MANAGEMENT PLAN FOR CHITRAL GOL NATIONAL PARK

1. Introduction

Under the Indian Forest Act, 1927, protection of wildlife remained a subsidiary to forest management as the duty of the forest officer. Till the 1960's, no scientific management of wildlife or its habitat was undertaken in Pakistan. With the dawning realization of fast dwindling wildlife and the need for scientific management, the Government of Pakistan established two National Parks, in 1972 and 1974, at Lal Suhanra in Punjab and Khirthar in Sindh, respectively. They were followed by promulgation of the Wildlife (Protection, Preservation, Conservation and Management) Act in those two provinces, followed by such legislation on the rest of the federating units of the Country. Section 16 of the NWFP Wildlife (Protection, Preservation, Conservation and Management) Act 1975 provides for the establishment of National Parks. Chitral Gol National Park (CGNP) was declared under the Act *i id* on October 18, 1984.

Unlike the forest management planning undertaken by the provincial forest departments, Wildlife/ Protected Areas (PAs) management planning is yet to be institutionalized and standardized by the provincial wildlife departments in Pakistan. It is worth a mention here that, under the approved Forest Working Plan Code, forest working plans all over the country follow standards for preparation, data collection, especially the Table of Contents, etc., whereas there is no such established code for formulating Management Plans for Protected Areas in the country.

The preparation of Management Plans for Protected Areas in Pakistan is a recent development. The first Management Plan was prepared for Khirthar National Park in the late 1970s by Mark Halloway and Khan Muhammad and then for 5 National Parks including Chitral Gol by Rana Masood. This was followed by Management Plans for Lal Suhanra by Aziz Aslam Khan and Aleem Chaudhry in 1987. Other Management Plans prepared include: Khunjerab, Ayubia, Chiltan-Hazarganji.

Under the Protected Areas Management Project (PAMP), Management Plan were prepared for Chitral Gol, Hingol and Machiara National Parks, located in Khyber Pakhtunkwa, Balochistan and Azad Kashmir respectively.

The primary and reliable sources of information on the Chitral Gol National Park were obtained from the background documents like the World Bank's Project Appraisal Report 2001 and the PC 1 prepared by the NWFP Wildlife Department for funding under the PAMP. A wide range of experts prepared those comprehensive documents. The preliminary studies for the preparation of the Project Documents concentrated on the difficult task of identification of the custodial communities around the southern and

northern peripheries of the National Park. Other communities in the Eastern and Western buffer zones were also identified during the execution of the Project. The communities at the northeastern boundary i.e. Manor and Begusht remained largely outside the Project activities. One plausible reason was that, at the time of the preparation of the Project documents, another GEF project i.e. the Mountain Areas Conservancy Project (MACP) was under implementation in those areas.

It is advisable to define the term 'custodial community' for the purpose of clarity. Custodial for the purpose of this Plan means any person who has the likelihood to receive benefits from the Park. Custodial community means any community who has the potential to receive benefits from the Park. It also connotes a reverse relationship of responsibility to protect the Park in its true spirit. Similarly, 'core zone' connotes the area of the National Park, while 'Buffer Zone' means the areas of Rumboor valley and Awerate Gol.

Chitral is an urban Centre mostly located in between the northeastern boundary of the Park and Chitral River. Like other areas of the country, it also has urban related pollution problems - though they are largely out of the scope of this Plan.

Earlier, under the Protected Areas Management Project, the first ever-scientific Management Plan for Chitral Gol was prepared that was based on wide stakeholder consultations and experts' reviews. The Draft Manual for Protected Areas Management Planning prepared by Dr. Aleem Chaudhry was followed in the preparation of the final text of the Plan.

The Plan was further improved in light of the inputs and comments from a large number of participants, including experts and community members, carried out in a series of consultative workshops held from May till October 2007. Pakistan's international commitments to the Convention on Biological Diversity (CBD) under the Programme of Work for Protected Areas have also been kept in view while making the prescriptions and proposing interventions in Chapter 6.

The following studies conducted under the Project during the period 2003-2007 were the sources of information presented and used in the original Management Plan:

i. Socio-Economic Baseline Studies
ii. Village Conservation and Development Plans (Total 12 documents, one for each custodial village)
iii. Community Participation Manual
iv. Baseline Population Studies of Small Mammals
v. Baseline Studies of Markhor Population and Other Large Mammals
vi. Baseline Studies regarding GIS/Remote Sensing
vii. Reptiles and Amphibians

viii. Large Predators (Snow Leopard Studies)

ix. Avifauna Studies

x. Migratory Birds

xi. Vegetation Survey

xii. Range Management

A deep analysis of the consultants' reports, followed by study of the biophysical needs of the key wildlife species and inclusion of the socio-economic context led to the development of the issues and problems (Chapter 5). The standard methodology of 'Thick Description' was used, in which each parameter has been described in the minutest detail, then after analysis, the irrelevant are discarded, finally these are correlated with known scientific theory. This, in this case, has generated data and issues on species, habitat and ecosystems, and human-wildlife as well as human-livestock conflict. Many additional data generated during the process; namely urban pollution issues, Park zoning, progress of implementation of CBD's Programme of Work, etc. not utilized in the Plan, were handed over to the DFO Wildlife CGNP for future use. For example, regarding the Park Zone, two issues have come up; one, the area of the National Park appears inadequate to meet the habitat needs of the Snow Leopard, and two, most of the communities located beyond the boundaries of the Park need capacity building to be able to deal with concepts of extended zone. Adequate provisions have been made in this Management Plan to improve the wildlife habitat beyond the boundaries of the Park, and to enhance the capacities of the communities.

Nevertheless substantial effort for capacity building of the Wildlife staff and communities has been made during implementation of the GEF funded World Bank Project titled "Protected Areas Management Project" (1999-2009), yet a lot still has to be done; capacity building, therefore, is one of the major objectives of this Plan. Another highlight is the strong research component based on experiences gained during the Project implementation. A strong Community Activists component was therefore added to work as cornerstone of the community integration in the Park conservation.

An important component of the Project was the preparation of the Management Plan and its regular updating with stakeholder consultation. The Plan therefore made a basis for achieving the overall vision of the Park - to protect the integrity of natural ecosystems in and around Chitral Gol National Park.

Now the management plan prepared earlier is reviewed for Chitral Gol National Park under the Project "Development of National Parks in Khyber Pakhtunkhwa" for a period of five years.

2. Executive Summary

The realization that wildlife was fast vanishing from its natural habitats prompted the need for its conservation through scientific management practices. As such, the Government of Pakistan established two national parks on test-case basis: one at Lal Suhanra (1972) and the other at Khirthar (1974).

Inspired by the success of experimentation, the provincial governments promulgated Wildlife Protection Acts. Section 16 of the then NWFP Wildlife Act 1975 provided for the establishment of national parks. Chitral Gol National Park (CGNP) was declared under the said Act on October 18, 1984.

Prior to the accession of the state of Chitral to Pakistan, all lands located above the water channels were state properties; including the area comprising of the present National Park. In the 1880's, this area was set aside as a royal hunting reserve. Historically, the rulers imposed strict control on hunting and confiscated the cattle of poachers. Some of the inhabitants of the adjoining villages were, however, granted concessions; those are now the custodial communities for the Park and have been actively involved in its management, besides two buffer zone communities though with limited access to the Park resources.

The Park comprising of an area of 7,750 ha, is situated adjacent to a fast growing urban Chitral town. The Park is accessible from Chitral town by foot or by vehicle through a jeep road. It consists of highly rugged precipitous mountains with elevations varying between 1,500 m to 4,950 m. No specific geological or soils studies for the Park have been undertaken nor is Park specific climatic data available. The Park is the source of supply of irrigation and drinking water to the communities that reside in its watershed through the Chitral Gol stream, which goes to around 20 villages through channels.

Chitral Gol National Park is surrounded by 12 core zone Village Conservation Committees (VCCs), three buffer zone VCCs and two buffer zone conservancies. Detailed data of the individual VCCs highlighting their geographical locations, available assets, associated constraints, dependence on the Park resources, natural resource use pattern/trends, socio-economic status, etc. is available in the Village Conservation Development Plans (VCDPs) prepared for each village of the core zone and buffer zones.

With a few variations, the custodial villages have similar basic problems and resources. Villages like Zargarandeh, Rehankot, Goldoor, Shaldene, Chewdok and Jang Bazar are largely urbanized with services and small businesses as the main occupation of the inhabitants. While agriculture still remains the main source of livelihood for the residents of Balach, Thingshen, Dhanrikandeh, Mughlandeh and Singoor. The Kalash and Sheikhans retain their traditional system of goat herding and cereal production. These villages face similar problems as the population increases and land becomes scarce.

Pollution and other urbanization related problems that were unknown in the recent past are surfacing. Some villages had voluntarily given up goat herding in the Park while others did the same due to the availability of better alternatives. Household energy needs, especially in winter, remain a nightmare as fuel wood prices skyrocket; yet alternate sources of energy are either not available or unaffordable.

Markhor and the Snow Leopard are the flagship species that are of global importance and the Park provides a habitat for these species. Successive surveys show that the Markhor population is on the increase while ongoing studies using state-of-the-art radio collaring and infrared cameras revealed the presence of Himalayan Monal Pheasant, Roy's Pikka, wolves, foxes and jackals in addition to Snow Leopard. The floral surveys for forest vegetation show the presence of *Quercus baloot*, deodar, blue pine and chilghoza in mixed and pure stands. Amphibian fauna of CGNP and its buffer zones comprises of three species. Bird surveys were carried out in more detail and a checklist of 173 resident and migratory bird species representing 37 families has been prepared for the Park. A total of fifteen species of small mammals, including one species each of insectivores, chiropterans and lagomorphs, three species of carnivores and nine species of rodents, were documented from the Park (Table 3). A single species of a very rare shrew, the Asiatic White–toothed Shrew (*Crocidura pullata*), was found.

Eight major issues and problems of the Park were identified in interactive exercises that also involved the local communities. Those issues were i) capacity building of the stakeholders ii) education and awareness raising iii) maintaining the sanctity of the National Park iv) benefits beyond boundaries v) research on socio-ecological aspects vi) uncertain financial sustainability vii) Park infrastructure, and, viii) monitoring and evaluation system while the Convention on Biological Diversity Programme of Work on Protected Areas remains a cross cutting issue. The issues were prioritized during consultations for preparation of the Management Plan coincides with those already highlighted by the CBD in its Programme of Work on Protected Areas.

The vision is to protect the integrity of natural ecosystems in and around the Chitral Gol National Park. The main highlights are the capacity building of staff and communities; strong training and Community Activists programme; the collection of baseline data on the adjacent areas; provision of better habitat to the wildlife beyond the boundaries of the Park, and research facilitated through a Research Review Committee. The establishment of the Research Review Committee would overcome the problems of physical isolation and remoteness that discourage researchers to stay in Chitral, while the plan has adequate provisions to build local capacities keeping in view the practical aspects.

In order to ensure financial sustainability, the imposition of a visitor fee, allowing trophy hunting inside the Park and training of locals for ecotourism have been proposed. For

sustaining the community livelihoods ecotourism, enterprise development, including collection of baseline data on non-timber forest products, have been included.

It is expected that the Plan will pave the way for achieving the vision of the Park and secure its biodiversity for the future generations.

3. Description of the Park

3.1 Name and Location

Chitral Gol National Park (CGNP) is located in District Chitral in the North Western Frontier Province (NWFP) just adjoining the district headquarters Chitral town. Chitral town is the remotest district of northwestern Pakistan that is approachable by road and air.

3.2 Accessibility

The Park is accessible from Chitral by foot or by vehicle through a jeep road (up to Chaghbini Hut, 18 km from Chitral town) on its northwestern side. Many mountainous foot tracks also lead to the Park.

