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Man, Mountain and the Markhor

A Case Study of the

Torghar Biodiversity Conservation Project of The Society for Torghar Environmental Protection

in The Torghar Mountain of Qila Saifullah, Balochistan

Final Report

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List of Abbreviations

BAP	Biodiversity Action Plan
BCS	Balochistan Conservation Strategy
CWM	Community Based Wildlife Management
CITES	Convention on International Trade in Endangered Species
COP	Conference of the Parties
GEF	Global Environment Facility
MACP	Mountain Areas Conservancy Project
NCS	National Conservation Strategy
NCCW	National Council for the Conservation of Wildlife
STEP	Society for Torghar Environment Protection
SSC	Species Survival Commission
SUI	Sustainable Use Initiatives
SUSG-CAsia	Sustainable Use Specialist Group – Central Asia
TCP	Torghar Conservation Project
UNDP	United Nations Development Programme
WWF	World Wide Fund for Nature

Executive Summary

Biodiversity refers to the sum total of all life forms on planet earth. Wildlife provides the basis for subsistence livelihood and extinction and loss of wild mammals, fish, birds and reptiles is presenting increasing food insecurity. Community based wildlife management (CWM) is defined as the regulated use of wildlife populations and ecosystems by local stakeholders. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was negotiated and entered into force on 1 July 1975 to regulate international trade in endangered animals and plants and their commercial derivatives.

Torghar, a range of sandstone mountains near Qilla Saifullah in Balochistan, is acknowledged for its locally managed wildlife conservation project that has gone beyond its immediate objective of wildlife protection to holistic development. It is located at a four hours drive from Qilla Saifullah Town, Balochistan and lies within the north-eastern part of the Toba Kakar mountainous range in district Qila Saifullah. This is a semi-arid mountainous area and has an altitude of about 8,700 feet above sea level. Torghar is inhabited by the Pushtuns of the Kakar tribe and the Jalalzai sub-tribe. The traditional tribes settled in the mountain have indulged in indiscriminate killing of the markhors and urial for not only consumption but also mere entertainment for many years.

The Torghar Conservation Project (TCP) was conceived by Professor Barth O'Gara of the Montana University, USA and Doctor Richard Mithchells of the US Fish and Wildlife Service. It was implemented by Sardar Naseer A. Tareen and Nawabzada Mehboob Jogezai in 1985. The projects immediate focus was to ban all hunting activities in the area with the help of locally hired game guards. Hunting was allowed later on after a few years and that too only under the rules and conditions set down by the communities. The Society for Torghar Environment Protection (STEP) was registered as an NGO in 1994. Around 1995 STEP initiated the Torghar biodiversity conservation and sustainable use programme under support, US$ 41,854 from the Global Environment Facility (GEF)/Small Grants Programme (SGP) of the United Nations Development Programme (UNDP). The programme eventually expanded from wildlife protection to an integrated conservation and development programme. Local tribesmen were hired as paid game watchers to protect the area against poachers. The programme now accommodates 62 tribesmen appointed as game guards. The most recently conducted third survey in 1999 records the population of markhor and urial to be 1,684 and 1,742, respectively.

The project interventions under GEF funding include the construction of a dam for storage of water, water tanks, irrigation channel, retaining walls, agricultural activities including building of terraces for orchards, supply of fruit and fuel saplings. The establishment of a nursery, repair and construction of dirt roads, medical assistance and supply of medicines was also planned. The trophy fee for the straight horned markhor and the urial is fixed at US$ 25,000 and US$ 15,000 respectively. Twenty percent against each hunt goes to the government as a fixed fee and eight percent to the community.

The project was initiated with the support of the tribal elders but the project faced initial problems in getting the entire community on board, understanding the intricate web of relationship amongst the tribes and sub tribes and their power and governance structure. The allocation of jobs, rights

and responsibilities was also an important decision and one that took constant consideration and attention. A few that were made at the start include the *ad hoc* recruitment for game guards and site selection. One of the fundamental lessons learned during the course of the project and incorporated was the shift in the project approach from an individualistic and centralised one to that of a holistic and broad based community participatory model. Another lesson learnt was that establishment of a direct or indirect link between any conservation or development programme with economic incentives or other tangible benefits is imperative for success and programme sustainability.

The project has relied upon local practices and management ways to the extent possible. The traditional rules and regulations that had been established for equity and resource sharing, allotments, allocation of rights and responsibilities for water, land holding, grazing rights, range lands, wildlife and forests, were taken as one the most important foundations by the project for all decision making and was therefore agreed to and respected by all. The benefit of retaining a sharp focus on objectives is that by now the communities understand that their welfare and prosperity is dependent on the protection and planned use of their most valuable asset—the markhor and urial. STEP is making all efforts to make the programme sustainable even in the absence of a permanent support mechanism.

STEP has recently initiated a process that is expected to define certain parameters for institutionalising the practice of conservation and creating a permanent system for the management and development of common resources. One of the options that is being envisaged under the future plans is the idea of creating tribal committees in Torghar that will lay down the foundations for a permanent governance mechanism. The communities are now also ready for a more advanced and focused programme and are eagerly awaiting the new rules and regulations.

The project has remained as flexible as possible under the local conditions to changing needs and concerns on the ground. STEP is considering the creation of an endowment fund for making the programme sustainable. The project has potential for replication, especially within tribal set ups, but subject to changes and modifications made in view of local conditions and ground realities. One common aspect that can be replicated in other projects is the approach towards community planning and participation. The overall plan for the community based trophy hunting is efficient since it takes into account all potentially viable options open to a conservation programme of this kind. The only potential alternative for viable non-consumptive uses of the markhor and urial population could be ecotourism. The recommendations put forth in the latest survey report states that a sustainable annual trophy harvest for markhor and urial could be up to 18 and 17 respectively. STEP does not exceed culling of two markhors and five urials in a year.

The completed UNDP project targets include a completed dam at Khaisore valley, seven completed water storage tanks and two under construction at Natu and Tublai, two retaining walls at Tanishpa, completion of 250 meters irrigation channel and cleaning of springs at Savidarga and Khand, utilisation of 50 percent of tractor hours for orchards, 500 almonds and 100 apple saplings supplied, repair of old dirt road from Khaisore cross to Tanishpa and construction of a new road from Kundra to Torghberg constructed. The most immediate and visible impact of the project interventions in the area is the increased population of Suleman markhor and Afghan urial and the protection of other biodiversity in general. Other positive impact includes increased local sensitivity towards environmental issues, job opportunities and income generation, improved access and increased mobility of the people.

1. Biodiversity: Benefits, Threats and Management

1.1 Overview of Biodiversity Issues

Biodiversity refers to the sum total of all life forms on planet earth. Biological diversity is a varied and versatile collection of all types and species of plants, animals, micro-organisms, ecosystems contained therein and genetic material composition. The Convention on Biological Diversity defines it as *the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems*[1].

The ecological "products and services" produced from biodiversity and biological processes are many and provide services and benefits to us in countless ways, e.g. oxygen production, water purification, pollination, symbiosis, water filtration, predation, nutrient recycling, soil formation etc. All major resource consumptive industries including agriculture, textile, pharmaceuticals, ecotourism etc. depend heavily upon this biodiversity.

Many underlying and direct causes and external pressures including war and civil unrest, poverty and search for employment and increased demand for natural produce, insecure land use/tenure rights, introduction of modern technology or ignorance of indigenous knowledge regarding resource use can lead to unsustainable natural resource use and ultimately biodiversity loss. The loss of biodiversity is irreparable and according to modern scientific research the rate of this loss today is unprecedented in human history. It is predicted that at the current rate of extinction, the earth will lose about 20 percent of its living species by the year 2020[2]. Other than time and natural catastrophes, a great part of this loss is attributable to human population growth, migratory trends and use of natural resources which brings about changes in ecosystem functions and compositions; extinction of bird and animal species, fragmentation and desertification, erosion of soil and grasslands, water loss, over-exploitation of living resources and pollution are some of the more visible effects that are observed at the local and international scales. Loss in genetic biodiversity (genetic variations in plants and animals) is another aspect which has tremendous value in biotechnological processes and an irreplaceable product from millions of years of adaptive evolution.

