



IUCN SSC Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives

Ver. 1.0 (09 August 2012)

Citation: IUCN SSC (2012). IUCN SSC Guiding principles on trophy hunting as a tool for creating conservation incentives. Ver. 1.0. IUCN, Gland.

Section I. Introduction

IUCN has long recognized that the wise and sustainable use of wildlife can be consistent with and contribute to conservation, because the social and economic benefits derived from use of species can provide incentives for people to conserve them and their habitats. This document builds on existing IUCN policies by setting forth SSC guiding principles on the use of “trophy hunting”, as defined in Section II, as a tool for creating incentives for the conservation of species and their habitats and for the equitable sharing of the benefits of use of natural resources.

Trophy hunting is often a contentious activity, with people supporting or opposing it on a variety of biological, economic, ideological or cultural bases. This document is focused solely on the relevance of trophy hunting for conservation and associated local livelihoods. Nothing in this document is intended to support or condone trophy hunting activities that are unsustainable; adversely affect habitats; increase extinction risks; undermine the rights of local communities to manage, steward, and benefit from their wildlife resources; or foster corruption or poor governance.

Section II. Scope of this guidance

The term “trophy hunting” is here used to refer to hunting that is:

- Managed as part of a programme administered by a government, community-based organization, NGO, or other legitimate body;
- Characterized by hunters paying a high fee to hunt an animal with specific “trophy” characteristics (recognizing that hunters each have individual motivations);
- Characterized by low off-take volume;
- Usually (but not necessarily) undertaken by hunters from outside the local area (often from countries other than where the hunt occurs).

These elements differentiate the hunting at issue here from a broad array of other hunting activities, although it is recognized that what is here defined as trophy hunting may be given a different name in some countries. Thus these guiding principles are not intended to apply to subsistence hunting, to legal hunting of relatively common species, or to management activities undertaken by wildlife management agencies, although some elements of them may be relevant to these activities. Such hunting activities may also generate incentives for conservation, but are beyond the scope of this guidance.

These guiding principles apply specifically to trophy hunting programmes oriented to terrestrial wild animals in their native geographic ranges. Existing IUCN policy does not support moving species outside their native ranges for the primary purpose of trophy hunting¹. In keeping with existing IUCN policy (IUCN Recommendation 3.093, adopted by the IUCN Congress at its 3rd Session in Bangkok, Thailand, 17-25 November 2004, which condemned “the killing of animals in enclosures or where they do not exist as free-ranging”), the IUCN SSC does not support trophy hunting of animals in enclosures where they cannot be considered “free-ranging” and cannot use their natural abilities to escape.

Section III: The policy context

IUCN’s formal recognition that the ethical and sustainable use of wildlife can form an integral

¹ See: IUCN Position Statement on Translocation of Living Organisms (<http://www.iucnssc.org/download/IUCNPositionStatement.pdf>) and IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species (http://intranet.iucn.org/webfiles/doc/SSC/SSCwebsite/Policy_statements/IUCN_Guidelines_for_the_Prevention_of_Biodiversity_Loss_caused_by_Alien_Invasive_Species.pdf)

and legitimate component of conservation programs dates back to the World Conservation Strategy in 1980, and was affirmed in Recommendation 18.24 at the 1990 IUCN General Assembly in Perth. IUCN's "Policy Statement on Sustainable Use of Wild Living Resources", adopted as Resolution 2.29 at the IUCN World Conservation Congress in Amman in October 2000, affirms that use of wildlife, if sustainable, can be consistent with and contribute to biodiversity conservation. IUCN recognizes that where an economic value can be attached to a wild living resource, perverse incentives removed, and costs and benefits internalized, favourable conditions can be created for investment in the conservation and the sustainable use of the resource, thus reducing the risk of resource degradation, depletion, and habitat conversion. In managing such use to enhance sustainability, the Policy Statement draws attention to the following key considerations:

- the need for adaptive management, incorporating monitoring and the ability to modify management to take account of risk and uncertainty;
- the supply of biological products and ecological services available for use is limited by intrinsic biological characteristics of both species and ecosystems, including productivity, resilience, and stability, which themselves are subject to extrinsic environmental change;
- institutional structures of management and control require both positive incentives and negative sanctions, good governance, and implementation at an appropriate scale. Such structures should include participation of relevant stake-holders and take account of land tenure, access rights, regulatory systems, traditional knowledge, and customary law.