To reach Chitral from Peshawar or Islamabad, one has to travel either through the Lowari Pass that is 3,230 m above sea level or through Lowari tunnel (8.75 + 2.00). In

winter, the Pass remained closed during winter months of November to mid April due to heavy snow. However, with the opening of Lowari Tunnel, Chitral will remain accessible round the year. Moreover, Pakistan International Airlines flights also connect Chitral with Islamabad and Peshawar. Regular daily public transport plies to Peshawar and Islamabad at fixed times. It takes at least eight hours and twelve hours to travel by road on personal transport from Peshawar and Islamabad respectively.

3.3 Topography

The area of the Park consists of highly rugged dissected mountains with steep slopes. The elevation varies from 1,500 m at Hyrankot to 4,950 m at Dhuni Gol. Ishpedher also known as the White Mountain is at a height of 4,132 m above sea level. Gol, in the local language (Kowar), means a stream or a nallah and Chitral Gol is the only nallah originating from the National Park. Five perennial and several seasonal streams drain into Chitral Gol.

The Park is a narrow valley flanked by steep slopes and ridges. The valley runs for approximately 18 km before broadening into three sub valleys and a basin surrounded by cliffs and high peaks. The gradient varies from vertical slopes to 45°. The main watersheds draining into Chitral Gol are Merin, Tonghogh, Kasawir, Bakhtan Shal, Bironshal, Gokshal, Chhat, Duni and Dunduni. Chitral Gol, the principal stream that comes from the Park, drains down into Chitral River near Chitral town.

3.4 Geology

No specific geological study for the CGNP has been undertaken. However, the Forest Working Plan for Chitral 1964-1988 by S.M. Ayaz gives a good account of the geology of the district according to which the greater part of the area is composed of rocks of the upper Paleozoic age, consisting of quartzite, limestone and shale. These rocks were intensely folded and metamorphosed by various intrusions. Considerable strike faults have permitted intrusion of narrow strips of rocks of much later age; this faulting is associated with large masses of intrusive gneissose granites and associated igneous rocks that have, in many cases, caused further metamorphism.

3.5 Soils

No scientific soil analysis has been done so far for the Park. Information gathered from secondary sources reveals that soil formed by the disintegration of the above-mentioned rocks is generally fertile and varies from clayey loam to sandy loam. It is porous and fragile and rainwater easily washes it away. The steep and precipitous slopes are highly susceptible to this action. Therefore, the soil in such localities is often shallow with frequent rock out-crops. The moderate gradients bear deep and rich soil. In some of the localities where grazing pressure is high, the soil loses its characteristic porosity due to excessive trampling.

3.6 Climate

The climatic observation stations based in Chitral are located at Balach near the airport and at Mirkhani near Drosh 40 km downstream of Chitral town. Both these stations are located at much lower elevations than the lowest point of the Park, thus the data recorded cannot be extrapolated to depict the climate of the Park. Moreover, Drosh receives rainfall from the adjoining monsoon zone while the Park lies outside the monsoon zone. The Park shows a marked variation in vegetation that corresponds to elevation.

3.7 Water Supply System

Chitral Gol is located in the west of Chitral River and pours into it near Shahi Palace at Zargarandeh village. In the Park, the perennial sources of water are snow, rainfall and springs. Chitral Gol stream originates from the top of Gokhshal Pasture, locally known as Gukhshalu-Tek, and, besides the Chirtal Gol valley, drains the entire area of Chitral town and adjacent villages.

3.7.1 Main Tributaries of Chitral Gol

There are five main tributaries of Chitral Gol as given below:

Dundini Gol: It is one of the main tributaries of Chitral Gol and originates from the pasture of Dundini (used as summer pasture) and joins Duni Gol and Gokhshal Gol near west of Gokhshal. It flows from east to west.

Duni Gol:It flows parallel to Dundini Gol and originates from the northeastern pasture of Chitral Gol called Duni.

Gokhshal Gol: It originates from the top of the Gokhshal pasture and is the primary source of Chitral Gol. It flows from north to south.

Ishpehder Gol: It is the northwestern tributary of Chitral Gol and joins the above-mentioned three tributaries near the Kasawir Lasht.

Merin Gol: It flows from west to east and originates from the Bironshal pasture. It courses down to Chitral Gol and on its path collects water of numerous springs and pours into Chitral Gol at the place of Merin.

All the above-mentioned tributaries of Chitral Gol are perennial except Ishpehder Gol that is mainly dependent on springs and amount of snowfall during the winter, but in times of drought, it dries up.

The chief source of irrigation and potable water in Chitral town is the Chitral Gol from which irrigation channels have been carved to irrigate agricultural fields and provide potable water in different villages in the north and south of Chitral Gol.

Details of the perennial channels that originate from Chitral Gol are given below:

Singoor-Channel: It is the uppermost channel and emerges from the northeastern bank of Chitral Gol. The channel irrigates agricultural fields in Rehankot, Shaldane, Balach, Singoor and upper Goldoor villages. This channel is also one of the main sources of potable water in Rehankot, Chewdok, Shaldene, Balach and Singoor. It runs from south to north.

Hoon, Mughlandeh and Jung Bazaar Channel: It emerges from the eastern bank of Chitral Gol and is the largest of all channels. It provides water to almost the entire area of Chitral town. It provides irrigation and potable water to villages of Jung Bazaar, Mughlandeh, Dangarekandeh, Muldeh, Thingshen and Government offices in the locality. It flows from north to south.

Goldoor-Channel: It is the third most important channel carved with the purpose of providing irrigation and potable water to villages located on the west of Chitral Gol. It is situated below the Singoor and Jung Bazaar/Mughlandeh channel. It irrigates the agricultural fields of villages Goldoor, Zargarandeh and Shahi palace. It runs from north of Chitral Gol to east.

Muldeh-Channel: it is the lowermost channel supplying water for agricultural fields of Muldeh, Jung Bazaar, Mughlandeh, Hoon, Shiaqotek and Faizabad. It runs from north to southwest of Chitral Gol.

3.7.2 Water Quality of Chitral Gol Stream

No effort has been made so far to determine the quality of Chitral Gol water. However, over the years, no water-borne epidemic or disease has been reported in the area, which shows that its water quality falls within the permissible water safety criteria. Fresh water fish are frequently found in Chitral Gol stream that substantiates the fact that its water is suitable for aquaculture practices.

Regular monitoring of the water discharge and silt load from all the tributaries of the Park could provide a good indicator of the ecosystem trends and results of the interventions. Conversely, water supplied by the Park could symbolically be used to gather support for the conservation.

However, no systematic study of the water quality including determining PH of the water, amount of total suspended solid, seasonal flow etc has been conducted. Such study will help in promoting aquaculture in the area alongside planning for future development activities.

3.8 State of Boundaries

The only legal document depicting the boundaries of the Park is the notification of 1984 that declared the Chitral Gol National Park as having an area of 7,750 Ha. These boundaries are as under

North : Ridge separating Lutkoh Tehsil and part of Singoor Gol

West : Lutkoh Tehsil and part of Chimersan Gol

South : Moleen Gol and Chimersan Gol

East : Singoor Gol and Chitral River

3.9 Agricultural Areas

No communal or private agricultural areas exist inside the Park except the lands cultivated by the former Mehtar. The matter regarding the fate of the agricultural lands is sub-judice.

3.10 History of Management

The history of management of Chitral Gol as Hunting Reserve of the royal family can be traced as far back as the last quarter of the nineteenth century. Mehtar Shuja-ul-Mulk banned goat grazing in Gokhshal in 1907. The shooting houses at Kasawir, Bironshal and Gokhshal were constructed in 1912 and at Bermughhlast in 1934 while the hut at Merin was constructed much earlier. There was no management per se during the rule of the Mehtars except for strict control on hunting that was a prerogative of the royal family.

In 1895, the British Empire extended her authority to Chitral and published the first Gazetteer in 1902. The status of Chitral Gol was shown as *Mehtari Shikargah (royal hunting ground)*. The Shikargahs other than Chitral Gol were given under the control of Hukama (Naib Governors), Sheer Brars, etc. while Chitral Gol remained under the direct control of the Mehtar.

During the Mehtar rule, hunting was regulated through the designated personnel of the state. During the transitional period (1969-1974), due to uncontrolled hunting, the Markhor population declined tremendously. Urial, locally called *Ron,* was extirpated. The Snow Leopard, frequently seen in the past, was brought near to the verge of extinction. The Khyber Pakhtunkhwa (NWFP) Wildlife Department declared Chitral Gol as a Wildlife Sanctuary in 1979 and as a National Park in 1984.

3.11 Legal Position

According to the law of the state, prior to its accession to Pakistan, all lands located above the water channels were properties of the state. This law was also adopted as such by the Government of Khyber Pakhtunkhwa (GoNWFP) after the merger 1969. Therefore the area now comprising the National Park was state property of the then state of Chitral. In the 1880's it was set aside as a royal hunting reserve. Historically the rulers imposed strict control on poaching. The violators were arrested, fined and their cattle confiscated in lieu of hunting Markhor or the Urial. Some of the inhabitants of the adjoining villages were granted concessions for grazing, some records also show that some concessions were given to the employees of the ex-state for grass cutting and grazing.

Chitral was merged with Pakistan in 1969 resulting in disputed ownership of Chitral GoI; even the Forest Working Plan of 1964 does not depict Chitral GoI under any category. The ex-rulers continued to control and draw benefits from the Park even after merger with Pakistan. The strict control on hunting Markhor by the ex-rulers kept the population of this species vibrant and numerous. However, after the merger in 1969 and loosening of control of the Mehtar, indiscriminate hunting brought this animal to the verge of local extinction. At the time of merger with Pakistan, the President of Pakistan, through an order, notified a list of private properties of the ex-ruler. The list shows agricultural lands located inside Chitral GoI as his property. This stand was also accepted in the report of the Land Disputes Enquiry Commission 1971[1]. The ex-ruler filed an appeal against the declaration of Chitral GoI as a Protected Area and also against declaring only 73 chakoram (chakoram was a land measurement unit of the state of Chitral that approximately equals to one fourth of an acre) land located inside the park as the Mehtar's private property. However, the Mehtar's claim the entire park as his personal property. After a lengthy legal process, the Supreme Court of Pakistan finally ordered the deletion of the words '73 chakoram' from the official notifications. Consequently, two different interpretations of the court order emerged; the Wildlife Department interprets this deletion as its ownership of the entire park, while the Mehtar views it as an acceptance of his title on the entire park.

In 1994, another entity, the local villages, emerged as a party in this litigation. These communities later took the shape of the eleven custodial communities referred to in the Project documents. (The eleven custodial communities living near the park boundaries that later formed the Village Conservation Committees - VCCs). These communities claim that their rights and privileges inside the park be acknowledged. Historic evidence shows that the Mehtar rehabilitated the residents of five villages namely Balach, Shaldene, Rehankot, Chewdok and Zargarandeh. He, however, does not acknowledge any rights of those villages except those granted in writing to specific persons who served the State. The case of the remaining six villages, i.e. Shahmirendeh, Jang Bazar, Thingshen, Mughlandeh and Dangrekandeh, however appears different, as these are old established settlements. The Mehtar is of the view[2] that the six old communities used the Park resources to a limited extent, while those who worked for the Mehtar were given concessions free of cost. Under no circumstances, was any community allowed hunting in the Mehtar's era. However, the communities are of the view that they have historic concessions in the Park area and that the court should safeguard their rights in any decision.