Wildlife provides the basis for subsistence livelihood. The extinction and loss of wild mammals and birds is presenting increasing food insecurity to the poor who do not have the capacity to buy or rear them. Degradation and fragmentation of habitats, wildlife tourism, sport hunting and trapping of animals has put many of the wild species on the verge of extinction; their vulnerability is increased due to a common resource at the risk of unregulated and unsustainable harvesting. The trend of protectionist polices concerning wildlife and the exclusion of local people from wildlife harvesting has also resulted in unsustainable resource use. Moreover, issues of competition and

[1] The information contained in the section has been extracted and/or quoted from "Biodiversity & the Global Crisis." 2000. www.bionet-us.org

[2] The information contained in the section has been extracted and/or quoted from "Biodiversity & the Global Crisis." 2000. www.bionet-us.org

conflicts between wild and domestic stocks and human populations have not been addressed in planning procedures[1].

Among the conservation programmes and practices that have been adopted in Pakistan and elsewhere, the community managed conservation approach has been effective. Community based wildlife management (CWM) is defined as the regulated use of wildlife populations and ecosystems by local stakeholders. Benefits can include the sale of products and sale/leasing of hunting rights. Factors that favour CWM largely concern the nature of wildlife assets (clear boundaries, relative scarcity, substantial value, proximity to communities, predictability and ease of monitoring), but factors such as clear tenure rights, and the capacity of the communities to undertake the necessary managerial roles are also crucial to success. Access to finances, markets, infrastructure and information is also vital. However, the costs of CWM, such as labour inputs and investments, or the opportunity costs of not using the land for other purposes, can offset any such benefits. Furthermore, commercial interests tend to capture the benefits over local communities, so there is a need to assess who bears the costs of CWM, who benefits and whether the communities involved perceive their benefits outweigh costs[2].

With globalisation the scale of international trade in wild plant and animal species has increased dramatically in the later part of the twentieth century. As a result, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was negotiated and entered into force on 1 July 1975 to regulate international trade in endangered animals and plants and their commercial derivatives. It establishes the necessary legal framework for the effective prevention or regulation of trade through national laws (a system of permits and certificates)[3]. The species subject to different regulations are listed in three appendices: *appendix I includes species threatened with extinction; appendix II refers to those not necessarily threatened with extinction but may become so unless trade is strictly regulated; and appendix III species are those which any Party identifies as being subject to regulation within its own jurisdiction, and for which the co-operation of other Parties is needed to prevent or restrict their exploitation.* The Conference of the Parties (COP) recommends that the Parties promote incentives to secure the support and cooperation of local and rural communities in managing wildlife resources and thereby combating illegal trade. The Convention on Biological Diversity, Earth Summit in Rio de Janeiro, has been ratified by over 175 countries and is the first international agreement that commits the countries to ensure comprehensive protection of the earth's biological resources.

1.2 The Risks to Biodiversity

Currently only 11.4 percent of the total area of Pakistan comes under the purview of Protected Areas management.[4] Many fragile ecosystems and endangered habitats remain excluded, of which the Torghar hills are one example. These mountains, once with abundant wildlife, vegetation and other natural endowments, have now been stripped of most of their natural resources due to unregulated use, drought and other factors. Pakistan has also been facing extreme drought

1 EU, DFID and IUCN. "Biodiversity – what is it, and why is it being lost?" Biodiversity in Development, Biodiversity Brief 19.

2 EU, DFID and IUCN. "Wildlife and Biodiversity." Biodiversity in Development. Biodiversity Brief 14.

3 EU, DFID and IUCN. "CITES and Wildlife Trade." Biodiversity in Development. Biodiversity Brief 20.

4 Shackelton, D.M. January 2001. "A Review of Community-Based Trophy Hunting Programs in Pakistan." Chair IUCN/SSC Caprinae Specialist Group.

conditions for the last three-to-four years. Parts of Sindh province and many areas in Balochistan have been ravaged by this natural calamity. The government has only recently publicly acknowledged the devastation caused in Balochistan and declared it a matter of national crisis. Torghar—a range of sandstone mountains near Qilla Saifullah in Balochistan—is one example of an area that has come under the folds of the persistent drought. But Torghar needs to be acknowledged not only because the natural resources have been affected by the drought but because of a "success story" that the people here want to share with the world. This story relates to a locally (community) managed wildlife conservation project that has gone beyond its immediate objective of conservation to holistic development and resource conservation.

They mountains are famous for their large populations of Suleman markhor and Afghan urial, but indiscriminate hunting during the Afghan War reduced the populations of markhor, urial, Sindh ibex, leopard and black bears, bringing them on the verge of extinction. Biologically, the markhor is classified into two main types, namely, the straight-horned and the flared-horn markhor, both of which are found predominantly in Pakistan. The Suleman markhor (*Capra falconeri jerdoni*) and the Afghan urial (*Ovis orientalis cycloceros*) are listed in the Third Schedule of the Balochistan Wildlife Protection Act of 1974 as animals to be hunted only under specific circumstances. The Suleman markhor is listed as endangered under the US Endangered Species Act (ESA) and in the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora (Shackelton 2001). The IUCN Red Data Book also lists the markhor as an endangered species.

1.3 Early History of the STEP Initiative

The main catalyst in triggering off an investigation of the Torghar hills that subsequently lead to the initiation of the Torghar Conservation Project (TCP) was the apparently complete absence of straight-horned markhor in the area, contrary to the claims made by the government. The idea was conceived by Professor Barth O'Gara of the Montana University, USA and Doctor Richard Mithchells, US Fish and Wildlife Service. It was brought to life by Sardar Naseer A. Tareen and Nawabzada Mehboob Jogezai in 1985. Sardar Tareen was at the time involved in a filming expedition; a wildlife documentary that he was making for the government of Balochistan, in particular, of the wild ungulates the Suleman markhor and Afghan urial. It was during this time that the observations of these protagonists recorded a complete absence of the wildlife that the hills were supposedly famous for.

The late Nawab Taimur Shah Jogezai and his son Nawabzada Mahboob Jogezai provided the impetus for the projects initiation. The project started as a race against time in an attempt to preserve and conserve the rapidly declining wildlife in the mountain. The projects immediate focus was to ban all hunting activities in the area with the help of locally hired game guards. Hunting was allowed later on after a few years and that too only under the rules and conditions set down by the communities. Thus trophy hunting of the Afghan urial was allowed on a limited scale against a fixed fee and open to all who were interested in paying for the hunt.

In order to conserve efforts and lend them more credibility and sustainability the individuals behind TCP got together and organised the Society for Torghar Environment Protection (STEP). It was registered as an NGO in 1994 under the Balochistan Small Industries Act, 1860. A STEP Council was formed right form the start on the principle of having direct community representation of all

sub-tribal groups in Torghar. The programme eventually expanded from wildlife protection to an integrated conservation and development programme.

A slow and gradual process of discussion and consultation started with the communities with a view to explaining the necessity of protecting the animal and creating acceptability among the tribal community for taking this initiative. The people were illiterate and completely ignorant of the economic value of the animal and the concept of conservation so the first and most important task was to motivate them to stop the indiscriminate killing of the animals. This was achieved by relating this initiative to economic benefits and inculcating a sense of responsibility and ownership towards the local resources available to the people. The communities prioritised lack of income generation opportunities, scarcity of water and lack of basic social services (health, education) as their foremost problems. They, however, opposed the idea of any interference from the government.

