses protected area development and nature resource management in the buffer zones motivated him to focus on a new project. Since 2008 he works as an integrated expert in the Tajik NGO "Nature Protection Team." With support of the German development cooperation agency / Gesellschaft für Internationale Zusammenarbeit (GIZ) this NGO implements a project on conservation and sustainable use of mountain ungulates in Tajikistan. In the frame of a regional GIZ programme in Central Asia he is also active in Kyrgyzstan and advises in particular on the development of a legal framework for wildlife management, on wildlife monitoring and

community based wildlife management. Furthermore he has been involved with various nature resource management projects in Georgia, Iran, Kazakhstan, Kyrgyzstan, Russia and Tajikistan.

Chris Weaver
L. Chris Weaver has been the Director of the WWF Program in Namibia since 1993, providing guidance and assistance to Namibian partner organizations in the development of one of the world's most highly regarded community conservation programs. Prior to working for WWF, Chris spent 14 years in the south-western United States and southern Africa assisting Native Americans, African pastoralists, and a number of government agencies with the introduction of common property natural resource management systems.

In Namibia, Chris has assisted partner organizations to establish 64 communal conservancies and has personally been a key facilitator to the introduction of market-based conservation. This innovative conservation approach places extensive emphasis on mobilizing and empowering local communities to manage their wildlife resources, and in turn, receive wildlife-generated income through both consumptive and non-consumptive forms of tourism.

Chris holds a BSc in Rangeland Management and MSc in Range Ecology from the University of Arizona.

Zelealem Tefera Ashenafi
Zelealem Tefera is a wildlife ecologist and has been working as wildlife conservation expert and park warden in various national parks in Ethiopia. His main interests are: ecological research, endangered species management; wildlife disease, conservation planning, community-based conservation, policy and law, protected area management, environmental impact assessment, community-based tourism and conflict resolution. Currently he is working as the country representative for the Frankfurt Zoological Society-Ethiopian Country Office. He is also responsible for the Society's Afro-alpine Ecosystem Conservation Project and oversees the ecological monitoring, community conservation, and community-based tourism development of this project. In his conservation efforts he closely works with the regional conservation offices, communities, Ethiopian Wildlife Conservation Authority, Addis Ababa University, Wondo Genet Forestry and Natural Resources College, Ethiopian Wolf Conservation Programme and WildCRU of Oxford University. He has a PhD in Biodiversity Management form the University of Kent at Canterbury, UK, and his specialities are endangered species management, protected area management and community-based conservation.

Anthony King
Anthony King is from Kenya. His profession is natural resource management with special interest in the engagement of natural resource users in management. He has an MSc from the London School of Economics and Political Science (UK) and a PhD from the Ecosystems Analysis and Management Group at the University of Warwick (UK). He has worked in natural resource management for private sector, government and non-governmental organisations for the last 19yrs in Australia, Colombia, Kenya and Tanzania. He is currently the Executive Director of the Laikipia Wildlife Forum.

Alejandro Larriera
Alejandro Larriera is a Veterinarian graduated from the Universidad Nacional del Litoral in Esperanza, Santa Fe, Argentina, in 1981. His post graduate background is on wildlife management in general, and on reptiles in particular. He was first appointed as a Crocodile Specialist Group (CSG) member in 1990, and since then became Deputy Vice Chairman For Latin America in 1994, Regional Vice Chairman for Latin American & the Caribbean Region in 1996, and Deputy Chairman of the CSG in 2004 up to now. He also had political responsibilities in Santa Fe, Argentina as Director Provincial de Recursos Naturales from 2004 to 2006, and as Subseretario de Recursos Naturales from 2006 and 2007. Currently he is the Director of Wildlife Management in Santa Fe. Alejandro is currently acting as technical adviser of the three ranching crocodilians operations in Argentina. Since the year 2004, he is Associated Professor at the Universidad Nacional del Litoral, giving the course on Wildlife Management. Alejandro Larriera is a categorized researcher on the National Council of Research in Argentina, with over than 150 papers published in national and international journals. Alejandro received the "Premio Brigadier

General Estanislao Lopez" in 1992; the "Distinción Francisco de Asís" in 1999; the "Distinción del Colegio de Médicos Veterinarios de Santa Fe" in 2000, and finnally the " Premio Nacional a la Excelencia" in 2002. All the prizes were because his contribution to the conservation of wildlife.