More specifically, and with particular reference to southern Africa, IUCN has recognized that recreational hunting can contribute to biodiversity conservation. The IUCN at the 2004 WCC adopted Recommendation 3.093 stating that it "Supports the philosophy and practice that on state, communal and privately-owned land in southern Africa the sustainable and well-managed consumptive use of wildlife makes a contribution to biodiversity conservation" and further, that it "accepts that well-managed recreational hunting has a role in the managed sustainable consumptive use of wildlife populations".

Further, the IUCN SSC Caprinae Specialist Group adopted a formal position statement in December, 2000, recognizing that hunting, and in particular trophy hunting, can form a major component in conservation programmes for wild sheep and goats. This statement noted that "Trophy hunting usually generates substantial funds that could be used for conservation activities such as habitat protection, population monitoring, law enforcement, research, or management programs. Equally importantly, the revenues from trophy hunting can provide a strong incentive for conservation or habitat protection..."

The Convention on Biological Diversity has developed several statements of principles relevant for the management of trophy hunting. Most importantly, the 7th Conference of Parties to the CBD (Kuala Lumpur, February 2004) adopted the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (AAPG), and IUCN members party to the CBD were urged to honour these commitments by Resolution 3.074 of the 3rd IUCN World Conservation Congress (Bangkok, October 2004). The AAPG are based on the assumption that it is possible to use biodiversity in a manner in which ecological processes, species, and genetic variability remain above the thresholds needed for long term viability, and that all resource managers and users have the responsibility to ensure that such use does not exceed these. Some key relevant principles from the Addis Ababa Principles and Guidance include:

- Recognizing the need for a governing framework consistent with international/national laws, local users of biodiversity components should be sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned (Principle 2);
- Adaptive management should be practiced, based on:

- Science and traditional and local knowledge;
 - Iterative, timely and transparent feedback derived from monitoring the use, environmental and socio-economic impacts, and the status of the resource being used; and
 - Adjusting management based on timely feedback from the monitoring procedures (Principle 4)
 - Sustainable use management goals and practices should avoid or minimize adverse impacts on ecosystem services, structure, and functions as well as other components of ecosystems (Principle 5);
 - An interdisciplinary, participatory approach should be applied at the appropriate levels of management and governance related to the use (Principle 9);
 - Users of biodiversity should seek to minimize waste and adverse environmental impact, and optimize benefits from uses (Principle 11);
- 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 (Principle 13).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) provides for the authorization of trade of trophies in certain specimens of Appendix I-listed taxa for personal use (Res. Conf. 2.11 (rev. CoP 9)). CITES has adopted a series of Resolutions for certain Appendix I-listed species subject to trophy hunting (Res. Conf 10.14 (rev. CoP 14) on Leopard *Panthera pardus*; Res. Conf 10.15 (rev. CoP 14) on Markhor *Capra falconeri*; and Res. Conf 13.5 (rev. CoP 14) on Black Rhinoceros *Diceros bicornis*), which set out quotas and conditions for such trade.

The European Charter on Hunting and Biodiversity (ECHB), adopted under the European Bern Convention, provides specific guidance on hunting and conservation. In Resolution 4.026, adopted at the 4th World Conservation Congress Barcelona, October 2008), IUCN requested that its members promote the ECHB in the implementation of IUCN's policies and Programme for 2009-2012. While the ECHB explicitly addresses sustainable hunting in Europe, its principles and guidelines are relevant and pertinent in a wider geographic context. Key principles of the ECHB include:

- ensuring that harvest is ecologically sustainable (Principle 3);
- maintaining wild populations of indigenous species with adaptive gene pools (Principle 4);
- maintaining environments that support healthy and robust populations of harvestable species (Principle 5);
- encouraging use to provide economic incentives for conservation (Principle 6); and
- empowering local stakeholders and holding them accountable (Principle 9).

Section IV. Trophy hunting and conservation

Trophy hunting is a form of wildlife use that, when well managed, may assist in furthering conservation objectives by creating the revenue and economic incentives for the management and conservation of the target species and its habitat, as well as supporting local livelihoods. However, if poorly managed, it can fail to deliver these benefits. Although a wide variety of species (many of which are both common and secure) are hunted for trophies, some species that are rare or threatened may be included in trophy hunting as part of site-specific conservation strategies. Examples include Cheetah *Acinonyx jubatus* and Black Rhinoceros in southern Africa, and Straight-Horned Markhor *Capra falconeri megaceros* in the Torghar Valley of Pakistan, all of which are species listed on Appendix I of CITES.