Experts from the US Fish and Wild Life Service visited the area in early 1984 and recommended a locally manageable plan to the tribal communities for the conservation of their wildlife. As a starting point, local tribesmen were hired as paid game watchers to protect the area against poachers. The programme now accommodates 62 tribesmen appointed as game guards. The first financial assistance for the TCP came from Bob Chisholm, the founder of the Pizza Hut chain, who provided a loan of US$ 10,000 (divided equally between cash and equipment) that was used to finance the game guards programme. The loan was repaid to him in kind by STEP that facilitated a free hunt for him a few years later. STEP's financial sustainability was also strengthened through a US$ 10,000 funding from the Houbara Foundation.

Around 1995 STEP initiated the Torghar biodiversity conservation and sustainable use programme under support from the Global Environment Facility (GEF)/small grants programme (SGP) of the United Nations Development Programme (UNDP) with a grant amounting to US$ 41, 854. Income generating activities based on conservation and sustainable use of natural resources, water harvesting and fuel wood plantation were areas identified for co-operation. The main idea was to conserve existing resources and devise rational and equitable ways for their distribution among the communities.

The US Fish and Wildlife Service has sponsored regular surveys from 1985 onward to monitor the population of the markhor and the urial, the main focus of the conservation programme. Dr Kurt A. Johnson, Consultant, WWF International conducted a detailed survey through the US Fish and Wildlife Service, in 1994 to monitor the effectiveness of the programme. A follow up survey was conducted in 1997 by Charles Wood of the Florida Museum of Natural History, Michael Woodford, a wildlife veterinarian, and Micheal R. Frisina of the Montana Department of Fish, Wildlife and Parks. The most recently conducted third survey in 1999 records the population of markhor and urial to be 1,684 and 1,742 respectively.

The recommendations put forth in the survey report states that a sustainable annual trophy harvest for markhor and urial could be up to 18 and 17 respectively. STEP does not exceed culling of two markhors and five urials in a year. Torghar is now home to the largest population of these animals within Pakistan.

1.4 Project Rationale and Objectives

The project proposal defines some development activities to be carried out. These include the construction of a dam for storage of water, water tanks, irrigation channel, retaining walls, agricultural activities including building of terraces for orchards, supply of fruit and fuel saplings. The establishment of a nursery, repair and construction of dirt roads, medical assistance and supply of medicines was also planned. Five locations within the Torghar mountain earmarked for the implementation of these activities are Tanishpa, Tublai, Kundar, Torghberg and Khaisore.

The expected project results were that the project implementation will facilitate involvement of the community in conservation activities, create job opportunities for the community, create enthusiasm among the people of Torghar for development of local available natural resources of the betterment of their livelihood, it will infuse a new approach among the community for the rehabilitation of degraded habitats, it will encourage the community to safeguard the ecosystem biodiversity and the success of the conservation project will inspire other tribal societies of the province to initiate similar sustainable use projects in the area.

The main project objectives are defined below:

- conservation of the biodiversity (flora and fauna) of Torghar hills by sustainable use through community participation and development;
- introduction of low cost alternative of natural resources in the area in order to reduce the pressure on core area in terms of water, grazing and fuel wood utilisation;
- provision of social services such as health, and;
- mobility to create community interest towards conservation practices and promote the sustainable use of biodiversity (Afghan urial and Suleman markhor) by selective culling for trophy hunting and the expansion of agricultural activities.

The planned activities under the project are construction (cementing) of water tanks for storage purposes to increase and promote agriculture/horticulture in the area, construction of retaining walls for protection of agricultural land against erosion, dams construction for ground water recharge, provision of fruit and fuel wood trees. Other activities planned were provision of medical supply, especially for the women and poor in the area, digging and development of wells for clean water supply, road construction for increased mobility and input supply and development of lands through levelling practices. Range management and reforestation are also planned for future.

1.5 Salient Features of the Project Approach

The project has demonstrated remarkable understanding of and sensitivity towards local tribal social organisation (customs and traditions), their needs, constraints and psyche. It has been adapted according to the tribal patterns and extreme care has been taken not to tamper with and disrupt the equilibrium of the social set up.

The overall project approach underwent a major shift after the start when it was focussing on individual gains to a more holistic strategy with broad-based benefits. Instead of taking on an authoritative and educative mode, as seen in many other examples of failed projects or those with limited results, this programme as simply helped people come along in a way that suits them best.

A key factor in determining the project approach was the recognition of the tribal systems, their norms and traditions and indigenous governance mechanisms. An attempt was therefore made to exploit the positive aspects within the tribal set up. STEP has, as a rule, tried to manage things as they were and made the programme a gradual transition of practices, attitudes and institutions. It was decided that any intervention that is to be introduced in the area had to make sense to the people first and implemented only after complete acceptance had been obtained.

Based on the principles of "sustainable" and "significant" use, STEP has striven to achieve the ideals of an inclusive and equitable project and claims that the project will be considered a success only if it touches each and every family in the mountain. A major objective for STEP was ensuring equity and inclusiveness throughout project implementation. STEP views this as the only guarantee that the programme has to offer in terms of permanence and impact. The idea has been to ingrain the project ideology and conservation practice as a "habit" in the mountain people that is not only limited to this generation but finds a way of creating its acceptance long afterwards. For the project the only possible way of achieving this was to concentrate on relationship building—nurturing a strong relationship with the people and of the people with biodiversity. These efforts have resulted in a sustainable use programme of trophy hunting that does not cater to the local elite. The conservation of markhor has been the main focus for the project and all other interventions and development activities have been based around this horned animal with the objective of making the animal survive with an established economic value and worth as wildlife.

2.1 The Project Area and People

Torghar (black mountain) is located at a four hours drive from Qilla Saifullah Town, Balochistan and lies within the north-eastern part of the Toba Kakar range in district Qila Saifullah and is about 90 km long and 30 km wide. This is a semi-arid mountainous area with an average elevation of 2,400 meters (at an altitude of about 8,700 feet above sea level). The Torghar conservancy covers an approximate area of 1,800 sq. km. The mountain is home to around 264 tribal families who have complete ownership over the mountain and every spring, nullah, animal or tree that the mountain possesses. These sand stone mountains are rugged with sparse vegetation and trees and clumps of small shrubs and grass. Wild ash, Pistachio and Junipers were once abundant and can be seen at some distances even now. Other wild fruit varieties include cherries, almonds and berries. Scientists have discovered and observed many species and sub-species of birds, reptiles, mammals, flowers, herbs and plants of medicinal value.

Torghar is inhabited by the Pushtuns of the Kakar tribe and the Jalalzai sub-tribe. Conforming to traditional tribal norms and customs, the area and the tenure of each group is distinct from the other. Historically the tribal groups are subservient to the Jogezais who play a dominant political role. Certain other factions may be stronger within the tribal hierarchies. These tribesmen are considered by some as a true example of authoritarianism, autonomy and individualism. They are also non-conformists and famous for their isolation from and rebellion against the government.

Once known as the "home of rebels," Torghar was the last stronghold of the resistance against the British rulers, the area having witnessed the great tumult during the civil war and remained home to the warrior and tribal chief Bangul Khan of the Jogezai tribe. The mountain has also remained a migratory route for the nomadic (Pathan) tribes.

2.1.1 The Governance Mechanisms and Livelihoods

The communities have very well defined values and principles and set patterns of conducting their every day affairs related to leadership, conflict resolution or resource management. Rights and responsibilities are usually well defined but inter and intra tribal disputes over land ownership or water are common. If a matter is not settled locally only than it is taken to the next higher authority sardar or nawab and to the courts of law if required. But if nothing else works, which is rare, than they take it up among themselves. Orbashtai, a small settlement of six households is one example where family rivalries and disputes created considerable problems for the project but were resolved at a later stage.