The Forest Department extended scientific management to the district in 1958 when a Range Forest Officer was posted in the then State, before its formal merger with Pakistan. After merger, all forests, except the CGNP, were taken over by the

[1] Government of the North Western Frontier Province. Report of Dir, Swat and Chitral Land Disputes Enquiry Commission PART III Vol. I, 1973
[2] Personal communication 2007

Government of Khyber Pakhtunkhwa and were declared as Protected Forests in 1975. The first approved Working Plan 1964-1988 does not even reflect Chitral Gol in the list of forest areas under the control of the Forest Department.

The case of ownership of the Park as well as rights and privileges is sub-judice in the court of law. The Technical Assistance Team has provided scenarios of different probabilities, following the court decision, to the Wildlife Department.

3.12 Rights and Concessions

During the Mehtar's era, Chitral Golwas not only used as a *Shikargah* but also for agricultural purposes, grazing, fuel wood and fodder collection, and as a summer resort. The Mehtar had also extended privileges of grazing, fuel wood and fodder collection, etc. to the people living near Chitral Gol. The villagers were given special permission to graze cattle in the pastures without the levy of any tax (Qalang), etc. Chitral Gol remained in strict protection under the control of Mehtar until 1969.

There is a difference of opinion on the ownership of the Park between three stakeholders, namely the Khyber Pakhtunkhwa Wildlife Department, the ex-Mehtar and the Custodial communities. To keep his claims of ownership alive, 150 goats of the ex-Mehtar presently graze in the Park area. The communities have decided not to graze goats inside the Park while villages like Zargarandeh have given up keeping goats and other cattle as these villages are now urbanized, and the residents could hardly afford a goat shed. Gradually the people tend to be giving up goat herding as a profession in general due to the availability of better employment opportunities.

Notwithstanding the situation, the fact remains that the settlement of the rights has to be determined under the law. The Land Revenue Act 1967 as well as the Forest Act 1927 provides the basis and procedure of land settlement including the forested lands. The proceedings for Land Settlement in Chitral are in process. This settlement proceeding in the court of the Settlement Commissioner is the forum for pleading the case for the National Park, Buffer Zones and Conservancies.

3.13 Law Enforcement

It is logical to think that increase in the human population would result in an increase in dependence and the pressure to use Park resources. So naturally, the dependence on Park resources also increases. However, with better-equipped and motivated Wildlife staff, the pressures, especially poaching, are not a threat. This may also be attributed to a trend of urbanization of the custodial communities that is resulting in a lessening of dependence on natural resources.

The following tables show the protection efforts of the field staff of CGNP in protecting the Park and its resources.

A summary of total offence cases registered from 1988 to 2017 in CGNP and revenue generated through different means from CGNP are given in Tables 1 and 2, respectively.

Sr. No.	Nature of Offence	Total	Finalized	Pending
1	Wildlife Poaching/Hunting	04	02	02
2	Grazing	154	48	119
3	Fuel Wood Cutting	144	97	57
4	Timber Extraction	Nil	Nil	Nil
5	Non-Timber Forest Products (NTFPs)	Nil	Nil	Nil
6	Others	Nil	Nil	Nil
	Total	302	147	178

4. Flora and Fauna

CGNP harbors about 42 recorded species of mammals, more than 173species of birds and 3 amphibian and 13 reptile species.

Altitudinal variation, soil and availability of water determine the vegetation and the distribution of most fauna within the National Park. Numerous ravines and deep valleys provide the habitat to the flora and fauna. There is remarkable variation in floral composition from the alpine zone and tree line to mid range forests and the streambeds. Oak forests cover 20%, while 18% is pasture. Chilghoza and Deodar occupy 13% each. Juniper and steppe occupy slightly less than 4% each while 29% is barren. The diversity of species is the highest in Daleem followed by Tonghogh, Gokshal and Bironshal while it is the least in Booster, Sardoayeuch, Thoosi and Paspon.

4.1 Vegetation

The first Forest Working Plan gives a good account of the forest types in Chitral while the Pakistan Forest Institute Peshawar conducted two studies on the range resources of the Park in 1974 and 1978. The Forest Working Plan 1964-88 provides a vivid account

of the forest types in the district; this plan however, excludes Chitral Gol. It identifies six forest types namely i) Dry temperate coniferous forests ii) Deodar forests iii) Oak forests iv) *Fraxinus xanthoxyloides* open scrub v) Sub alpine scrub, and vi) Alpine herbaceous vegetation.

The following vegetation classes are found in CGNP:

4.1.1 Baloot (Quercus baloot) Forest

This type of forest spreads around the lower parts of the slopes in the form of a scrub range type extending into main Chitral Gol. The altitudinal range of this form is about 1,220 m to 1,830 m on hotter aspects. In this range, it is found almost in the pure form at lower elevations. However, on cooler aspects, the crop is open and soil is mostly bare. Un-decomposed leaves of Baloot are mostly found under the trees with seeds. Germination is very poor under the trees as well as in open areas. Signs of heavy browsing and lopping can be easily judged from the state of the crop.

Floristic composition

(a)	*Upper storey*	*Quercus baloot*
(b)	*Second storey*	*Pistacia khinjik, Fraxinus xanthoxyloides*
(c)	*Third storey*	*Caragana ambigua, Sophora sp., Cotoneaster sp., Astragalus, spp., Daphne sp.*
(d)	*Grasses*	*Stipa spp., Andropogon spp., Cymbopogon sp.*

Quercus baloot is a monoecious species, prefers mean annual rainfall of about 800 mm and altitudinal range between 1,600 - 2,100 m. It grows well on well-drained sites having light sandy or medium loamy soils of alkaline or neutral reaction. It can tolerate moderate salinity and shallow soils having depth of less than 50 cm.

Average height of the stand, depending on the site, was found between 10-13 meters. Trees at optimum sites in the Park had thorny and spiny leaves, erect and straight bole and spreading crown with low base. The growth was generally stunted and shrubby at lower reaches. It was a rare sight to see a single stem tree.

4.1.2 Deodar (*Cedrus deodara*) Forest

Deodar trees are mainly restricted to cooler and somewhat moist sites between 1,830 - 2,745 m. Almost pure Deodar patch of somewhat open canopy with moderate height was observed below Bhader Sher Rogh between 2,440 - 3,130 m. Microclimate of the area is comparatively moist. Over-mature trees tend to predominate with little regeneration on the open and drier aspects and ridges. There was no second storey but usually Ash (*Fraxinus xanthoxyloides*) and Oak (*Quercus baloot*) are available at suitable sites. However, drought-resistant associates of moist Deodar are seen as undergrowth.

Floristic composition

(a) *First storey* *Cedrus deodara*

(b) *Second storey* *Nil*

(c) *Third storey* *Salix sp., Viburnum cotinifolium, Artemisia sp., Cotoneaster bacillaris*

(d) *Grass* *Dichanthium annulatum*

Cedrus deodara (Deodar) is a large evergreen tree with conspicuous dark green and in some cases silvery-blue foliage. Up to a younger age, the tree has a conical crown with a definite leading shoot. The flat and broad crown shape is common in the area. It is mostly due to injury to leading shoot and action of wind in exposed situation. Deodar is typically a gregarious tree and is mostly found in pure form. It is frost hardy and moderately drought resistant. It is light demanding but can tolerate dense shade when growing under arid conditions. It prefers well-drained soil but can grow even on rocks and cliffs with thin soil layer. The species is adapted to a precipitation zone of 1,000 - 2,000 mm/year with a temperature range of minus 20 to 30°C and above 1,200 m elevation.

Deodar grows in the CGNP at an altitude between 1,500-3,000 m on cooler, northern exposures and in the valleys. The observed height was between 20-35 m and diameter between 0.7-1.8 m depending upon site. The pure stand has a quite open canopy on steep slopes. Sometimes, it is found in groves of few trees with rock rubble all around. It is very slow growing in the Park area with mean annual increment (MAI) of 0.5 - 1.5 m^3/ha/annum[3].

4.1.3 Chilghoza (*Pinus gerardiana*) Forest

Pinus gerardiana is found growing between 2000 – 3500 m in pure form on exposed and precipitous slopes. It is localized in the inner valleys of the Park and found mixed with Deodar and Baloot on southern slopes at all elevations. The tree had more than one stem, low branching pattern but capable of attaining considerable girth.

The tree endures severe drought of summers and can thrive in winter snow. It mostly forms uneven aged forests with very open canopy. Most trees in the CGNP are growing in pockets of varying sizes. Occasionally it is also found growing on barren and steep rocky areas. Environmental conditions indicate that it banks little on fertility and moisture of the soil. Being resinous, its wood has little commercial value but its seed has high value.

Floristic composition

(a) *Upper storey* *Pinus gerardiana, Juniperus excelsa*

(b) *Second storey* *Pistacia khinjuk, Fraxinus xanthoxyloides*

(c) *Third storey* *Prunus eburnea, Lonicera quinquelocularis, Caragana*

[3] R. M. Zareef Director Pakistan Forest Institute Peshawar, Preliminary Assessment of Vegetation, 2003

	ambigua, Rosa moschata Daphne oleoides, Hippophae rhamnoides, Astragalus spp., Artemisia maritime
Grasses	*Thymus serpyllum, Andropogon sp., Stipa sp. Chrysopogon sp., Pennesitum spp.*

Chilghoza is generally considered as a gregarious tree, but in the Park, it was found in the form of an open forest type. Low precipitation and plucking of cones in the past appear to be the most common cause of its scattered occurrence. It recurrently overlaps with *Quercus baloot* leading to complete absence at lower elevations.

Pinus gerardiana found in the Park is a moderate-sized evergreen tree that is highly branched. It generally attains a girth of 1.8 - 2.5 m and a height of 15 – 20 m, but very occasionally attained a girth of 4 m and height of 25 m. On exposed and shallow soils and at altitudes above 3,000 m, it is highly stunted. Average yield of edible seeds is 10 kg per tree per year.

4.1.4 Dry Zone Juniper (*Juniperus excelsa*) Forest

An open forest of Juniper is also found mixed with Chilghoza and Deodar at elevations above 2,700 m. Tree size decreases with the increase in elevation, slope and bareness of surface. It immediately adjoins Deodar and Chilghoza zones on drier and steep slopes. Juniper trees in the Park do not attain large dimensions but have pronounced taper and have branched at the ground level. These branches provide good shelter and ground cover to wild animals. The growth of young plants was found around the older trees in dense patches because of thick humus layer, shade, and moisture.

The dwarf Juniper scrub (*Juniperus communis*) is the other prominent specie, which grows up to the snowline. The species and other associates beyond this line have been reduced to a mat-like structure because of low temperature, other adverse climatic conditions and snow. The pressure of browsing in such area is pronounced.

4.1.5 Blue Pine (*Pinus wallichiana*) Forest

This type is hardly of the extent and number to be considered as a separate zone. It is mostly confined to the northern aspects and at higher elevations near tree line where the site conditions are cool and moist. Some trees of Fir (*Abies pindrow*) and Birch (*Betula utilis*) are seen at suitable places.

4.1.6 Willow (Salix spp.) Forest

The willow forest exists in patches on grounds where the slope is moderate and enough moisture is available. It is commonly found in the form of dense thicket at

higher elevations and medium-sized trees with spreading crowns at lower elevations. Along streams, one can find *Myricaria spp.* and others of the climate. The most common species are *Salix oxycarpa and Salix wallichiana*.

4.1.7 Pastures

The dry zone pastures are mostly found above 4,000 m. It is a shrub-like formation often composed of quite dense cover of 0.5 to 1.5 m height with a limited number of species, mostly deciduous with small leaves. It also includes evergreen Juniper and sometimes *Rhododendron spp.* and *Ephedra sp*. The stems are generally limber and highly adapted to snow pressure.