Trophy hunting takes place in both North America and Europe, and in developing countries where wildlife management infrastructure is often less fully developed. These hunts are usually conducted by persons willing and able to pay substantial amounts of money for the opportunity. They typically involve taking small numbers of individual animals and require limited development infrastructure. They are thus high in value but low in impact. In some cases, trophy hunting forms an important component of Community-Based Conservation/Community-Based Natural Resource Management, which aim to devolve responsibility for the sustainable use and management of wildlife resources from distant bureaucracies to more local levels.

Understanding the context within which trophy hunting occurs is critical to understanding its potential to benefit conservation. In many parts of the world, much wildlife exists outside of protected areas. Wildlife shares landscapes with people, and typically competes for space and environmental resources with other forms of economically productive land uses, such as agriculture and pastoralism, upon which the livelihoods of local people depend. Wildlife can impose serious costs on local people, including physical harm, damaging crops, and competing with livestock for forage. Where wildlife provides few benefits to local people and/or imposes substantial costs, it is often killed (legally or illegally) for food, various commercially valuable wildlife products, or as problem animals, and its habitats are degraded or lost to other forms of land use. In some circumstances trophy hunting can address this problem by effectively making wildlife more valuable than, and/or complementary to, other forms of land use. It can return benefits to local people (preferably through effective co-management), encouraging their support for wildlife, and motivating investment at community, private, and government levels for research, monitoring, habitat protection, and enforcement against illegal use (see Annex 1 for examples). Trophy hunting, if well managed, is often a higher value, lower impact land use than alternatives such as agriculture or tourism.

However, where poorly managed, trophy hunting can have negative ecological impacts including altered age/sex structures, social disruption, deleterious genetic effects, and in extreme cases, population declines. It can also be difficult to ensure that benefits from hunting accrue to those in the best position to help conservation.

Section V: The Guiding Principles

The IUCN SSC considers that trophy hunting, as described in Section II above, is likely to contribute to conservation and to the equitable sharing of the benefits of use of natural resources when programmes incorporate the following five components: Biological Sustainability; Net Conservation Benefit; Socio-Economic-Cultural Benefit; Adaptive Management: Planning, Monitoring, and Reporting; and Accountable and Effective Governance

Biological Sustainability

Trophy hunting as described in Section II, can serve as a conservation tool when it:

1. Does not contribute to long-term population declines of the hunted species or of other species sharing its habitat, noting that a sustainably harvested population may be smaller than an unharvested one;
2. Does not substantially alter processes of natural selection and ecosystem function; that is, it maintains “wild populations of indigenous species with adaptive gene pools.”² This generally requires that hunting offtake produces only minor alterations to naturally occurring demographic structure. It also requires avoidance of breeding or culling to deliberately enhance population-genetic characteristics of species subject to hunting that are inconsistent with natural selection;
3. Does not inadvertently facilitate poaching or illegal trade of wildlife;

² Direct quote from principle 4 of the European Charter on Hunting and Biodiversity.

4. Does not artificially and/or substantially manipulate ecosystems or their component elements in ways that are incompatible with the objective of supporting the full range of native biodiversity.

Net Conservation Benefit

Trophy hunting can serve as a conservation tool when it:

1. Is linked to identifiable and specific parcels of land where habitat for wildlife is a priority (albeit not necessarily the sole priority or only legitimate use); and on which the “costs of management and conservation of biological diversity [are] internalized within the area of management and reflected in the distribution of the benefits from the use”³;

2. Produces income, employment, and/or other benefits that generate incentives for reduction in pressures on populations of target species, and/or help justify retention, enhancement, or rehabilitation of habitats in which native biodiversity is prioritized. Benefits may create incentives for local residents to co-exist with such problematic species as large carnivores, herbivores competing for grazing, or animals considered to be dangerous or a threat to the welfare of humans and their personal property;

3. Is part of a legally recognized governance system that supports conservation adequately and of a system of implementation and enforcement capable of achieving these governance objectives.