The tribes settled in the mountain have indulged in indiscriminate killing of the markhors and urial for not only consumption but also mere entertainment for many years. The Afghan war in 1979 and with it the massive influx of ammunition set the trend for unchecked hunting and poaching. The increasing population and the resultant human activity also lead to intrusion of the once protected and isolated area. The ruthless and senseless killing of the animals continued until a time when they nearly disappeared from the area.

The area is inhabited by nomadic, semi-nomadic and settled pastorolists and their main occupation is livestock rearing. Some men are employed as daily wage labourers and additional income is earned from selling wild fruits, fuel wood, medicinal plants and other non-timber forest products. Domestic animals include goats, sheep, camels, donkeys, cows and horses. The climate is mostly dry and migration to other areas in search of grazing pastures is common. The routes are also open to passing nomadic tribes during the year. Agricultural activities are limited to small orchards and seasonal crop.

These people have well defined systems for water sharing and the cultivation is dependent on their water share. Once the area used to receive average rainfall of more than 250 mm from winter snow but now the persistent drought conditions in the area have drastically reduced the water sources, natural vegetation and livestock numbers. This difficulty is exacerbated by a very high incidence of animal disease and low breeding practices among the animals and the game birds. This has created severe food insecurity for the people as their main source of income and subsistence requirements were heavily dependent on livestock. The mountain people possess deep knowledge about their local area, its resources, weather, wind etc., and plan all activities according to their own calendar, "chilas," based on seasonal changes. Plantation, crop cultivation and harvesting, migration, collection of medicinal plants, gums, resins, livestock, drying of cheese, etc. is all done according to the "chilas" system.

The main pastures in Khaisore valley, Kundra valley and Spera`ghberg have depleted whereas Tor`ghberg and Tanishpa are left with minimal pastures not likely to survive for much longer. All major water sources like the springs and wells have dried up and water scarcity is now their prime concern. Due to the water unavailability, the once flourishing orchards of apples, almonds and apricots have also suffered tremendously and farming activities have almost come to a halt. The already scarce vegetation and water sources will now have to be shared by the wildlife and the livestock and the markhor and urial population, which have survived so far, face vulnerability. The challenges confronting these people are many and they are at the same time wary of any outside interference for fear of loss of control and resources. The fact, however, remains that the government too has steered clear away from this area and never made any attempt in this direction.

2.2 Problems and Mistakes

Typically, tribal set ups such as these and extreme area and rough terrain conditions present many problems during project planning and implementation stages. The Torghar Conservation Project also faced the usual teething problems but managed to overcome them.

The influx of arms and ammunition with the Afghan War lead to increased hunting and poaching pressure on the wildlife and may be a factor for their rapid decline. The situation improved later on and Torghar gained respect and recognition for its conservation programme. As the opportunities for jobs under the project came up people witnessed relief and economic prosperity. The demands for jobs and benefits, however, are increasing, even from those who had earlier shown no interest in the programme. Notwithstanding the achievements that have been made to date, it remains clear that without some kind of short to medium term relief measures, the area can face vulnerability and the situation can deteriorate.

In view of the absence of any government intervention, the area lacks even the most basic of public facilities. A basic health unit, now a structure, was set up by the government and now stands abandoned for many years. The terrain makes it very difficult for people to access medical aid from other areas. The people, especially the women, frequently suffer from malaria, stomach cramps and aches, weakness and arthritis and require proper aid and medicines that are not available locally. Other factors that further compound the situation are lack of employment opportunities, water scarcity and the resultant low agricultural productivity and low crop yield, deforestation and land erosion, livestock death and disease, absence of educational facilities and mobility constraints.

In the short term keeping a controlled livestock size, disease control and provision of food and medical aid are of a high priority. A longer term programme that looks at possibilities for range improvement and management, livestock management and breed improvement, small scale enterprise development, training and micro-credit and community health programmes may be essential. Similarly other areas that may require attention and investment over the short and long term are provision of safe drinking water and irrigation water, the rational distribution of money, tenure, assets, wildlife and mitigating social problems related to tribal disputes for instance fights over grazing rights etc.

Under the Balochistan Wildlife Protection Act, 1974 all issues pertaining to management and conservation of wildlife come under the purview of the government. Moreover, the government policies and regulations concerning communal conservation programmes are not very supportive. Like other sustainable use programmes, this programme also does not have the protection of a legal framework to formalise existing arrangements. The area that does not come under the agenda of any provincial or federal authority and there has never been any government intervention.

Another issue that has hindered the project is the matter related to the trophy fee, its determination and fair disbursement to the community. The trophy fee for the straight horned markhor and the urial is fixed at US$ 25,000 and US$ 15,000 respectively. The government allotted quotas for trophy exports for the first time four years ago. During 2001 the government has approved three trophies for markhor and five trophies for urial. 20 percent against each hunt goes to the government as a fixed fee. STEP has been advocating for transparency in quota allotment by province on the basis of a clear criteria based on the species population and location. STEP feels that the idea of fixing a percentage fee for the government instead of a fixed trophy fee is also open to corruption and misuse of quota.

Along with the many successes that the project boasts of there have also been mistakes and many lessons learned over the years. The project started with the help and participation of the tribal elders but efforts had to be maintained to get the entire community on board, understanding the intricate web of relationship that exists amongst the tribes and sub tribes, their power and governance structure. All decisions whether major or minor took a lot of time and effort as the entire communities would be involved and any action that took place was preceded by first reaching a consensus. The allocation of jobs, rights and responsibilities was also an important decision and one that took constant consideration and attention.

Some mistakes that were made at the start of the project have consumed a lot of time and resources to resolve over the years and a few persist to date. A few mistakes that were made at the start include hiring of individuals as game guards without any clear criterion, not understanding the tribal

relations and disputes and site selection for implementation of a water project. For example the building of a water tank in an area that was later identified as a disputed territory are problems that persist till today and efforts are being made to resolve the conflict. Given such problems it has now become mandatory to obtain verification from the community before initiating any such activity in the future.

The game guard appointments made by Mahboob Jogezai, a local tribal head included the hiring of some seven local tribesmen as *naukars* (servants or employees) to help curb poaching activities in the area. These appointments were made more on the basis of personal and tribal associations than on any specified criterion defined by the programme. As the community started to exert pressure for additional jobs the number of jobs was also increased rapidly. This necessitated and initiated the establishment of a systematic criterion for employment. Excessive reliance on one individual for recruitment matters and other management affairs lead to complications, exploitation and conflicts among the people. These *ad hoc* arrangements made at the start set back the project and reduced its efficiency and effectiveness to some extent.

Similarly some negative repercussions on the community at the time of project were that the lack of communication and participation could not evoke any real commitment or sense of ownership from the communities and project objectives remained unclear. The situation started improving with STEP's intervention of directly involving itself with people's concerns and the programme was put on the right track once again. The remedial measures that were taken include replacing the individual with a group of men who were made responsible for the selection and supervision of the game guards and the distribution of salaries. The decision of appointing one game guard from amongst 80 people as in the Shizai tribe also created problems and the system is now based on "plar." There are five *jamadars* (supervisory heads) of the guards who are responsible for the game guards, distribution of salaries and taking action against poachers.

The project initially also supported young boys to pursue higher education at Qila Saifullah district who were expected to eventually return to the area and contribute towards its welfare. However this is also viewed as a failed experiment since the young men were not inclined towards returning to the area. Delays caused in the allocation of annual hunting quotas has caused serious time lapses and could undermine the credibility of community based trophy hunting programmes.

2.3 Lessons Learnt

From among the lessons learnt early on in the project, one of most fundamental and foremost lesson that was also incorporated was the shift in the project approach from an individualistic and centralised one to that of a holistic and broad based community participatory model.