There is a great deal of species segregation with site variation with respect to availability of moisture and its flow. Dwarf prostrate *Salix sp.* is common. In addition to these, there is a good amount of mainly perennial herbaceous flora in open areas including palatable grasses. With the elimination of most of the trees and shrubs on comparatively flatter and easier grounds, sizeable patches of herbaceous pastures have developed with the passage of time, especially on damper soils. These are rich in alpine flora including many widespread genera of grasses. Unpalatable plants such as woody *Artemisia* and *Lonicera* and others such as *Aconitum,* are though favored, but often trampled.

4.1.8 Valleys and Riparian Zone

Valleys are often marked by the availability of water streams or springs that provide the water necessary for plant growth, which consequently attracts wild animals and birds. These valleys are distinct types and are narrow and linear. The important valleys situated at lower elevations include Merin and Kasawir at 1,980 and 2,180 m height respectively, characteristically supporting pure oak forests. Cultivated fruit orchards and shade trees grow in the agricultural lands of the ex-Mehtar. Trees include *Platinus orientalis*, J*uglans regia* and fruit trees like *Prunus amydalus*, P*yrus malus* and *Morusalba* that attract a variety of birds and flying squirrels. Cultivated crops also attract large mammals.

The Riparian zones are scattered at the narrow bottoms of the three valleys and the main gorge of the Park with their unique floral and faunal composition. This vegetation type deserves to be placed in a separate class. A schematic diagram on the altitudinal vegetation variation is given below.

4.1.9 Cultivated Plants

Two agricultural crops per year are raised in the agricultural areas around the park; these are classified as wheat/barley sown in November and harvested in June while maize/rice with lentils is sown in July and harvested in September/October each year. The Mehtar used to cultivate his agricultural lands

around Merin, Kasawir, Bronshall and Gukhshall located within the Park. Agriculture is still practiced on Mehtar's lands in Merin and Gokhshal. The main agricultural crops produced from these lands are maize, potato and fodder crop like alfalfa.

4.2 Minor Forest Products

4.2.1 Hing

The plant of Hing (*Aesculas nebrodens*) is locally called "Rao". It is found in almost all the hills of Chitral. Locally it is used as salad but is not processed for marketing. The processed Hing is an expensive spice and is imported from Afghanistan. The local Hakims use it in medicines; locally it is inhaled for the treatment of unconsciousness and livestock diseases. Hing is imported in bulk from Afghanistan. It is a traditional spice in Indian foods and is known to be good for flatulence when cooked with beans and lentils. It is extracted by piercing the stem: a technique similar to that for opium extraction. Dried plant juice called Hing sells locally at least for Rs. 3,200 per kg. There is a big potential to explore marketing of this spice as it can provide an alternate source of living to the custodial communities.

4.2.2 Wild Figs (Ficus Sp)

Wild fig trees are common along the streams and channels in the CGNP and Chitral town. The local people also graft it with quality fig. It is a popular fruit and eaten fresh during July-August. Being perishable, fresh figs never reach the market. The plants are abundant along the Chitral Gol stream. Local people used to dry the fruit for use in winter, but the custom in urban Chitral stands abandoned while it still prevails in rural areas like Kuju and Koghuzi. Fresh fruit can fetch very high price if properly graded and marketed in the big cities. Dried figs of a developed grafted variety are popular throughout Pakistan in the winter and fetch handsome prices ranging from Rs. 500 - 900 per kg. The tremendous potential of marketing this fruit that grows wild in the CGNP and in the surrounding villages has not been explored. It also has a ready market and needs to be explored for income generation for the custodial communities. The Agriculture Department, Chitral indicates that fig grafting was undertaken in the 1970's only once.

4.2.3 Mulberry (Morus alba)

Mulberry is a popular fruit in spring. It has a high nutritious value. It is eaten fresh while the dried fruit is popular in winter. Traditionally its paste mixed with walnut is relished in the extreme cold of January. Not many years ago, mulberry trees were planted all over urban Chitral. However, with the population explosion, the

trees are on the decline. Mulberry syrup is widely used to cure bronchial diseases. Red and white varieties of grafted mulberry are cultivated in Chitral and need regular watering, as the rainfall is inadequate.

Its wood is used as fuel and for making agricultural tools like ploughs, etc. Straight and knot-free, mulberry timber has a high market value locally for furniture making. Due to firewood shortages in Chitral, mulberry firewood is brought from the valleys like Bumborate, Rumboor, Shishikoh, and Birir.

Guests are served fresh mulberry while the dried fruit sells at an average rate of Rs. 100 per kg. The trees grow along the agricultural fields and around Chitral Gol, Bermughhlast and Merin in the CGNP. There is a great potential to grow quality mulberry and the communities can make a good living from its sale, as it has a ready market.

4.2.4 Chilghoza

Pinus geradiana grows at elevations between 2000 - 3500 m in the CGNP. Its edible seeds are highly valued as dry fruit. In the past, unwise exploitation of cone bearing branches has damaged the trees badly. However, the PAMP project has been instrumental in reducing pressure and the trees appear to be recovering fast.

4.2.5 Markhor Rings

Traditional jewelry of Chitral includes rings made of Markhor horns. However, with the passage of time and better control on hunting/poaching by the Wildlife Department, the horns are no longer available. A few jewelry shops claimed selling of Markhor rings however, on investigation it was found that the Markhor horn has now been replaced by cattle horns. The shops, however, continue to publicize that the ornaments are traditional.

4.2.6 Non Timber Forest Products

Resins and vegetables are also collected on a large scale during spring and early autumn seasons. Vegetables are mainly used as food supplement domestically. Resins, including that of Wild Almond and Deodar, are collected during early spring and late summer. Some of these are used to treat skin and gastrointestinal diseases. Resin of Wild Almond is chiefly used to prevent skin ruptures, especially that of heels and as a natural cleanser to ensure healthy and silky hair. Local women prefer resin to shampoo to avoid dandruff. A large number of medicinal plants are collected from the CGNP and the buffer zones.

4.3 Wildlife and other Fauna

Extensive studies have been made by PAMP during the period 2003-7 and the following reports have been produced

ii) Small Mammals of the Park

iii) Birds of the Park

iv) Amphibians and Reptiles of the Park

v) Markhor Population Studies

In addition, the Snow Leopard survey team, in collaboration with the communities, and International Snow Leopard Trust (ISLT), conducted surveys of Snow Leopards using sensitive cameras installed in the Park since May 2006. The 20 cameras took altogether 215 pictures during roughly 8 weeks (Table 1). Four photos of Snow Leopards *(Uncia uncia*), 16 of Wolves (*Canis lupus*), 3 of Jackals (*Canis aureus*), 7 of Foxes (*Vulpus vulpus*), and one of a suspected Leopard cat[4] (*Prionailurus bengalensis*) have been recorded making the overall carnivore capture rate 2.69/100 photo trap-days.

Following is a brief account of the results of the studies. The flagship species Markhor and Snow Leopard have however been studied extensively and dealt with separately:

4.3.1 Small Mammals

With the exception of Ziarat Balochistan, Chitral Gol National Park is a unique terrestrial ecosystem regarding small mammal species diversity that is comparable to any similar ecosystem of the world. This diversity is mostly affiliated to Palaearctic origin whereas some have Oriental origin such as Himalayan Otter (*Lutra lutra)* and few like Asiatic White-toothed Shrew, Grey Long-eared Bat and have Indo-Malayan affinity. A total of fifteen species of small mammals, including one species each of insectivores, chiropterans and lagomorphs, three species of carnivores and nine species of rodents, were documented from the Park (Table 3). A single species of shrew, the Asiatic White–toothed Shrew (*Crocidura pullata*), was found.

Table 3: Number of Animal Species Captured and/or Sighted during June 08 – June 26, 2004 in Chitral Gol National Park

Serial No.	Name of Species	Captured	Sighted	Total	Abundance (%)
1	*Crocidura pullata*	1	0	1	0.53

[4] Personal communication by Jaffar ud-din, WWF Chitral and verified by Altaf Ali Shah, Deputy Ranger, Chitral Gol National Park, KP Wildlife Department to Syed Mehmood Nasir author: author of the original Management Plan.

2	*Plecotus austriacus*	6	5	11	5.79
3	*Vulpes vulpes griffithi*	0	6	6	3.16
4	*Martes foina*	1	3	4	2.10
5	*Felis manul*	0	1	1	0.53
6	*Lepus capensis*	0	4	4	2.10
7	*Eoglaucomys fimbriatus*	2	6	8	4.21
8	*Marmota caudata aurea*	0	8	8	4.21
9	*Dryomys nitedula*	6	0	6	3.16
10	*Apodemus rusiges*	89	0	89	46.84
11	*Rattus turkestanicus*	8	0	8	4.21
12	*Mus musculus*	1	0	1	0.53
13	*Calomyscus bailwardi*	21	0	21	11.05
14	*Cricetulus migratorius*	1	0	1	0.53
15	*Alticola roylei*	21	0	21	11.05
Total		**157**	**33**	**190**	

Small mammals are of great value for the Management Plan. Firstly, they act as secondary prey for the large carnivores, especially the snow leopard, in times of scarcity. Secondly, they show sensitivity to climatic conditions. By careful monitoring of their range of occurrence, they can act as indicator species to detect climate change.

During the 2004 surveys, four new species were recorded for the first time: the Migratory Hamster (*Cricetulus migratorius*), Forest Dormouse (*Dryomys nitedula*),

Long-tailed Hamster (*Calomyscus bailwardi*) and Asiatic White-toothed Shrew (*Crocidura pullata*).

Shafique 2004 has divided the Park area into three major zones with regard to small mammal distribution. The Oak – Pine communities with two species of rodents, House rat (*Mus musculus)* and Turkistan Rat (*Rattusturkestanicus*),are restricted to the low lands of the Park that occur respectively at 1,500 m and 2,200 m altitude. Juniper– Cedar – Pine communityin the middle ranges of the Park is notable in having a more diversified mammalian fauna than any other area in the Park namely, Mouse-like Hamster (*Calomyscusbailwardi*) and Royle's High Mountain Vole. (*Alticola royle*i). Juniper – Betula communityexistsnear the snow line at 4200 m altitude. Three species of rodents are found common in this community. Two of these species namely Himalayan Wood Mouse (*Apodemusrusiges*) and Royle's High Mountain Vole reach a greater abundance; Golden Marmot is restricted to the community that was not found elsewhere in the lower communities.

4.3.2 Birds

The NP falls on the fourth route that extends from north to south of Chitral, thorough the Khyber Pakhutnkhwa via Safed Koh, Waziristan and down into Balochistan. Many truly Himalayan birds have been able to extend their range southwards through these mountains. The best examples are the Scaly-bellied Green Woodpecker (*Picus squamatus*), the Blue-whistling Thrush (*Myiophoneus caeruleus*), the Streaked Laughing Thrush (*Grarulax lineatus*), the Himalayan Tree Creeper (C*erthia himalayansis*) and the Simla Black Tit (*Parus sufonuchalis.*).

After comparisons with various surveys, a final checklist of 173 bird species, representing 37 families, has been prepared for the Park. Out of these 44.96% were common, 23.70% were frequent, 16.91% abundant while 9.25 and 4.62 percent were scarce and rare respectively. Only 2.31% were very abundant. The residents are 32.95%, while the summer breeding population is 35.84%. 20.81 percent are winter visitors, 8.67 percent double passage migrants and 1.16% summer visitors, while 0.58% are year round visitors in the Park.

Some interesting birds of the Park are the woodpeckers that live in tree cavities and snags. The various zones of the Park provide adequate nesting sites for the birds. One of the bird indicators of healthy ecosystem in CGNP is the magnificent Golden Eagle. It eats diurnal rodents, lagomorphs, marmots and birds. It is said that it is capable of killing larger animals as well. Golden eagles remain in their range for a long period. Eurasian Scops Owl (*Otus scops*), Collard Pigmy Owlet (*Glaucidiun brodiei*), Tawny Owl (*Strix aluco*) and Himalayan Wood Owl (*Strix aluco nivicola*) are common, indicating abundance of rodents and larger insects.