Obdulio Menghi
Biologist (Buenos Aires University), Ms. Sc. in Biology (Geneva University), he also obtained the *International Certificate on Human Ecology* issued by several European Universities, under the auspices of the Regional Office for Europe of W.H.O. Biologist at the IUCN Latin American Desk in Morges/Gland, Switzerland. Former Scientific Coordinator and Chief of the Scientific Unit (1975-1998) of the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES/UNEP). Extensive experience in projects for sustainable use of CITES Appendix II species in Asia, Africa, Latin America and the Caribbean. His work has been distinguished with several international awards, including the "*Conservation Leader*" received during the *IV International Congress on Wildlife Management in Amazonia and Latin America*. He regularly collaborates with different European Universities (Italy, France and Spain) and gives at governmental level seminars and lectures on sustainable use in Europe, Asia and Latin America and the Caribbean. He is a Member of the IUCN/Crocodile Specialist Group and has been invited by the Argentinean Government and the Embassy of United States of America in Argentina into the Jury for the *Funds for the Americas* to select sustainable use projects and/or projects related with human populations living in particular ecosystems. He is also a Member of the National Commission for the Conservation of the Biological Diversity of Argentina. Since 2000 he is President of the Biodiversity Foundation of Argentina (www.biodiv.org.ar).

Gabriela Lichtenstein
MSC in Biology, University of Buenos Aires; PhD in Behavioral Ecology, King´s College, University of Cambridge, Post-doc Dept. of Geography, University of Buenos Aires. Permanent Research Position (Investigadora Adjunta), National Research Council (CONICET), Argentina; Lecturer University of Buenos Aires; since 2007 Chair of UICN´s SSC, South American Camelid Specialist Group (IUCN-SSC-GECS). Her interest in South American camelids started in 1997 while working for IIED-AL when she coordinated research on Community based vicuña management in Peru for the Evaluating Eden Project. From 2001-2005, she took part in the EU funded MACS Project (Sustainable Management of Wild South American Camelids funded by the European Community) where she studied economic and socio-cultural impacts of vicuna use in Andean countries and their policy implications. Since 2006, she works on a research project on factors affecting the sustainability of guanaco use in Argentina and local incentives for conservation. Research interests also include commodity chain analysis for wild South American fibre and the establishment of trade links to help a fairer and more equitable proportion of benefits to local people. She has published a large number of research papers, book chapters and technical reports. Her interest in articulating research results with policy led her to collaborate with CITES, FWS (US Fish and Wildlife Service), the Vicuña Convention, the Ministry of Science and Technology of Argentina, and national and local management authorities. www.camelidosgecs.com.ar.

Aline Kühl
Aline Kühl is an expert in natural resource management having worked at the interface of research, implementation and policy in this field since 2003. Since 2008 she has been with the UNEP Convention on Migratory Species (CMS) where she is currently based in the Science Unit as Associate Scientific & Technical Officer. Aline is familiar both with the grass-roots project management level through her migratory species research in Central Asia and the Russian Federation, as well as the international policy level through her work at CMS.

Aline is a biologist trained at Oxford University, with an MSc and PhD from Imperial College London focussed on the conservation ecology of the CMS Appendix II listed saiga antelope (*Saiga* spp.). Aline's research interests are broad ranging from hermaphrodites to the management of exploited species to climate change and international environmental governance. Together with fellow saiga antelope researchers, Aline founded the Saiga Conservation Alliance in 2006, an NGO aimed at restoring saiga populations throughout their range. Aline has published widely in scientific and popular journals, and has co-authored and featured in two environmental documentary films.

Appendix 5

Biographies of Working Group Chairs

Rowan Martin
Rowan Martin was born in Zimbabwe in 1942, graduated from Manchester University in 1965 as an electrical engineer with an MSc in solid state physics. He joined the Anglo American Corporation in South Africa, became a specialist in marine diamond mining and worked full-time at sea off the Namibian coast until 1970 as a production engineer.