Socio-Economic-Cultural Benefit

Trophy hunting can serve as a conservation tool when it:

1. Respects local cultural values and practices (where “local” is defined as sharing living space with the focal wildlife species), and is accepted by (and preferably, co-managed and actively supported by) most members of the local community on whose land it occurs;

2. Involves and benefits local residents in an equitable manner, and in ways that meet their priorities;

3. Adopts business practices that promote long-term economic sustainability.

Adaptive Management: Planning, Monitoring, and Reporting

Trophy hunting can serve as a conservation tool when it:

1. Is premised on appropriate resource assessments and/or monitoring of hunting indices, upon which specific quotas and hunting plans can be established through a collaborative process. Optimally, such a process should (where relevant) include local communities and draw on local/indigenous knowledge. Such resource assessments (examples might include counts or indices of population performance such as sighting frequencies, spoor counts) or hunting indices (examples might include trophy size, animal age, hunting success rates and catch per hunting effort) are objective, well documented, and use the best science and technology feasible and appropriate given the circumstances and available resources;

2. Involves adaptive management of hunting quotas and plans in line with results of resource assessments and/or monitoring of indices, ensuring quotas are adjusted in line with changes in the resource base (caused by ecological changes, weather patterns, or anthropogenic impacts, including hunting offtake);

3. Is based on laws, regulations, and quotas (preferably established with local input) that are transparent and clear, and are periodically reviewed and updated;

4. Monitors hunting activities to verify that quotas and sex/age restrictions of harvested animals are being met;

5. Produces reliable and periodic documentation of its biological sustainability and conservation benefits (if this is not already produced by existing reporting mechanisms).

Accountable and Effective Governance

A trophy hunting programme can serve as a conservation tool when it:

1. Is subject to a governance structure that clearly allocates management responsibilities;
2. Accounts for revenues in a transparent manner and distributes net revenues to conservation and community beneficiaries according to properly agreed decisions;
3. Takes all necessary steps to eliminate corruption; and
4. Ensures compliance with all relevant national and international requirements and regulations by relevant bodies such as administrators, regulators and hunters.

Section VI: Appropriate use of these guiding principles

SSC's intention is that these guiding principles may serve to assist authorities responsible for national and subnational policy, law and planning; managers responsible at the site level; and local communities in designing and implementing trophy hunting programs where biodiversity conservation and equitable sharing of natural resources are objectives.

These guiding principles should not be interpreted as in any way dismissing the values – whether they are biological, social, cultural or economic – of hunting programs that may be truly sustainable, but that do not produce incentives for conservation and associated conservation benefits.

Although IUCN and SSC are not currently engaged in endorsing or certifying trophy hunting programmes, they consider that for any such endorsement or certification to be credible, it should be conducted by a recognized independent body. Nothing in this document is intended to be interpreted in any way as a specific endorsement or criticism of a particular trophy hunting programme.

Annex 1. Examples of trophy hunting as part of a conservation strategy

Note: Due to the varied potential conservation impacts of trophy hunting it is useful to provide a small set of illustrative case studies highlighting both positive and negative conservation impacts. We have here included two illustrations of generally positive conservation impacts. We would welcome suggestions for further examples, both positive and negative, noting that in the case of negative examples we are sensitive to not casting blame or criticizing member groups and member states.

Case study 1: Trophy hunting in Namibian communal Conservancies

Namibia's communal Conservancy programme is widely viewed as a conservation and rural development success story, and trophy hunting plays a central role in this success. Innovative legislative reforms in the mid-1990s devolved conditional rights to use and manage wildlife on communal lands to communities, if they organized to form a Conservancy. The intent of this approach was to devolve rights and benefits from wildlife to communities – people often viewed by colonial conservationists as “poachers” - to create incentives for communities to live with, value, and benefit from wildlife. Forming a Conservancy requires that the community defines its membership, borders, and management committee; develops a Constitution; agrees a method for equitable distribution of benefits; and develops a sustainable game management and utilization plan. Conservancies can use wildlife consumptively in various ways, including trophy hunting, own-use hunting game cropping, and live sales; and organize nonconsumptive use through tourism. Conservancies retain all the revenue gained from utilization and management.

The spread of the conservancy movement has been rapid, and conservation impacts extensive and widespread. Today there are 71 registered communal Conservancies covering 14.98 million ha (with another 20 conservancies under development) and include around 240 000 members. Current communal Conservancies alone mean that 18.2% of Namibia's land surface is under conservation management. This is a contrast from the previous status of these areas as subject to long-term human-wildlife conflict, uncontrolled poaching, and low levels of wildlife.