4.3.3 Amphibians and Reptiles

Dr. Khalid Baig (Late), a herpetologist of the Pakistan Museum of Natural History, conducted a survey of reptiles and amphibians during June 2004. It is normally difficult to survey reptile because of their nocturnal habits. However, in this case, accessibility problems faced especially during night and a very short period of study made it even more difficult. Moreover, non-availability of reptile taxonomists in the country is another severe bottleneck.

Like the small mammals, reptiles' range of occurrence could also be used as an indicator of ecosystem health. Although no extensive studies on the amphibians and reptiles were conducted in the past, however, according to the baseline studies, 13 reptile species and 3 species of amphibians were reported.

Amphibian fauna of CGNP and its buffer zones is comprised of three species. *Bufo stomaticus* is distributed in Chitral and *Bufo pseudodarrei* is present inside the Park. Presence of *Bufo himalayanus* is based on the assumption as the species is widely distributed in Himalayan Mountains but has very spotty distribution throughout its range of occurrence. The high mountains and permanent snow provide the natural barriers for speciation of the lizards or divides them into disjunctive populations.
Laudakia caucasia, the most common species of the Park in rocky habitat was never reported earlier. *Scincella himalayana*, which presumably is the most common dweller of the forest habitat is frequent in the forest or alpine meadows.

The study conducted in the Park in 2003 revealed that most of the species found in the CGNP were not facing the threat of extinction and were found in the adjoining areas of Pakistan and other neighboring countries. However, *Oxus cobra* has been included in the IUCN Red List as Data Deficient (DD) and *Varanus bengalensis* is listed in Appendix I of the CITES. The species otherwise are not endemic to CGNP though having very wide distribution.

Rock Agamas are the typical representatives of the rocky terrain of CGNP. Report of occurrence of *Laudakia caucasia* in CGNP for the first time indicates that the area acts as a corridor for the trans-boundary invasion of Afghan species. Secondly, studies of some of the specimens lying in different museums of the world reveal that the specimens of Himalayana – Badakshana group of Chitral are unique. The conclusion from the baseline amphibian studies clearly shows that detailed studies would lead to many scientific discoveries.

4.3.4 Large Mammals

The Markhor (*Capra falconeri cashmeriensis)* and the Snow Leopard (*Uncia uncia*) are the intensively studied mammals of the CGNP; little data, however, on other species like *Felislynx*, Red fox (*Vulpesvulpes*) and Wolf (*Canislupus campestris*) is available. However, it is believed that these populations are thriving.

Markhor

Chitral Gol National Park is the abode of the largest population of Kashmir Markhor in Pakistan. Due to its importance in the local tradition of hunting, it has many names in the local Kho language; Markhor is *Mroy*, male is *shara*, female is *mazaigh*, *batru* is a three year old male while a lamb is called *chhani*.

With better management, there is a remarkable trend of increasing population; estimated at 100-125 in 1970 (Schaller and Mirza, 1971), 225 in 1976 (Aleem 1976), 299 in 1977 (Aleem 1977), 397 in 1978 (Aleem 1979), 520 in 1979 (Aleem 1979) and 570 in December 2005 (Masood, 2006), 612 animals (Ahmed and Tariq, 2006) and in January 2007 (Salman and Hussain) the figure was 687. These figures agree with the census figure conducted by regular surveys conducted jointly by WWF-P and the Wildlife staff.

Rut season surveys were carried out on regular basis since 2003 for the Park. Table 4 gives the details of the survey results.

Table 4: Markhor Rut Season Survey Report 2003 to 2017 for CGNP

Year	Young	Yearling	Female	Male				Total
				C1	C2	C3	C4	
2017	In progress							
2016	605	345	575	235	195	197	215	2366
2015	502	328	448	211	174	181	211	2055
2014	429	263	484	102	114	120	210	1722
2013	739	279	599	114	38	50	193	2012
2012	430	172	352	105	58	60	187	1364
2011	348	142	277	92	48	58	195	1160
2010	273	159	332	67	38	33	170	1072
2009	314	152	329	65	60	58	168	1146
2008	325	146	268	61	32	40	112	984
2007	235	118	224	54	28	32	38	729
2006	198	87	176	51	25	25	30	592
2005	120	62	130	48	34	28	32	454
2004	162	95	158	37	27	20	18	517
2003	121	83	97	35	26	20	15	397

Key to age of males in years:

C1: 2 to 2.5 years old

C2: 3.5 to 4.5

C3: 4.5 to 6.5

C4: above 6.5

Based on the figures, there appears to be an annual increase of 18 percent. Based on the Range Management consultant[5] the Park can sustain 452 Markhor according to the carrying capacity.

The rut season survey carried out in January 2007 (Salman and Hussain) revealed a total population of 687 animals within the core zone of CGNP. The highest population was recorded from Merin Dehar hosting 229 Markhor at this interval of the year while the lowest concentration of Markhor population was traced from Olowak with 49 animals. Out of the total counted animals, male Markhors were 21.97% (trophy size 4.8%), young 33.63%, yearlings 14.26% and female 30.13% of the total population (Khan S., Salahuddin. 2007).

The lambing survey carried out in July 2007 revealed a total population of 660. Out of the total, male Markhor accounts for 17.25%, female 30.45%, young 35.30% and yearling 16.96% of the total population. The highest population was recorded from Phosdanili vantage point hosting 141 Markhor at this interval of the year while the lowest concentration was traced from Akhair Zaman vantage point with 3 animals (Salahuddin, 2007).

However, according to the latest survey conducted by staff of Chitral Gol Wildlife Division in 2016 the estimated population of local communities in core and buffer zones of CGNP is as follow:

Population of local communities

S#	Name of village/hamlet	Total # HHs	Total population	Literacy rate
Core Zone villages:				
1.	Singoor Shahmirandeh	240	1800	60%
2.	Balach	230	1730	65%
3.	Rehankot	210	1617	58%
4.	Shaledane	120	1000	65%
5.	Chewodok	195	1560	55%
6.	Goldoor	280	2100	67%
7.	Jang Bazar	298	2206	65%
8.	Mughlandeh	301	2260	66%
9.	Dangkarekandeh	132	1003	64%
10.	Zargarandeh	215	1600	68%
11.	Thengshen	149	1200	66%
	Total:	2370	18076	64% (avg)
Buffer Zone villages:				
1.	Rumboor	401	3140	42%

[5] Range Management Report, Inam ur Rahim, 2004

2.	Avirate Gol	225	1755	49%
	Total:	626	4895	46% (avg)

Survey results of 2006 reveal that the Snow Leopard is the top predator followed by the wolves while the survey of 2004 also lists the Lynx as a predator. Markhor, a flagship species, can be observed during summers in the Alpine zone, above the tree limit and below permanent snow zone. In snow season, it descends to the lower elevations along the oak forests. Pregnant females and those with lambs do not climb to the alpine pastures in summer. Most of this zone is on the steep and rugged mountain on the western edge of the National Park. Male Markhor seek shelter in summer on this almost inaccessible mountain. In this habitat, they are secure even from Snow Leopard. During summer months, the males slowly build their energy by grazing in high altitude pastures. These pastures are significant, as domestic ungulates seldom reach these difficult places. After gaining weight, they descend to lower heights close to the females to rut in December.

Females browse in the dry temperate forest zone during summer and remain with the herd during rut season and throughout winter. Some females may also visit high altitude areas. The pregnant females never ascend to the highland summer pastures. There is luxuriant growth of Blue pine, Junipers, Deodar, Chilghoza pine, Oaks, Walnuts and the common bushes of Artemisia, Ephedra, and Berberis, etc. Oak leaves are the preferred forage. Oaks grow abundantly in CGNP and these keep the Markhor females well nourished throughout the year. This results in frequent twin births. This is the indicator of the health of both eco-zones.

Outbreaks of Foot and Mouth and Black Quarter diseases occur sporadically in Chitral and the surrounding areas, while contagious diseases like Caprinae Pleuro-pneumonia and contagious Ecthema are also sporadic and commonly affect goats.

Snow Leopard

Snow Leopard is the flagship species for CGNP. It is highly cryptic and occupies remote inaccessible areas, making its study extremely difficult. Sound knowledge of its ecology, behavior and food needs is required for its conservation. The Snow Leopard and flare horned Markhor attract tourists, naturalists, and filmmakers from around the world to the CGNP. The Park is also noted for supporting healthy populations of Wolf (*Cannis lupus campestris*), Red fox (*Vulpes vulpes*), and Jackal (*Canis aureus*). Markhor remains the preferred prey of the Snow Leopard.

4.3.5 Extinct Species

Speciation and extinction are natural processes but human interference can cause rapid extinctions. The recent extinction of two mammalian species from the Park coincides with a social event, that is the merger of the ex State with Pakistan in 1969. While the Mehtar practiced strict control over hunting, the control systems of the new administration took some time to fall into place. This hiatus in wildlife control resulted in large-scale killing of the Afghan Urial (*Ovis vigneiblanfordi*) locally called *Ron* (*verkhalo* for male and *Keri* for female*).* There was a vibrant population of the Urial that could not resist poaching as efficiently as the Markhor, the former being less adept in steep cliffs. Large trophies of the Urial are still displayed in some houses in Chitral town that carry a sad reminder from the recent past.

Another species that could not withstand this testing time is the Black Asiatic bear (*Ursus thibetanus*). It is believed that the last bear was seen in the 1970's.

5. The People

5.1 Sociology and History of Settlement

The physical isolation of Chitral provides the basis for its cultural and ecological identity; bounded on the North and West by Afghanistan, on the South by Dir and Swat and the East by Gilgit. Ranges of mountains, often exceeding 6,000 meters, limit access to the lowlands of the country.

It is believed that Chitral has been inhabited for at least 4,000 years and the people belong to a dozen cultural groups and speak more than 14 languages. The custodial communities speak four languages namely Khowar, Kalash, Shakhanwar and Pashto. The national language Urdu is widely understood. Khowar ethnic group and language is dominant all over the district. The second most important ethnic group is the Kalash who inhabit the rugged Southwestern side of the CGNP. They migrated to Chitral from Afghanistan after refusal to accept Islam in the 10^{th} century.

It is not necessary to trace the early history of Chitral however, for the purposes of this Management Plan, it seems necessary to know the history of the last rulers i.e. the Mehtars, as that would help understand the area better. The Land Disputes Commission Report 1971 provides a wealth of information on the land ownership system. The same is summarized below:

The Kalash Kafirs ruled the Southern areas of the district from Arandu to Chitral. This rule extended to Broz, Ayun, Bamburet, Drosh, Shishi Koh, Janjerat, Swer, Rambor, Barir, Naghar and Ursun. There were at least two Kalash rulers in these areas. The Northern areas were ruled by the Kho dynasty while Kalash Kafirs ruled the Southern

parts of the district. The Rais dynasty during 1320 subdued the descendents of the Kho rule. In the South the Kalash Kafir rulers were defeated. This dynasty ruled Chitral for 300 years when they were supplanted by the Kator dynasty (the present Mehtars). While hardly any members of the Rais family exist today, the Kalash Kafirs persist in the valleys of Barir, Bamburet and Rumboor.

The British Crown made Chitral a salute state in 1931, awarded the title of His Highness to the Mehtar and made it hereditary[18]. The Mehtar chose accession to Pakistan in 1947 and the State Rule was terminated in 1969 when Chitral was declared a district of the Khyber Pakhtunkhwa.