The project also learned that a programme that caters to individuals rather than groups and one that fails to understand the broader community relationships and mechanisms leads to confusion, misdirected focus and non-participation and co-operation from a community. The overall institutional approach taken on for the project was not to bypass tribal groups. The project learned that attention needed to be paid to tribal disputes and issues related to terms of tenure, water resources and land holding before engaging people in any process. Another lesson learned was that hiring on an *ad hoc* basis and without a clear criterion would lead to complications and fail to achieve

the desired results. This was a lesson learnt from the mistake made earlier in hiring those individuals who neither had the interest nor the sincerity towards the programme objectives. It was, therefore, decided to employ men according to their population and land ownership and making each guard responsible for the protection of his clan/area.

The Torghar biodiversity project demonstrates how community participation and interest has been invoked to implement a long term and concentrated programme for biodiversity conservation and sustainable development. The trophy hunting programme served as a tool for conservation and development and the model offers many aspects that can be replicated, including community participation, sustainable use of resources, conservation and economic development.

Another lesson learnt is that establishing a direct or indirect link between any conservation or development programme with economic incentives or other tangible benefits is imperative for success and programme sustainability. Torghar is a good example of how local community protection efforts worked once their economic prosperity was made contingent upon wildlife protection. The communities take pride in the knowledge that they have helped save the endangered animal and this has created a sense of ownership over the project and other developments in the area. By now the programme has established a good momentum and has the necessary support and reserves to sustain itself.

An aspect that takes precedence in conservation projects, especially in tribal settings, is that it becomes necessary to retain a sharp perspective of the repercussions of outside intrusion or the effects of artificial or induced prosperity that a project may create. As such in this case extreme caution was awarded to each project intervention in the area so as not to disturb the ecological pattern and natural habitat conditions. Only those places or sites were approved for implementation of the development projects where it would not directly influence the wildlife.

Another useful lesson that can be drawn from this project is the benefit in designing a project that draws upon indigenous knowledge, traditional institutions and resources rather than the use of new methods and technology. Following this basic premise, the project relied upon local practices and management ways to the extent possible. The traditional rules and regulations that had been established for equity and resource sharing, allotments, allocation of rights and responsibilities for water, land holding, grazing rights, range lands, wildlife and forests were taken as a fundamental basis for implementation and, therefore, all decisions were agreed and respected by all. Any issues that emerged were treated in the same way and local knowledge was utilised and built upon to the extent possible. All decisions were discussed at length with the community to ensure validity and acceptance by all. This proved to be an effective way of making them responsible and accountable for their actions. Local measurement methods and indicators for monitoring and evaluation of project results were devised on the same basis. Issues like control of animal herds, resource use and misuse, grazing patterns, traditional *jirga* systems and conflicts were discussed with them openly and they were informed about the positive and negative repercussions they could have on the programme.

It became an established lesson that ongoing, consultative and participatory planning process is a prerequisite for decision making and its effective enforcement. STEP emphasises that, "it is after all their (community) land and they can turn around and ask us to leave if they are not happy with us." This attitude of maintaining a close contact with the community is also reflected in their statement

that, "a project only works when it establishes a first name basis with the people." The benefit of retaining a sharp focus on project objectives and purpose during implementation has also been a valuable lesson. Since conservation of biodiversity remained the prime focus through out the programme duration the communities now understand that their welfare and prosperity is dependent on the protection and planned use of their most valuable asset—the markhor and urial. In some ways the explicit and implicit threat of withdrawal of support from the area was also a good incentive to keep the community interested and involved in the conservation and development efforts of the programme. The community reached at their own conclusions as to the benefit of the programme once the direct economic link between their prosperity and the wildlife became apparent.

Another project and development lesson was the way in which the project expressed sensitivity towards tribal customs, local environment and community capacity at all stages of implementation. The realisation that the entire programme had to unfolded gradually was there and underpinned the entire strategy. The project agreed that flooding the community with money could cause major disturbances and future plans are cognisant of the fact that this could attract vested interests and can easily create imbalances and lead to exploitation of the mountain people. Moreover, the project opines that local institutions have to be developed and strengthened and the right system put in place so that the communities are prepared to protect themselves at a time when external interference or influence enters the mountain. The project reports that all efforts were made to maintain absolute transparency during implementation. STEP is making all efforts to get the programme to become sustainable in the absence of a permanent support mechanism but admits to it being a difficult and long term process.

The Torghar project can be taken as an example of a limited scale project that served as an experimental laboratory where new interventions and innovations lead to an integrated conservation and development programme. It, therefore, provides a hypothesis that projects expected to have any degree of success and sustainability are those that are based around community managed ideals. Community acceptability is fundamental for planning and implementation and only then it can be taken forward with help from support organisations and experts.

According to a GEF-SGP external evaluation conducted by Durrani, Beijers and Haider 1999:

> The single-minded endeavor of the *Sardars* from Torghar to save the species of Markhor and Urial from extinction has led to their encouraging community participation in the decision making process. And it works! An [National Steering Committee] member from Balochistan when confronted with the conflict between community participation and the feudal social structure of Balochistan replied that community participation would work in the Balochistan *Sardari* environment if we work with the system as against confronting it.

2.4 Future Plans and Processes

The project is aimed at institutionalising a holistic resource management system and strengthening the local institutional capacity. The project document mentions three long term objectives: (i) conserving the endangered habitat and species by reducing pressure on resources and promoting sustainable use of biodiversity; (ii) awareness raising, empowerment and capacity building of

communities, and; (iii) strengthening the institutional capacity and developing appropriate polices for enabling community co-management and promoting sustainable use and conservation of biodiversity. The key project outcomes include enhanced stakeholder awareness regarding the environmental, economic and social benefits of conservation, empowerment of local communities for conservation and sustainable use of biodiversity through advocacy and policy changes, strengthened institutional capacity, improved habitat and improved livelihoods of local people through better agro-pastoral practices and development of socio-economic infrastructure.

The challenges that lie ahead are many and will take time to be met. The project will need to ponder certain issues and questions with reference to determining future course of action and strategy formulation while maintaining sensitivity to the fact that the community has experienced a certain standard of living and income levels. STEP is cognisant of the fact that careful consideration will have to given in determining the system(s) of conservation to be followed in the future and making investment decisions. STEP's main concern is that every penny earned against the project should benefit the community.

STEP has recently initiated a "process" in collaboration with a French anthropologist based at the University of Paris. It is a process that is expected to define certain parameters for institutionalising the practice of conservation and creating a permanent system for the management and development of common resources. It envisages a series of open and continuous discussions with the communities in which they will be encouraged to reflect and evaluate the project, the results achieved, successes and mistakes made, lessons learned and impact. The discussions will also centre around ideas and suggestions for formulating new rules and regulations and establishing clear guidelines and parameters for just and equitable distribution of resources and benefits.

One of the options that is being explored is the idea of creating tribal committees[1] in Torghar that can lay down the foundations of a permanent governance mechanism and can become the basis for all future planning and decision making. The tribal committees will be a representative body for all the mountain tribes, sub tribes and clans and will ensure that the weak have a voice in decision making. The project aims to have a holistic approach that will look at ways of consolidating the progress achieved so far and how it can be capitalised upon.

Also on the agenda, is the idea of employing a few local tribesmen, "naukars," purely on the basis of merit who will also be monitored by the tribal committees and have a mutually accountable relationship with STEP. Each committee will also be responsible for selection of the "naukars" and their rotational patterns. The committee will also be allocated annual budgets in proportion to their respective population and tenure, and will be empowered to carry out their area planning and resource allocation. All funds (developmental and other) will be channelled through these committees and funds will be disbursed directly against a request receipt duly endorsed by all committee members. Other committee responsibilities may include range management, live stock control, reforestation, water conservation, porcupine control, medical assistance, hardship cases, management of basic commodity stores and disbursement of shares.