Sustainable use of wildlife has been a strong catalyst to the recovery of wildlife in communal areas. Prior to the introduction of conservancies, wildlife in Namibia's communal areas had been decimated and was at historic lows in many instances. Wildlife was perceived by communities mainly as a threat to livelihoods, with its best use being illegal poaching for meat for the pot. The advent of Conservancies drastically altered this attitude. Wildlife is now increasingly seen as a valued asset, with growing wildlife populations meaning more income for conservancies, more jobs for conservancy members, more game meat at the household level, and more funds to support rural development. As a result, poaching has become socially unacceptable and game numbers have staged remarkable recoveries in most areas where Conservancies have operated for a period of time. For instance, on communal lands in northeast Namibia, from 1994 to 2011, elephant have increased from 12,908 to an estimated 16,993; sable from 724 to an estimated 1,474; and common impala from 439 to 9,374. In northwest Namibia⁴, from the early 1980s to today, desert elephants have increased from approx. 150 to approx. 750; Hartmann's Mountain Zebra from est. <1,000 to > 27,000; and black rhino have more than tripled, making it the biggest free-roaming population of rhino in the world. From 1995, the population of lion in this area has increased from an est. 20 to an est. 130, with exponential range expansion. Game populations have been re-established in Conservancies that have low densities of specific species or species that have gone locally extinct. This support has allowed for the re-establishment of a large number of species, including giraffe, red hartebeest, black faced impala and black rhino. Further, Conservancies, a large proportion of which are located adjacent or

⁴ Game guard programs, precursors of the current model, were introduced in this area in the early 1980s.

close to protected areas, strengthen Namibia's protected area system by ensuring wildlife friendly environments adjacent to protected areas and through the creation of movement corridors between them.

Trophy hunting has been a central driver of this transformation. It is by far the largest generator of benefits from sustainable consumptive wildlife use, with 41 Conservancies hosting 40 trophy hunting concessions during 2011. Since registration of the first four communal conservancies in 1998, a total of 97 948 km² have been opened to trophy hunting concessions under community management. Benefits from consumptive use of wildlife (cash, employment, and in-kind [largely meat]) received by Conservancies and their members from 1998-2009 amounted to N\$76.5 million (US\$10.17 million) (NACSO Database, 2011). As the benefits from consumptive use have driven recovery of wildlife populations through reduction of poaching, these recoveries have in turn paved the way for non-consumptive tourism, more than doubling the returns from wildlife to communities. In 2011 more than 30 joint venture tourism lodges and 24 community campsites were functioning in communal Conservancies, generating Conservancy benefits (including cash, employment and in-kind benefits) of N\$102.8 million (US\$13.64 million) from 1998-2009. Tourism enterprises have proven to be strong, complementary additions to consumptive use options, with consumptive use (primarily trophy hunting) generating the majority of cash income to Conservancies (which can be put toward wildlife management activities and community development purposes), and tourism operations providing the greater individual employment benefits to Conservancy members. Benefits from consumptive use are critical because these can start to flow when wildlife populations are initially too low to support tourism, stimulating recoveries of wildlife to levels at which photographic tourism can become viable.

Community development activities paid for by benefit streams from sustainable use, among others, include improvements to schools or school facilities and equipment; improvements to rural health clinics; support to pensioners; scholarship funds; transport for the sick or injured; mitigation of human / wildlife conflict; and sponsoring of community sports teams. Finally, the hunting operations provide meat to community members (many very marginalized): meat provided from trophy hunting and own-use harvesting was valued at N\$17,413,120 (US\$2.29 million) between 1998 and 2009⁵ (NACSO, 2010).

A number of cutting edge tools and practices have been developed by the Namibia CBNRM Programme to ensure sustainable hunting is playing a key conservation role, including:

- annual quota setting procedures for sustainable harvest offtake rates: jointly carried out by the MET, NGOs, and the Conservancies, and based upon annual game counts, hunting operator reports, and local knowledge of conservancy/MET/NGO staff;
- trophy hunting tender procedures for Conservancy hunting concessions: these aim to attain market values for game in a transparent manner, and strengthen relationships between the Conservancy committee and the hunting operator;
- trophy hunting contracts: through the Conservancy movement communities have been empowered to become meaningful partners in the development and support of hunting activities, although many remain on a steep learning curve; and
- Conservancy management plans and practices: funds generated from wildlife use are used by conservancies to employ community game guards and implement game management and monitoring systems, allowing communities to proactively counter poaching threats and mitigate increasing incidents of human/wildlife conflict.

Sources:

⁵ The value of distributed meat is calculated by using market values and average meat yields of game animals from which the meat was distributed, as recorded by conservancies in the Event Book.