5.2 Tenure

The land tenure system of Chitral district is different from that of the settled districts of other areas of the Khyber Pakhtunkhwa. Chitral has remained under some central authority for the last 800 years. Though one dynasty overcame the other, yet the power remained concentrated in a single ruler who enjoyed full authority over the lands in the State. The Kators divided society into various strata, the descendents of the near relatives of the first Kator ruler forming the Adamzadas of the first class. Those who did not belong to the ruling family, but ranked above the ordinary middle class, were the Adamzadas of the second class. The first class Adamzadas owned land while the second class had certain rights that the ordinary people did not enjoy. The third group was the middle class called Yuft who were allotted lands for the services rendered to the State. The fourth group comprised of Fakir Miskins, Mehnat Gar and others who did not own any land but cultivated it for the owners on share cropping basis.

This social stratification of the ex-State is well known to all the locals. The first three groups had permanent titles to land ownership. Similarly, all trees outside cultivated land belonged to the State and the local villagers could cut wood for their own use. However, a tax was imposed on wood cut for the purpose of sale in the market. Traces of history can still be observed in the district; former princes still reside in old fortresses and enjoy substantial landholding.

Through this system, the Mehtars derived the authority to deal with lands; in any manner they liked. Particular parcels were allocated to members of the royal family and the governors. The lands and small forts owned by various members of the royal family and governors are still present at some distance from the boundaries of the National Park. The main feature of interest to this Management Plan is that all non-cultivable lands in Chitral belonged to the State. Therefore, the Government of Khyber Pakhtunkhwa, being the legal inheritor of the Mehtar, inherited the title of all state lands.

The abolition of the State was peaceful, though there was some unrest regarding land as people tended to occupy lands on which they formerly worked as tenants or cultivated under a system of the ex-State. The Government of Pakistan appointed Land

Disputes Enquiry Commission immediately after the merger that helped avoid turmoil and unrest. Land Settlement has not been undertaken so far in Chitral. Oral evidence is accepted by the courts of law. Resolution of land disputes through court litigation is the normal routine.

5.3 The Custodial Communities

In order to prepare the draft Project, surveys of villages (custodial communities) influencing CGNP were carried out in 1996, which later culminated into a PC-1. That PC-1 was subsequently implemented. The number of households counted by then was 1,900 comprising of 13,000 persons. During the implementation phase of the Project, it was found that households of the custodial communities had increased to 2,370 with a total population of 18076 (source: Human Wildlife Conflictsurvey conducted by CGNP wildlife division 2016). The Project has also decided on how to address the areas falling in the North and Northwest of Chitral Gol at Manor Gol and Begusht. Negotiations were also in progress on ways and means to mainstream other adjacent villages into the Project activities. The Project provided an excellent testing ground to the notion that social change in favor of conservation can be achieved through social engineering. This has been translated into action by a set of Project interventions; the establishment of the Village Conservation Fund (VCF) with flows of funds from the Project and community contributions to the tune of 5% forming the backbone.

5.4 Profile of the Custodial Villages

ElevenCore Zone VCCs, three Buffer Zone VCCs and two Buffer Zone Conservancies surround Chitral Gol National Park. Detailed data of the individual VCCs highlighting their geographical locations, available assets, associated constraints, dependence on the park resources, natural resource use pattern/trends, socio-economic status etc is available in the Village Conservation Development Plans (VCDPs) prepared for each village of the core zone and buffer zones. Another important output of the Project is the Community Participation Manual that defines the roles and responsibilities of the stakeholders. These documents also provided guidelines for the Project interventions.

The custodial villages have similar problems and resources with some variations. Villages like Zargarandeh and Jang Bazar are largely urbanized with services and small businesses as the main occupation of the inhabitants. While agriculture still remains the main source of livelihood for the residents of Balach, Mughlandeh and Singoor, the Kalash and Sheikhans retain their traditional system of goat herding and cereal production. The Project has been careful not to make any intervention contrary to the religious and cultural practices of the communities.

The custodial villages face similar problems as the population is increasing and land becomes scarce. Pollution and other urbanization related problems that were unknown in the recent past are surfacing. Some villages had voluntarily given up goat herding in

the Park while others did the same due to the availability of better alternatives. Household energy needs, especially in winter, remain a nightmare as the fuel wood prices skyrocket; alternate sources of energy are not available or unaffordable.

In order to achieve its objectives, the Project organized the custodial communities and formed Village Conservation Committees (VCCs) and corresponding Women Village Conservation Committees (W-VCCs). Project interventions were/are made through these VCCs, including the major decision on disbursement of personal loans to the community members.

5.5 Village Conservation Fund

A major activity of the PAMP Project is the distribution of endowment funds to the communities through their representative VCCs. A bank account for each VCC is operational and its funds are placed in a Village Conservation Fund (VCF). These funds are to assist the communities to undertake activities that would promote livelihood opportunities and eradicate poverty. The underlying idea is that with the availability of alternate sources of livelihood, the communities' dependence on the Park also reduces.

A total amount of Rs. 30 M has been allocated in this regard by the project with a 5% contribution by the community members. The details of allocation of the funds are given in Table 5, while the details of loan recipients are given in Table 6.

Table 5: Details of Funds Allocated and Released to the VCCs and W-VCCs by the Project

S#	Name of VCC	Total Number of Households	Total Amount Allocated	Amount Released to VCC	Amount Released to W-VCCs
1.	**Balach**	163	2,445,000	1,905,700	47,500
2.	**Chewdok**	136	2,040,000	1,303,324	194,380
3.	**Dangrekandeh**	54	-	-	Nil
4.	**Goldoor**	190	2,850,000	2,213,500	47500

5.	**Jung Bazaar**	180	2,700,000	2,099, 500	Nil
6.	**Mughlandeh**	205	3,075,000	1,216,000	Nil
7.	**Rehankot**	128	1,920,000	1,506,700	47,500
8.	**Shahmirande h Singoor**	181	2,715,000	2,246,650	291,850
9.	**Shaldane**	59	885,000	720,100	47,500
10.	**Thingshen**	85	1,275,000	1,016,500	47,500
11.	**Zargarandeh**	112	1,680,000	1,391,500	215,500
12.	**Rumboor Kalash-gram**	350	875,000	331,000	78,750
13.	**Rumboor Sheikhandeh**	200	500,000	209,500	45,000
14.	**CRRBC**				
15.	**LRRBC**				
16.	**Awerate Gol**	**130**	**325,000**	Nil	Nil

Total	**2173**	**23,285,000**	**16,159,974**	**1,062,980**
Grand Total			**17,222,954 or say 17.2 M**	

According to the Community Participation Manual, the distribution of the VCF for the above villages has been fixed on a formula of 15% for the buffer zone communities and 85% for the core zone communities.

During the implementation of the Project, in the last year i.e. 2006-7 two new entities i.e. the Chitral River Right Bank Conservancy (CRRBC) and the Lutkoh River Right Bank Conservancy (LRRBC) also surfaced as VCF recipients. Resultantly the custodial population has increased manifold. This also means that the VCF funds allocated earlier would decrease for individual villages. In line with the Project objective to integrate the local communities into Park planning and management, the decision of selection of recipients, terms and period of the loan is taken by the VCC Presidents; however, the DFO Wildlife CGNP is a co-signatory to the cheques.

Table 6: Details of Loans Advanced to the VCC Members

S#	Name of VCC	Name of Loan Borrower	Total Amount of Loan	Enterprise Type
1	VCC Chewdok	1.Ibrahim	400,000/-	Motor Spare Parts
		2. Qazi Naseem	400,000/-	Shopkeeping
		3. Ibadullah	50,000/-	Construction of Market
		4. Dedar Gul	300,000/-	Motor Spare Parts
		5. Muhammad Jalil	50,000/-	Dry Fruits Shop
		6. Arshad	450,000/-	Barber Shop
		7. Muhammad Ayub	400,000/-	Cement Blocks Business
2	VCC Rehankot	1. Zahid Gul	300,000/-	Vegetable Shop
		2. Saeed Ahmad	200,000/-	Poultry Business

		3. Javaid Ahmad	200,000/-	Milk Business
		4. Niamat-ur-Rahman	300,000/-	Precious Stones Business
3	**VCC Shaldane**	1. Haji Ahmad	350,000/-	Shopkeeping
		2. Riaz Ahmad	127,000/-	Housing Business
4	**VCC Singoor Shahmirandeh**	1. Muhammad Naib Khan	200,000/-	Different Business Ventures
		2. Abdul Wasi	200,000/-	Sanitary Shop
		3. Muhammad Taib	300,000/-	Butcher Shop
		4. Muhammad Nazir	200,000/-	General Store
5	**VCC Thengshen**	1. Moulvi Fazlullah	350,000/-	LPG Business
		2. Akhtar Ali Khan	350,000/-	Fire wood Business
6	**VCC Zargarandeh**	1. Fazlur Rahman	350,000/-	LPG Business
		2. Masroor Ali Shah	350,000/-	Firewood Business
7	**VCC Rumboor**	1. Taleem Khan	60,000	Timber Business
		2. Taj Khan	60,000	Grocery, Walnuts and NTFPs Business
		3. Mohammad Sher	60,000	Grocery, Walnuts, Beans and other Agri-business

5.6 Nomads and Transhumant

The studies conducted under the PAMP revealed that nomads are not present in any form in the Park area; they no longer exist any where in the entire district. However, due to certain reasons, the former nomads (Gujar) are now transhumant with defined summer pastures and winter homes. Historic records of the Mehtar era, however reveal, that at some time, the Mehtar invited the Gujar[6] nomads into the ex-State. After the

[6] Chitral: An Integrated Development Vision, IUCN 2004, page 22. Gujar is an old Indian caste that traditionally herded cattle, goats and sheep. The caste retains its identity despite change in profession long time ago.

merger of the State with Pakistan, the Gujar nomads entered into lengthy litigation with the ex-Mehtar and finally were allotted propriety rights over lands after a compromise with the Mehtar. Keeping in view the harsh climate and the difficulties associated with moving the goatherds to other districts during winter, the end of nomadism is understandable. Gujar herders still graze goats outside the Park boundaries, in particular at Singoor Gol. In addition to their own, they also herd goats that belong to the adjoining villagers. Transhumant herders take advantage of the summer and take the goatherds and their families to the alpine pastures. The goat cheese produced during summer is transported back to the habitations. The Kalash culture places high value on the transhumant herders whose return before winter is celebrated.

5.7 Social and Cultural Values

Significant recent changes of farming techniques have also reached Chitral, though tractors are not very popular due to very small landholdings in inaccessible terrains. The only exceptions are the Kalash and the Sheikhans who retain a distinctive 'mixed mountain farming regime' of goat husbandry and cereal horticulture. A ritually sanctioned gender division of labor underpins the latter. Transhumance remains a thriving part of subsistence, unlike many other custodial communities of the CGNP, where herding in pastures has rapidly declined in recent years. The Kalash consider women as impure and do not allow them to stay in the alpine pastures.

The subsistence economy of both the Kalash and the Sheikhan has many similarities except that of rituals that is based on religion. The latter being Muslims while the former retains their old kafir culture. While the Kho communities are still also dependent on pastorals, due to better accessibility and education they are gradually giving up goat herding. All the communities representing the three cultures namely, Kalash, Kho and Sheikhan share the same perceptions, expectations and vision for the Park. All, while acknowledging the importance of conservation, also safeguard their commercial interests and opportunities.

A glimpse into the practices of the oldest social group - the Kalash - amongst the custodial communities who struggle to maintain their old culture, shows how important goat herding is in their religion.