The process will also draw upon findings and analysis from in-depth anthropological or social studies conducted in the area, especially studies that attempt to objectively assess the tribal history

[1] Tareen, N. Personal Note. Future Plans for Tribal Committees and Naukaris in Torghar.

and livelihood patterns and social, psychological and behavioural aspects that have not been understood so far. The project maintains that this is a prerequisite for the sustainability of a community based programme.

STEP intends to continue organising wildlife surveys on a regular basis so as to keep a track of the programme direction, impact on the habitat, wildlife and communities as well as to identify course corrections. Other future project plans include extending educational facilities in the area, establishment of a children school, provision of training courses to tribesmen on livestock rearing and disease control and small-scale enterprise development (mainly through establishment of no profit, no loss utility shops) in the mountain. The communities are now also ready for a more advanced and focused programme and are eagerly awaiting new rules and regulations. They are prepared for a controlled livestock and disease control programme and realise the need to reduce grazing pressure, secure grasslands and conserve water sources. They are interested in getting a local person trained in administering livestock vaccination. STEP hopes to revive the old institution of traditional livestock grazing called "pergore" (seasonal rotation of selected grazing portions). The reintroduction of the leopard, now an extinct predator, is another idea that the communities is ready to consider because they understand that its reintroduction could protect their crop and fruit trees against porcupines. Water conservation is also a very important priority and they plan to secure perennial sources of water and build check dams to increase spring water recharge.

The project expects to employ strong advocacy tools for influencing attitudinal and policy changes amongst major actors and institutions including the government and present alternatives for practising ecologically sustainable use of common resources. Networking, documentation and dissemination of information and experience sharing are expected to influence reforms and create acceptance regarding the community's role in conservation. Training courses aimed at capacity building of NGOs, government line departments and community (tribal leaders) are also under consideration by STEP. Specifically, the training will focus on community mobilisation concepts, participatory approaches and traditional techniques for common property resource management.

Different activities have been planned under the conservation and sustainable use component like surveillance against unsustainable resource use, restoration of degraded habitat, resource use plans and appraisals (biodiversity assessment) and community based biodiversity monitoring system. Under the livelihood improvement component the planned activities include livestock management and improvement programmes, regulation of grazing patterns, promotion of agricultural and horticultural opportunities, micro-credit and value added processing of medicinal plants and natural products.

3.1 Flexibility

The programme has evolved slowly but effectively over the years and the project approach and strategy has also been continuously shaped and adapted to results from on ground monitoring, evaluation and community feedback and reflected accordingly in STEP future plans.

The project has remained as flexible as possible under the conditions to changing needs and concerns on the ground. The project proposal makes provisions for small changes/modifications to be incorporated in the project with the consent of the council members. As explained in the earlier sections of the report the project has also been responsive to lessons learned.

One example of the way in which the project exhibited flexibility during implementation is the timely response to the high incidence of disease and morbidity in the community. The project agreed with UNDP that a portion of the (planned) savings in the construction of some water storage tanks would be used in extending medical assistance. A part of these funds were, therefore, reallocated for this purpose.

Similarly, some other aspects that demonstrate project flexibility are the change in the project approach from the individual to the collective, change in the criterion for hiring of game guards, site selection for project intervention and consensus building. The project also benefits from the flexibility to experiment and innovate due the absence of a pre determined agenda that is usually the norm in other projects and faces no restriction regarding reporting format, frequency and other obligations that can cause unnatural rigidity.

3.2 Sustainability and Replicability

STEP is considering various options for making the programme sustainable in the absence of a permanent support mechanism. The creation of an endowment (trust) fund is one way in which it hopes to achieve this objective. Other than lending credibility to the programme, the fund will provide the necessary cushion for the slack times when there are no game hunt reservations. Moreover, a community based conservation programme that is centred around trophy hunting is not only concerned with wildlife status but is also vulnerable to the external environment like policy changes at the national and international level, the system for quota allocations, trade restrictions, licensing requirements and export permits.

The direct dependence on the market demand for hunts means that any external crises or policy change can undermine the programme sustainability. In view of all these constraints the project has made consistent efforts to create self-sufficiency and exercise extreme caution in financial planning and management. It seeks to justify all external funding with a specific purpose and also gives careful consideration to the amount of money entering the community.

The total project cost is estimated to be Rs 1,865,000 of which the community contribution is approximately Rs 195,000. STEP has also secured cash grants from other organisations including WWF Pakistan and the Houbara Foundation to the tune of Rs 158,000 and US$10,000 respectively.

Some proposals and plans for initiating other community managed conservation programmes are also in the pipeline. This includes the Conservation of the Balochistan Black Bear in Pab Range, Conservation of Reptiles in Chagai, Conservation of Marine Turtles in Tuk and the Conservation of Wild Ungulates and Wild Cats in Mand. STEP is seeking to expand the project area of the Torghar conservancy by including neighbouring tribal valleys under a consolidated conservation programme. This is expected to build upon the project achievements made so far and to strengthen the capacity for improved management and sustainable use of the wild natural resources. A project proposal has been formulated by SUSG-CAsia for obtaining financial assistance from UNDP/GEF under the medium size loan facility. The total project cost is estimated at Rs 1,212,500 and the grant will be utilised for both Torghar and Chagai. This will sustain the impact and the benefits reaped by the project so far and will make it a good model for replication of similar community based initiatives.

STEP has maintained a conservative culling level of two markhors and five urials on an annual basis although the recommendations put forth by the experts on optimal culling is on a higher side. This is because STEP is of the view that in order to facilitate a quality trophy hunt there has to be a significant population of old animals and an overall steady population growth rate. Moreover, a lot of time and money is invested in facilitating hunts certain quality standards have to be maintained since every hunter is treated as a source of direct marketing and advertisement. STEP can also consider the option of extending its services to other outfitting organisations (intermediary organisation co-ordinating the hunt and arranging for the import/export permits for the trophy and firearms) for increased financial sustainability.

It may be a realistic assumption to say that the community in Torghar hills no longer lack the information, awareness or the organisation that is needed to sustain their local conservation initiative. They do, however, like all other sustainable use programmes, lack the necessary legal framework that is necessary to protect and legalise the informal arrangements that have proven to work. Also required is the technical support and capacity building from the international conservation NGOs already operating in the country.

STEP aims at promoting the Torghar Wildlife Sustainable Use Programme through increasing programme stability, expanding project activities and promoting and using this experience in replication of other similar programmes. Some of the tools identified by STEP for achieving these purposes include the production of scientific reports (biological and sociological data), film, booklets and leaflets. Each tool, though different in content and layout, is expected to contribute towards publicising the project, demonstrating impact and used as informative material for the purpose of replication.[1]

The project has potential for replication, in particular, within tribal set ups. This, however, is subject to changes and modifications made in view of local conditions and ground realities. STEP emphasises that, "it is the concept of Torghar that can be replicated and not the entire project." One aspect that can be replicated in other projects is the approach towards community participation,

[1] Bellon, Luc. 2000. Promotion and development of Torghar Wildlife Sustainable Use Programme.

planning and decision making. Variables like tribal relations, local conditions and area characteristics have to be kept in view and appropriate modifications introduced.

3.3 Project Relevance

The project design is inherently geared towards systematically addressing and removing the threats and root-causes of biodiversity loss. The project rationale, strategy and objectives outlined in the project proposal correspond directly to the recommendations contained in the National Conservation Strategy (NCS) of Pakistan, 1992, the Balochistan Conservation Strategy (BCS), 2000 and the Biodiversity Action Plan (BAP) for Pakistan, 2000. The project is a direct response to the recommendations contained therein relating to the sustainable use of the wild living natural resources for their viability and preservation through active community participation.