NACSO. 2010. Namibia's communal conservancies: a review of progress 2009. NACSO, Windhoek, Namibia

Naidoo, R., Weaver, L. C., Stuart-Hill, G. & Tagg, J. (2011). Effect of biodiversity on economic benefits from communal lands in Namibia. *Journal of Applied Ecology* 48: 310-316.

Weaver, C., Hamunyela, E., Diggle, R., Matongo, G. & Pietersen T. (2011). The catalytic role and contributions of sustainable wildlife use to the Namibia CBNRM programme. In: Abensperg-Traun, M., Roe, D. & O'Criodain, C. eds. (2011). *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"*, Vienna, Austria, 18-20 May 2011. IUCN and London, Gland, Switzerland & IIED, UK. Pp. 59-70

Case study 2: Conservation and trophy hunting in the Torghar Valley, Pakistan

Torghar (black mountains/hills in Pushtoo) is in the province of Balochistan in Pakistan. In the early 1980s, wild Straight-horned Markhor *Capra falconeri megaceros* and Afghan Urial *Ovis orientalis* were close to being extirpated from this region due to uncontrolled hunting and competition for grazing with domestic herds. Enforcement efforts against hunting were poor due to weak institutional capacity and lack of political will. In the mid-1980s, a tribal decree banning hunting was issued by a local leader, but could not be enforced. Local Jazalai (a Pathan tribe) leaders, with support from the United States Fish and Wildlife Service (USFWS), launched a community-based conservation programme in 1986, the Torghar Conservation Project (later managed by STEP, the Society for Torghar Environmental Protection). This project used limited and monitored trophy hunting, initially of Urial only and later also of Markhor, to provide revenue to fund the employment of local people as game guards and to provide community benefits. The hypothesis was that development of local livelihoods based on trophy hunting would change the attitude of local people toward wildlife, demonstrating that conservation could be an economically viable land use, and providing incentives for enforcement. In line with its commitment to conservation, the trophy hunting has been conservative, with 1-2 Markhor and 1-4 Urial taken per year.

After careful consideration, tribesmen accepted a ban on their traditional hunting in return for the economic benefits of the conservation programme. Illegal hunting virtually ceased. While exact population numbers cannot be ascertained in the difficult terrain, use of repeated standardized survey protocols have found that the Torghar populations of Markhor and Urial have steadily increased since the project started. Surveys at Torghar by USFWS-sponsored biologists found the estimated population of Markhor grew from less than 100 in 1990 to 2,541 in 2005, with estimated Urial populations increasing from 1173 in 1994 to 3,146 in 2005.

Over this period, the programme has continually faced a lack of regulatory support, including government reluctance to recognize local involvement in conservation, bans on hunting imposed by the national Conservation Council, and the listing of Markhor on Appendix I of CITES, making export of trophies to major market countries such as the United States problematic. Despite these obstacles the programme has grown, attracting further support from the United Nations Development Programme, WWF-Pakistan, the Global Environment Facility and others. While other means of raising revenue such as ecotourism based on photography have been considered, the region is remote and attracts few visitors.

TCP/STEP has also generated considerable benefits for the approx. 400 families of the local area. Revenues raised by trophy hunting and donor grants pay salaries for ca. 82 game guards, and have been used for community needs such as construction of water tanks, dams and irrigation channels (to provide water during droughts), supply of young fruit trees, a medical camp and emergency drought relief.

Sources:

Frisina, M. & Tareen, S.N. (2009). Exploitation prevents extinction: Case study of endangered Himalayan sheep and goats. In: *Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice* (eds. B. Dickson, J. Hutton & W.M. Adams). 1st edition, Wiley-Blackwell, Oxford, UK. pp. 141-156.

Rosser, A.M., Tareen, N & Leader-Williams, N. (2005) Trophy hunting and the precautionary principle: a case study of the Torghar Hills population of straight-horned markhor. In: *Biodiversity and the Precautionary Principle: risk and uncertainty in conservation and sustainable use* (eds. R Cooney and B Dickson). Earthscan, London. pp. 55-72.

Valdez, R. 2008. *Capra falconeri*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. <www.iucnredlist.org>. Downloaded on 27 March 2012.

Woodford M.H., Frisina M.R. & Awan G.A. (2004) The Torghar Conservation Project: Management of the Livestock, Suleiman Markhor (*Capra falconeri*) and Afghan Urial (*Ovis orientalis*) in the Torghar Hills, Pakistan. *Game and Wildlife Science* 21: 177-187.