A calendar of celebrations and festivals is a part of Kalash life. Each festival is related to a seasonal change, and revolves around the main pillar of Kalash economy i.e. the goat. Each goat kept by the Kalash has a name. They milk all the goats, calling out their names. The goat herders can tell the goats apart, even though they would all look the same to a non-Kalash. The Kalash celebrate a number of festivals that reflect the important position of the goat, two of which are mentioned below:

Joshi, the main spring festival, is held in May. All the houses and the temples of the goddess Jeshtak are decorated with walnut branches and flowers, and milk is

distributed to all the villagers. After this festival, they take the goats to the higher pastures and celebrate the arrival of spring season with new hopes and aspiration.

Death is a festival that is celebrated, for which the Kalash save grain, cheese and goats for serving the guests. Amongst the first things done by the near relatives of a dead person is to send a message to the pastures (in summer) for dispatching the required number of goats. These goats are slaughtered to serve mutton to the guests.

Goat herding has more than religious significance; it is the lifeline of the Kalash economy. The Government of Pakistan's policy is to protect religious minorities, and its obligations under Multilateral Environmental Agreements to respect the traditional lifestyle and knowledge of the indigenous communities under Article 8 (j) of the CBD. The Project intervention planned in Kalash territory kept it in view that any change of lifestyle that destroys the goat based economy was not contemplated.

Sustainable resource utilization and conservation is not a new phenomenon for the inhabitants of Sheikhandeh, who have been living in harmony with their environment for centuries.

Over time, the Sheikh community has developed and adapted communal tools and practices to ensure long-term management of available natural resource base. Some of the tools collectively followed by the Sheikh community to ensure sagacious use of natural resources are explained below:

5.7.1 Shalmoosh

This tool is used to ensure controlled grazing in high pastures. In this system, a shalmoosh or Shalmuch i.e. shepherd is hired to guarantee controlled grazing of domestic livestock in high pastures. The Shalmuch is hired for a period of six months and is paid three goats plus foodstuff. If the Shalmoosh agrees to bear his food expenses on his own, he is provided a cow for his services. The concept of Shalmoosh (meaning man of the corral) is still functional in the Sheikhan culture.

5.7.2 Dane

The concept of Dane has deep roots in Sheikhan and Kalash culture and is practiced by both. The indigenous tool is mainly used to ensure prudent use of agricultural produce, fruits, vegetables and natural resources. The Dane system is operated and monitored by a committee called *Aouray*. This committee is comprised of 11-12 members headed by a chair. The committee has the authority to ban premature use of agricultural products, fruits, vegetables and natural resources for a specified period.

Similarly, certain natural resources, including pastures, all kinds of vegetation, etc, are forbidden for all sorts of use for a period of 5 to 10 years. Recently, the

Oak trees have been under *dane* (ban) since 2001 that will last until 2011. The Dane system is also used to ensure sustainable use of pastures. The local community is not allowed to take their herds to a Dane pasture for the specified period. Determining time of grazing during a particular grazing season also regulates grazing.

6. The Park Administration

The Divisional Forest Officer (DFO, Wildlife) based at Chitral, is responsible for the overall management of the wildlife issues in the entire district except CGNP, whereas the Divisional Forest Officer Chitral Gol National Park (DFO, Wildlife CGNP) based at Chitral is responsible for the overall management of Chitral Gol National Park. Chitral Gol Wildlife Division is comprised of Chtral Gol Sub-division based at Chitral and Shoghore Wildlife Range, based at Shoghore. During implementation of the PAMP a full-fledged DFO Wildlife was deputed as Project Manager (PM) to deal with the Project in accordance with the PC- 1. The following field and office staff was available with the PM for the project duration:

6.1 Staff Position

The following table gives the staff position for the implementation of the Project.

Table 7: Staff Position of PAMP-CGNP

Sr. No.	Name of Post	No. of Post	Sources
1.	Divisional Forest Officer Wildlife	1	Wildlife Department
2.	Range Officer	1	-do-
3.	Deputy Ranger	4	-do-
4.	Head Watcher	1	-do-
5.	Watcher	6	-do-
6.	Field Chowkidar	3	-do-
7.	Range Chowkidar	1	-do-
8.	Range Peon	1	-do-
9.	Driver	1	-do-

Sub-total		**19**	
1.	Range Officer	1	PAMP-CGNP
2.	Deputy Ranger	1	-do-
3.	Community Wildlife Watcher	28	-do-
4.	Computer Operator	1	-do-
5.	Office Assistant	2	-do-
6.	Senior Clerk	2	-do-
7.	Junior Clerk	2	-do-
8.	Peon	2	-do-
9.	Chowkidar	4	-do-
10.	Driver	3	-do-
11.	Sweeper	1	-do-
Sub-total		47	
1.	Park Planner	1	WWF-P
2.	Social Mobilizer	1	-do-
3.	Accounts Officer	1	-do-
4.	Community Liaison Officer	1	-do-
5.	Community Motivator	4 (including one Female)	-do-
6.	Micro-enterprise Specialist (MES)	1	-do-
7.	Assistant MES	1	-do-

8.	Office Boy	1	-do-
9.	Driver	1	-do-
10.	Sweeper	1	-do-
Sub-total		**13**	
Grand Total		**78**	

6.2 Infrastructure and Facilities

One inspection hut each at Merin and Chaghbini are available inside the CGNP. The community members/VCCs have constructed 19 km inspection paths inside the Park; the Project employed the VCC members instead of outside laborers/contractors for this work.

The detail of trails constructed is given below:

Table 8: Detail of Trails and Other Infrastructural Facilities inside CGNP

S#	Description of Work	Location	Total Distance	Status
1	Walking Trail	Booster to Kasawir	8.5 km	Completed
2		Chaghbini to Ishpedher	5 km	Completed
3		Ishpedher to Anotack	2 km	Completed
4		Ishpehder to Kasawir	3 km	Completed
Total:			**18.5 km**	
5	Construction of Inspection Huts	Kasawir	Completed	
6	Construction of Gate and	Guruli Rugh	Work stopped due to obtaining a	

	Watcher Hut		court status quo order by the Mehtar

The following infrastructure is scheduled to be constructed by the end of the Project:

i. Field toilets

ii. Camping sites

7. Sites for camping has been indentified and so far two camping site have been established in collaboration and financial support of CGCDCA and FPA. While 2 toilets have been constructed within the core zone **Park management issues and development options**

7.1 Park related issues

The detailed studies carried out under PAMP that include the biophysical and social aspects, as well as many discussions with the communities and Wildlife Department, set the scene to discuss and prioritize the issues and problems of the CGNP. The following section deals with these issues and problems:

7.1.1 Inadequate Capacity of Stakeholders

In order to fully comprehend and understand the natural and sociological processes that are affecting the Park, a higher level of understanding and education is required, both by the Wildlife Department and by the communities. Due to the ever-changing nature of knowledge, the issue of capacity building remains dynamic and permanent.

The Wildlife Department has to deal with the communities living around the CGNP. This calls for a well-equipped and trained staff with enhanced capacity in the social sciences. The Wildlife Department is also expected to manage and conserve all forms of biodiversity, promote ecotourism and deal with many other issues including Climate Change and livestock diseases, etc. It is only through a well-articulated training program that the capacity of the Wildlife Department can be increased. The enhanced knowledge plays a vital role to synch sound science with management.

The communities living near and around the CGNP do possess a wealth of traditional knowledge. This knowledge, however, is fast dwindling unconsciously in the modern age. With a lifestyle fast changing towards urbanization and changing sources of livelihood, the communities appear ill prepared to cope with the new challenges. Low literacy and lack of sensitization on the need to cope with latest scientific developments make the communities handicapped to

undertake the role and responsibilities expected from them as the custodians of the CGNP.

The major point of agreement between all the stakeholders is that all agree on the need to conserve biodiversity for future generations, and this agreement guarantees that the capacity-building program will be a success.

7.1.2 Education and Awareness

After many experiences around the world, Conservation Education and Public Awareness (CEPA) are widely recognized to be the backbone of all conservation efforts. Continuous efforts are needed to raise the awareness level of all the stakeholders, especially the communities. All standard tools of communication are used in order to achieve the main objective of community support in the conservation efforts. Modern facilities like mobile phone, Internet, Skype, IMO, Whatapps, etc. and satellite television are available to the local communities. The mode of human contact is the main source of communication in all the custodial and peripheral communities of the CGNP, which may further improve in the near future.

7.1.3 Sanctity of the National Park

National Park is established under Section 29 of the Wildlife & Biodiversity Act, 2015. Section 29 (5) of the Act *ibid* talk of the the following prohibit acts in a national park:

(a) hunting, shooting, trapping, killing or capturing of any wild animal;
(b) carrying of arms, pet animals, livestock, firing any gun or doing any other act which may disturb any wild animal or doing any act which interferes with the serenity and tranquility of the park and breeding places of wild animals;
(c) logging, felling, tapping, burning or in any way damaging or destroying, taking, collecting or removing any plant or tree;
(d) grazing of livestock;
(e) fishing;
(f) clearing or breaking up any land for cultivation; mining or quarrying of stones or for any other purpose;
(g) polluting or poisoning water flowing in and through the National Park;
(h) littering and dumping of wastes;
(i) writing, inscribing, carving, disfiguring, defacing, painting, chalking, advertising;
(j) use of vehicular transport, except on recognized roads and routes;
(k) blowing of pressure horns within one kilometer radius of the park boundary; and
(l) (play back music, using radios, players or any other audio-video equipment's, or making noise:

Provided that Government may, for scientific purpose or betterment of the National Park, or for providing incentives and concessions to the communities for participatory management, authorize doing of one or more of the afore-mentioned acts on an explicit written request made by the Chief Conservator Wildlife, justifying the need for such an action and certifying that it does not impair the object of establishment of the National Park:

Nonetheless, CGNP by virtue of its location at the vicinity of a fast growing urban population is prone to many opportunities and threats. While tourism provides many opportunities for employment, urbanization poses a threat. The communities are fast to modify their attitude on usage of the Park resources as they no longer use the Park as a grazing ground for goats nor do they extract timber and other NTFPs. In fact, the communities do not avail the economic benefits by extracting NTFPs even from outside the Park boundaries. Fuel-wood is a basic need especially during the harsh winters, making the CGNP tempting by being near their doorsteps. The Park is prone to external risks like the transmission of disease through contact with domestic livestock and the urban pollution of Chitral town. Availability of high value chilghoza and other NTFPs also tempt the local population to exploit the Park resources. Most local tourists are not aware of the sanctity of National Parks. So is the case with the Wildlife staff and the Community Watchers who are not fully trained to manage the influx of a large number of tourists.

Maintaining the sanctity of the Park remains a Herculean task, for which ways and means have to be devised so that the communities and the Wildlife Department work in harmony. The Project interventions by virtue of employing Community Wildlife Watchers, providing endowment funds and others have set the scene for reducing the dependence of the communities on the Park resources.

Future interventions that lead to maintenance of the sanctity of the CGNP shall contribute greatly in conserving the globally threatened biodiversity available in the CGNP.

7.1.4 Benefits beyond Boundaries

During the PAMP Project many research studies were conducted to study and document the various aspects of the CGNP; a major study was that on the Snow Leopard. The prevalent opinion is that the existing area of the CGNP does not suffice for its habitat needs. Moreover, activities like agriculture and urbanization can affect the species that migrate from and to the CGNP. In order to fully comprehend and understand the situation in the light of the modern concepts of ecosystem fragmentation and provision of biological corridors, there is a need to better understand the science and translate it into action in the field. Capacity

building of the Wildlife officers is of utmost importance so that any future intervention is based on sound science.