"The project activities have a clear complementarity to the conservation efforts done" (Durrani, Beijers and Haider 1999). The water harvesting activities have been met with a lot of co-operation and enthusiasm from the communities due to the scarcity of the water and the persistent drought conditions. The UNDP funded water related development schemes (not an exhaustive list) include lining of water channels, water storage tanks, construction of a dam on a seasonal river, spring cleaning, installation of hand pumps where surface water is unavailable for common use, retaining walls to control seasonal flooding and the construction of a 1,050 metres irrigation channel. The achieved targets include a completed dam at Khaisore valley that is expected to increase ground water recharge, seven completed water storage tanks and two under construction at Natu and Tublai for water conservation, two retaining walls at Tanishpa to control erosion, completion of 250 meters irrigation channel and cleaning of springs at Savidarga and Khand. A water pond constructed in Killi Ziabah is providing water to approximately 25 households (around 30 acres of land) and is a place where there was no source of water earlier.

Other planned activities like orchard development and plantation of fruit and fuel trees were, however, not implemented on the scale envisaged because of water shortage. The water related schemes focused on conserving and rehabilitating existing water sources rather than constructing new ones. Site selection was carefully planned and analysed in view of its likely positive and negative effects on the natural habitat conditions and wildlife.

The project aimed to increase agricultural activities in the area so as to reduce dependency on livestock and regulate livestock and wildlife grazing patterns. The activities included levelling and development of terraced fields for orchards, establishment of nurseries and plantation of fruit and fuel trees. The area requires substantial input for land levelling and crop cultivation due to climatic and topographic constraints. The project, therefore, provided financial and technical assistance for the construction (excavation) for water storage dams and tanks for irrigation and crop cultivation purposes and this has considerably increased the agricultural production. "The water storage system can lead to increased agricultural production and therefore less dependence on livestock that is degrading the environment" (Durrani, Beijers and Haider 1999). The community's own interest in orchard development remained limited due to the fear of habitat fragmentation or increasing grazing competition in the core area. The project financed 10 to 15 tractor hours in selected areas of Tublai and Tanishpa for land levelling, excavation and expansion on a limited scale. Some almond and apple orchards have been expanded or developed and most of the community members claim a

significant increase in yield. Although a few tree saplings have been given to the people but the establishment of a nursery has not been possible so far. In addition, range management and reforestation are activities that have been planned for the future.

In view of the rough terrain and the long distances to other towns and markets, the mobility of people was a big problem. The project has helped repair an old dirt road from Khaisore cross to Tanishpa and a new road constructed from Kundra to Torghberg. This has made the area more accessible and the link road provides easy access to district Qilla Saifullah where the people travel for trading of their goods and accessing medical supplies and facilities. The communities have also been provided with general medical assistance and hardship help (mostly in kind) under the social welfare aspects of the project and this has provided tremendous relief to the people.

3.4 Efficiency

The efficiency of the project interventions has not been worked out in quantitative terms as the project data is not available. However certain aspects and facts related to project efficiency are as follows:

The overall plan for the community based trophy hunting is efficient since it takes into account all potentially viable options open to a conservation programme of this kind; the only potential alternative for a viable non-consumptive use of the markhor and urial population would be ecotourism. This has not yet been possible because of the extreme terrain and logistical problems. The census of the animal population growth (survey conducted in 1999) shows a significant animal population and is a good indication of project efficiency. Another indication of efficiency is the annual culling of a fixed and conservative number of animals. The hunt is open to all those who can afford to pay the price and facilitated by local tribesmen who are experts in determining the age of the animal so that the young males are protected for future progression. 14 markhors and 20 urials were hunted during the first ten years of the project. Trophy hunts are the only source of income to cover all management and overhead costs. The government is entitled to 20 percent of the income against trophy hunts and 80 percent goes to the communities.

The water development schemes have been implemented in an efficient manner and focus on conserving and strengthening existing water sources. "The technology that is being utilised for water storage is a low cost technology benefiting the community for facilitating agricultural production and accessibility to cleaner drinking water, offering great possibilities for replication" (Durrani, Beijers and Haider 1999). Water sources have been conserved by simple and cost-effective techniques like the water ponds that are not only an effective way to conserve water but are also cost efficient and can be maintained locally. Water distribution time and quantity is also decided on the basis of an effective and efficient system based on land holding size and determined by the community.

The technical and financial cost was borne by the project and the community provided contribution in the form of labour and material (sandstone and crush). The community labour contribution is worked out according to their water share; a system based on a one day and night (24 hour) cycle. Average time incurred on completion of one pond was 20 to 25 days at a daily wage of Rs 75 to Rs 90. The unit cost of a water tank is approximately Rs 70,000 and use of locally available material and

indigenous knowledge is promoted. Local skilled persons are used for site selection, construction supervision and monitoring.

STEP project records indicate (Annex II) that most of the UNDP project targets were achieved. This includes a completed dam at Khaisore valley to increase ground water recharge, seven completed water storage tanks and two under construction at Natu and Tublai for water conservation, two retaining walls at Tanishpa to control erosion, completion of 250 meters irrigation channel and cleaning of springs at Savidarga and Khand, 50 percent of tractor hours utilised for orchards, 500 almonds and 100 apple saplings supplied (proposal called for the 200 to 500 tractor hours and 2,500 saplings of fruit and fuel trees), repair of dirt road from Khaisore cross to Tanishpa and construction of a new road from Kundra to Torghberg.

3.5 Impact

The impact of the project at the local level and on the national and international level is described below:

3.5.1 The Local Level

The most immediate and visible impact of the project interventions in the area is the increased population of the Suleman markhor and Afghan urial as indicated by the census results of 1999. The protection of other biodiversity in the area is an indirect positive impact of the project. This is evidenced by the discovery of new sub-specie varieties of plants and animals that have been recorded over the course of the project duration. The existing plants and animals and other natural resources like water sources have also been protected.

The co-relation between development and biodiversity conservation established by the project has lead to increased sensitivity of the community towards environmental issues and has thus positively impacted behaviour and practices. STEP has induced a new way of managing the natural and wildlife resources and conservation efforts encompass the entire mountain population. The mountain people have truly extended their "respect" towards biodiversity and consider it a vital asset fundamental to their prosperity. The project is a good example of a community managed conservation programme that has complete ownership by the local community, is sustainable and has a direct link with the area development. The initial reserve and scepticism of the people has changed to enthusiasm and a change of attitudes and perceptions. Even the local hunters are not allowed to hunt in their own area and the people are now convinced that it is in their interest to curb poaching activities and to keep up the programme since it has been a major source of regular income for them.

The economic benefits to the people by way of jobs and a regular source of income are other positive impacts created by the project. This economic incentive has also served as a motivating factor for the community to sustain the programme. The project clearly demonstrates the importance of linking economic incentives with a community managed conservation programme and these people are also aware that conservation has lead to development of their area.

The increased income has lead to an improvement in the overall standard of living for the people. The existing livestock of the community has been secured and replenishment of livestock was made possible. The communities have invested a major portion of their income on strengthening their herd size. The project has also helped the community cope with transformations and hardships. Improved access and mobility of the people by road repair and construction, increased agricultural production, relief in grazing pressure outside the core area, conservation of water sources, access to water, decrease in the incidence of disease, are some other significant positive impacts at the community level.

The communities are now ready for more focused and long term projects and programmes. Other than the direct economic incentive that the project has offered to the community through the provision of jobs, they have acquired a real sense of ownership and pride. This is due to the realisation that they have mobilised their resources and have had accomplishments extending beyond development alone. They are now aware of the environmental protection and sustainable use concepts and are organised. This is a key attribute that was missing up to now due to the internal divisions created by tribal affiliations extending beyond the boundaries of the mountain.