He joined the Zimbabwe Department of National Parks and Wild Life Management as a technician in 1972 to work on biotelemetry projects. He became Chief Ecologist (Terrestrial) in 1987 and Deputy Director (Research) in 1993. In 1983-1985 he developed the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) which, for the first time in southern Africa, empowered local communities to become the management authorities for their own wildlife resources. In 1985 he carried out a major consultancy for the CITES Secretariat to establish quotas for trade in ivory for all countries in sub-Saharan Africa and the recommendations were adopted by the Conference of the Parties. In 1987 he did a similar consultancy on the status of the leopard in sub-Saharan Africa which was also adopted at the COP.

He has been a member of the African Elephant and Rhino Specialist Group of the Species Survival Commission of IUCN and served as the Chair of the Southern African Sustainable Use Specialist Group (SASUSG) from 1995-1998.

Since retiring in September 1997, he has carried out a diverse range of consultancies (74 in total), written scientific papers, developed sustainable use principles for SASUSG and designed large simulation models for elephant and rhino management. His most recently completed project involved the population dynamics and trophy hunting of the Botswana elephants (the largest population in Africa).

Holly T. Dublin
Holly Dublin has spent the past three decades working in the field of conservation and development. Having lived in Africa since her childhood, Holly moves with ease between the day-to-day realities and concerns of conservation practitioners and the world of international policy and its decision-makers. Holly has been involved for many years with strategic planning, monitoring and evaluation and programme implementation under challenging political, socio-cultural, economic working conditions, while managing staff and overseeing partnership agreements involving teams of remotely posted individuals. She has also served as the elected Chair of the IUCN Species Survival Commission and been the Chair of the SSC's African Elephant Specialist Group for the past 19 years. She has been a devoted mentor of many aspiring professionals around the world.

As a trained facilitator she has mediated successful negotiation on some of the most controversial topics in modern conservation. Putting these skills to use, she has been an active player in the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) and is also an experienced evaluator and adviser on corporate sustainability.

An accomplished speaker and writer, Holly has received many of the top awards in her field. She has a proven track record of deeply understanding the issues, thinking analytically and putting lessons from diverse realms into operational practice.

Colman O'Criodain
A botanist by background, Colman O'Criodain began working on CITES and wildlife trade issues generally in 1997 while also working on domestic nature conservation matters in the Irish Environment Ministry. From 2002 to 2005 he was seconded to the European Commission's CITES team, as the scientific lead and the chair of the EU CITES Scientific Review Group. In this role he also helped to co-ordinate the EU position at CoPs12 and 13 and to revise EU CITES legislation. On his return to Ireland he continued to work on CITES issues, along with other domestic conservation responsibilities. He represented Ireland at CoP14, where he chaired the budget discussions. During that time, he also undertook consultancy work for TRAFFIC, including authorship of a report on the effectiveness of EU CITES legislation that included elements relevant to the discussions at this symposium. In 2008 he moved to WWF International's Species Unit, as the policy analyst on international wildlife trade and attended CoP15 in that capacity.

Trevor Salmon
Trevor has worked within Government on domestic and latterly international biodiversity issues since 1994. He is currently the head of the UK's CITES Management Authority, a role he has held since 2006, in the Department of Environment, Food and Rural Affairs. His duties also include lead policy responsibility for the UK's interests in international species protection, including the UK's membership of the Convention on Migratory Species and the International Union for Nature Conservation. Trevor is team leader of one half of the UK's international biodiversity sub-programme, which seeks to integrate and synergise the efforts of the biodiversity MEAs, where the UK has been an active participant in the development of the CBD Strategic Plan, IPBES and the ABS Protocol. In his previous post he was responsible for the UK's international protected areas policy interests, a role which saw him as the UK focal point for the Ramsar Convention, and working with the Convention on Biological Diversity to develop its approach to protected area designation and management. He is currently chair of the CITES E-Commerce working group, and the CMS Finance and Budget working group.

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