Another planned and achieved impact of the project is the sense of personal commitment and dedication to the overall cause of conservation that was exhibited by the project and reciprocated by the community. This was achieved due to the personal elements within the project approach and implementation arrangements. The open and personal involvement with the people, financial autonomy and the absence of a donor driven agenda have earned the project a high degree of trust and credibility among the community people. The project is, thus, likely to have a long term impact and benevolence because of the time and efforts invested in nurturing a relationship with the people. This is already evident by the values and thinking that the young generation is coming up with in relation to animal hunting and conservation.

The project has also provided on the job training opportunities for the people in construction and repair work and this has built up the local skill base. This has also opened up income generating opportunities for the people. The people are already expressing their desire to acquire training in livestock management, disease control and basic paramedics training to help improve human health conditions.

Although the project has been successful in achieving its objectives under very challenging conditions, the concept or the possibility of integrating a gender focus has so far alluded the project. "Women are invisible in project design and do not participate in decision-making or execution. The women play a big role in the areas of project intervention such as livestock herding, agricultural activities and water resource management. The input of women in all stages should have been used for 1) more effectively achieving project objectives and 2) to increase their decision making power" (Durrani, Beijers and Haider 1999). The project proposal states that "women will not be directly involved at any stage," and involving women in decision making at the planning stage was not possible. STEP has, however, deliberated on the issue of women participation during project implementation. Given the conservative tribal mindset and customs the core activities under the community conservation programme did not envisage any role for women. The project's development activities, however, take women into consideration. The examples include provision of water, medical assistance and even road repair and construction. As a result women are direct beneficiaries of the project and have benefited from easy access to water (one of their biggest

constraints) and increased mobility and improvement in their health status. The intervention made by STEP in settling household disputes, distribution of money to widows as well as other social problems is another way in which it seeks to address women concerns.

3.5.2 National and International Level

In order to increase STEP/TCP impact and visibility at the national and international level, SGP has helped organise project presentations for the media and other donors through the United Nations Information Centre (UNIC).

A significant but unofficial achievement of STEP under the project is that it has been able to influence policy decisions regarding conservation at a national and international level. The chairman STEP is associated with the IUCN Sustainable Use Initiatives (SUI) formed in 1995 to conserve biological diversity and benefit people. He also chairs the Central Asian Sustainable Use Specialist Group (SUSG-CAsia) formed under the aegis of the Species Survival Commission (SSC) of IUCN. The markhor was included in the Appendix I of the CITES and all trophy exports outside the country were banned. It was due to the advocacy efforts undertaken by SUSG that the markhor quota for Pakistan was first allotted under the CoP-10 of CITES. The CITES exemption came in 1998 under which it permitted the GoP to allow six annual community managed hunts, of which STEP is granted two to facilitate trophy hunts. The National Council for Conservation of Wildlife (NCCW) – the management and technical operating body for CITES – acknowledges the project as a legitimate community based conservation programme and has allowed the functioning of the programme despite the ban on big game hunting enforced by the Federal authorities in 1988.

Following the success of this project other international organisations like the WWF and IUCN also started including trophy hunts and related components in their projects. The IUCN Mountain Area Conservancy Project (MACP), pilot phase in Gilgit has three components: trophy hunting, ecotourism and medicinal plants. Similarly WWF has introduced a project in the Baar valley in the Northern areas that is centred around ibex conservation.

SUSG actively opposed the placement of Afghan urial on Appendix I of the CITES. STEP has made consistent efforts to evolve a stakeholder agreement on developing a trophy hunting policy for Pakistan that clearly defines the basis for quota allocations and revenue sharing. It has advocated that allocation of quotas should not be influenced by political considerations but made on the basis of the animal population base, conservation and benefits to the communities.

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Annex I:

Terms of Reference of the Research Team

Nature of the proposed activity

The proposed activity is based on the premise that there are living examples of civic governance in Pakistan that can be readily adopted by others in similar socio-economic settings and within the resources available to a community. A related premise is that relevant examples need to be documented and evaluated to guide other communities as well as to caution them against the mistakes made by others. Based on the first premise, the examples selected for the proposed activity are four GEF-supported projects, namely, (a) Conservation of Biological Diversity with Community Development, Torghar, Balochistan (b) Ecotourism and the preservation of the Indus Dolphin in Taunsa, Punjab, (c) Smokeless Stove Project of Escorts Foundation in District Kasur, Punjab, and (d) Revolving Fund for Tree Plantation in Mitha Tiwana, District Khushab, Punjab. Based on the second premise, the proposed case studies are intended to be both inspirational and evaluative in nature and will:

- Demonstrate successful, or potentially successful, strategies for mobilising communities, protecting wildlife and conserving natural resources in diverse socio-economic settings.
- Help develop priorities and strategies for addressing environmental problems.
- Support research and data gathering.
- Support exchanges of experience among CBOs and their local, national and international partners.
- Develop material that can be used for guiding and evaluating GEF-assisted and similar projects.
- Motivate partnerships between communities and relevant authorities at various levels.

In broad terms, the proposed activity will document and evaluate:

- The way local pioneers identified a challenge and provided the spark to facilitate change, the values they promoted, and how others view them and their values.
- How these local pioneers established partnerships with UNDP, local authorities and international organisations for obtaining technical and financial assistance.
- The new institutional arrangements (including norms and conventions and arrangements for cost- and benefit-sharing) established in the process of change and the human and financial contributions made by local communities as a result.
- The results achieved by and the future prospects (including sustainability) of the initiative, and the lessons learned from it, including the potential for replication.

In pursuit of the scope of work outlined above, the research team will:

1. Review project documents including proposals, evaluations and in-house records.

2. Interview key implementers, advisors and facilitators including UNDP staff to obtain history.

3. Conduct field visits and beneficiary interviews, including interviews with women and poor households, in the four locations. Local people and organisations will be treated as one set of evaluators of the projects. Women beneficiaries of the projects will be interviewed by female members of the research team.

4. Prepare a report including (i) a short history of the project, (ii) description of the partnerships, local institutional arrangements including those for cost- and benefit-sharing, and project achievements, and (iii) assessment of future prospects and potential for replication. The evaluative content of the report will include, as much as possible, the kind of description and analysis that is generally provided in an evaluation report.

With the assistance of RSPN, UNDP will be responsible for disseminating the case studies to the relevant audience.

Annex II:

A Comparison of UNDP Project Targets and Achievements

A comparison of the proposed UNDP project targets versus achievements as indicated in the project records is reproduced below:

Targets	Achievements
Construction of Dam in Khaisore	80 percent of the dam at Khaisore has been completed
Construction of 7 Water tanks	Seven water storage tanks completed. Two under construction in Natu and Tublai
Construction of 1,050 meters irrigation channel	250 meters irrigation channel completed.
Cleaning of springs	The springs at Savidarga and Khand cleaned and upgraded for increasing the volume of water.
Retaining walls in Tanishpa	Two retaining walls at Tanishpa completed.
Tractor hours for orchards	50 percent of Tractor hours utilised for orchards.
Supply of fruit saplings	500 almonds and 100 apple saplings supplied.
Establishment of nursery at Tanishpa	-
Construction of new road from Kundra to Torghberg, and repair of old dirt road from Khaisore cross to Tanishpa.	Old dirt road from Khaisore cross to Tanishpa repaired and a new road from Kundra to Torghberg constructed.
Medical assistance, supply of Medicines	Medical assistance and supply of medicine to the residents of Torghar continued.
Construction of 3 wells in Kundra valley.	The digging of well on three different locations in Kundra valley remain incomplete due to reduction in water-table because of the drought.

The construction of irrigation channel, tractor hours for orchards, supply of saplings, establishment of nursery and construction of wells are some of the planned activities that could not be completed because of the severity of the drought conditions in the area.