Hunting in the CGNP had been a prerogative of the royals in the old days; with its declaration as a National Park hunting has been completely banned while other usages like grazing and collection of wood have been drastically curtailed. Simultaneously benefits to the communities due to Project interventions have started to accrue. These benefits are not restricted to the direct pecuniary gains due to Project funds but also are in the shape of a long-term environmental amelioration for all. The main benefit in the shape of conservation of biological diversity shall sustain for the next generations. The major direct benefit of an improved Park ecosystem is the potable and irrigation water that the Chitral Gol stream supplies to the residents outside its boundaries. In the near future, the benefits of trophy hunting and eco-tourism that would accrue directly from the Park shall benefit all, including those living beyond its boundaries. Eco-tourism has multiplier effects and has the potential to be the major contributor to employment generation.

The overflow of benefits of the Park outside its boundaries calls for bringing the potential beneficiaries together to realize and appreciate its importance. This realization would also help in creating an enabling environment for better management of the Park resources.

7.1.5 Uncertain Financial Sustainability

Endowment funds have been disbursed to the communities in the shape of VCF. Moreover, adequate funds for the Park Association have also been earmarked by the Project. The VCCs have advanced loans to the community members and it is expected that these funds would not only revolve but also increase with time.

However, in order to ensure financial sustainability it is important that special efforts be made to make these funds sustainable by enhancing the skills of the communities in fund management, record keeping and exploring avenues for new income generating projects. New sources of funds like imposition of visitors' fee, trophy hunting inside the Park, etc. is other avenues that could ensure sustainability.

Preparation of new projects and generation of funds from new sources would greatly help to achieve financial sustainability of Park Management.

7.1.6 Park Infrastructure

Infrastructure, like roads, trails, inspection huts, water supply and communication system, is necessary for achieving the overall vision of the CGNP. Improvements

in the Park infrastructure are needed in accordance with the needs, especially when the outreach activities are most likely to attract more and more tourists to the Park.

7.1.7 Lack of Monitoring and Evaluation System

A regular monitoring and evaluation system ensures timely and target oriented interventions for the achievement of the overall vision 'Protect the integrity of natural ecosystems in and around CGNP'. Although a full fledge Project has been implemented in the Park, but the non-existence of a regular M & E system has been badly felt. The dimension and scope of monitoring for the Park is not restricted to the monitoring of flagship species of the Park but also falls on the socio-economic and biophysical aspects. Third party external M & E is as important as a regular internal monitoring system; therefore the inclusion of both is essential.

7.1.8 Cross Cutting Issue: Programme of Work on Protected Areas

The Park has not only to fulfill the legal obligations under the provincial and national laws but also has to fulfill the international obligations that are expected from the Protected Area (PA). Ignorance on the international obligations that CGNP has to fulfill has been a major issue. Although the pre and post Project documents, including those of the World Bank, do not highlight this issue, nevertheless the obligations that any PA has to fulfill cannot be ignored.

The Convention on Biological Diversity (CBD) to which Pakistan is a party sets out broad commitments to take action at the national level for the conservation and sustainable use of biological diversity. Since enforcement, its commitments have been translated into a series of programmes of work. The Programme of Work on Protected Areas was adopted in 2004. This Programme deals with direct actions for planning, selection, establishing, strengthening and managing protected areas; ways and means to improve governance, participation and equity; and enabling activities. The overall target is to achieve a significant reduction in the rate of loss of biological diversity.

The Programme of Work consists of four interlinked elements intended to be mutually reinforcing and crosscutting in their implementation. The elements of the Programme of Work include:

i. Establishment and strengthening of PAs system, integration of PAs into larger landscapes, strengthening collaboration between countries for trans-boundary PAs conservation, preventing negative impacts of key threats to PAs.

ii. Governance, participation, equity and benefit sharing and enhancing the involvement of local communities and relevant stakeholders.

iii. Enabling activities including providing enabling policies and institutional mechanisms, capacity building for planning, establishment and management of PAs, ensuring financial sustainability; and strengthening communication, education and public awareness.

iv. Standards, assessment and monitoring, assessing PA status and trends, and ensuring that scientific knowledge contributes to PAs establishment and effectiveness.

The ultimate aim of the Work Programme is the establishment and maintenance of effectively managed, ecologically representative national and regional systems of PAs integrated into a network of protected areas, in order to provide benefits for the present and future generations.

No programme on Protected Areas has been developed in Pakistan at the national level, therefore this management plan takes into account those elements and specific goals that are relevant at the CGNP level. This Management Plan is, however, a step towards achieving Pakistan's commitments towards implementing the Programme of Work on Protected Areas.

8. Vision, Objectives, Prescriptions and Interventions

The **vision** for the Chitral Gol National Park is to "**Protect the Integrity of Natural Ecosystems in and around Chitral Gol National Park"**.

8.1 Objectives of Management

The following are the objectives of management of the Chitral Gol National Park:

i. Build capacity of the major stakeholders
ii. Promote conservation and awareness
iii. Maintain the sanctity of the National Park
iv. Improve and maintain wildlife habitat in adjacent areas
v. Promote management oriented research
vi. Ensure financial sustainability
vii. Establish, improve and maintain Park infrastructure
viii. Develop and maintain monitoring and evaluation system

The Programme of Work on Protected Areas adopted by the Convention on Biological Diversity cross cuts these objectives.

8.2 Prescriptions and Interventions

Objective 1

Build capacity of the major stakeholders for better management of the Park

Capacity building of the Wildlife Department staff and the communities is the main concern that can help achieve any sustainable development and Park integrity issues. Though better literacy and educational facilities would ensure diffusion of scientific interventions, yet systematic capacity building program ensures better implementation of the interventions in order to achieve the objectives of management of this Management Plan.

Prescription 1.1

Strengthen Social Institutions

The major achievement of PAMP in the CGNP has been the successful effort to organize the communities and the creation of an enabling environment for achieving the overall objective of conservation of the integrity of the Park. The social institutions established under the Project include the VCCs, W-VCCs and the Park Association. Social change and development is a long-term process and qualifies to be the prime objective of any intervention.

Intervention 1.1.1

Conduct Long and Short Term Training Needs Assessment (TNA)

In order to proceed systematically in capacity building of the communities it is important that a TNA is conducted prior to initiating the training program. The TNA may be made keeping in view the short and long-term actions needed to achieve the objectives of management.

Intervention 1.1.2

Develop Regular Training Programs for the Communities According to the TNAs

Poverty alleviation and provision of sources of livelihood to the custodial communities hold the key to reducing pressures on the Park resources. A well-thought and articulated training program for enhancing opportunities for the communities is to be developed.

Prescription 1.2

Build Capacities of Wildlife Department in Participatory Management and Allied Disciplines

It is not possible to conserve wildlife and habitats without the participation of the local communities and the society. While the training of Wildlife officers and staff

is focused on wildlife science, there, however, is a need to equip them with various tools to win community support in the conservation endeavors.

Intervention 1.2.1

Preparation of Short-term and Long-term Training Needs Assessment Program

A well articulated training needs program for the Wildlife staff and officers by involving pure professionals shall be prepared.

Intervention 1.2.2

Professional Staff Training Program

For effective implementation of the participatory program, training of the professional officers of the Wildlife Department is essential to make any intervention successful.

Intervention 1.2.3

Field Staff Training Program

Any intervention of the Wildlife Department has to be implemented by the field staff therefore; their regular training, including field visits, shall be undertaken.

Prescription 1.3

Strengthen Staffing Structure and Enhance Vigilance

In order to provide continuity to the efforts of the Wildlife Department for participatory conservation and community empowerment, the existing staff shall be strengthened while new staff shall be recruited. Some new posts as veterinarian, tourism manager and public relations officers may be included in the Park Management keeping in view the experience gained during the implementation of PAMP and particular conditions of Chitral.

Intervention 1.3.1

Creation of posts and Recruitment

To strengthen the Park Management for facing new challenges the following new posts are proposed.

Table 9: Showing the Regularization/Retention of Existing Staff

Sr. No.	Types of post	Status of post	
		Existing	Proposed

1.	DFO Wildlife CGNP (BPS 18)	1	0
2.	Sub-divisional Forest Officer Wildlife CGNP (BPS 17)	1	0
3.	Social Scientist (BPS 17)	0	1
4.	Veterinarian (BPS 17)	0	1
5.	Range Officer Wildlife (BPS 16)	1	1
6.	Monitoring and Evaluation Officer (BPS-16)	0	1
7.	Deputy Ranger: BPS 11	3	2
8.	Deputy ranger under the project BPS 11	2	
9.	Community Motivator: (BPS-11) 2 Male/1 Female Community Organizer	0	3
10.	Head Wildlife watchers (BPS9)	2	2
11.	Wildlife Watcher	15	5
12.	Wildlife Watcher under the project	7	10
1.	Computer Operator/Steno	1	0
13.	Office Assistant	1	0
14.	Senior Clerk: BPS 14	0	0
15.	Junior Clerk: BPS 11	1	0
16.	Naib Qasid (one regular and one under the project)	2	0
17.	Driver	2	1
18.	Micro-Credit Specialist	0	1
19.	Chowkidar	2	
20.	Sweeper	1	

21.	Field chokidars	4	2
22.	Sanitary worker under the project	3	

Table 10: Showing ToR of the New Required Positions

Sr. No	Positions for New Recruitment	Remarks
1.	Social Scientist/Field Anthropologist	A qualified Social Scientist would provide required in house supervision to the social sector interventions and community participation in conservation.
2.	Male/Female Community Organizer	Male and female Community Organizers are needed to update the VCDPs and prepare new ones, conduct baseline social surveys and collect data.
3.	Veterinarian	Availability of in house Veterinarian/Animal Husbandry Officer would ensure that timely veterinary support is available to the wildlife and the livestock that may transmit disease to wildlife. The existing government veterinary dispensary in Chitral cannot cope with emergencies. The recruited Veterinarian will be trained in wildlife medicine that would help the Wildlife Department as well.
4.	M&E Officer	The Monitoring and Evaluation Officer shall develop a regular monitoring program, undertake evaluations and liaise with the GIS Lab of the Department at Peshawar.
5.	Communications and Awareness Specialist	He/she shall coordinate the education and outreach activities and have close liaison with the media and students. He/she shall also serve as in-charge of the vast training component of the Plan.
6.	Wildlife Watcher	These positions will be posted to areas that had not been addressed previously like Begusht and Manor areas.

7.	Community Wildlife Watcher	These watchers will assist in getting community support for the conservation efforts.
8.	Naib Qasid	-Do-
9.	Driver	-Do-

Intervention 1.3.2

Provision of Liveries

The following standard items for the field staff shall be provided on routine basis in accordance with the standard rules of the Wildlife Department:

i. Uniform
ii. Field equipment
iii. Transport facilities

Intervention 1.3.3

Construction of Staff Accommodation and Field Huts

An adequate number of staff accommodations shall be constructed for the field staff; keeping in view the acute shortage of accommodation in Chitral town. It is almost close to impossible to rent an accommodation in Chitral by newly posted staff and consultants.

Intervention 1.3.4

Emergency Service

i. Alpine rescue system
ii. Firefighting system
iii. Hazard management

Although the field staff as well as the community Game Watchers are hardy and well suited to the harsh terrain of the CGNP, yet emergencies do come un-announced therefore it is wise to train all staff on alpine rescue procedures. A dedicated rescue system shall also be in place with the consultation of the professionals in this field. Similar is the case with firefighting and hazard management. Regular exercise program shall also be in place to test the efficacy and level of preparedness of the teams. Experience has shown that the Wildlife staff and the communities need awareness on their respective legal responsibilities for fire control. Timely availability of fire fighting equipment is crucial for protecting the ecosystems.

Prescription 1.4

Develop Strong Community Activists Program

The Park Association shall develop capacities of the local communities through strong community activists program. The activists selected in consultation with the VCCs/ W-VCCs will be at the disposal of the Park Management. The Community Activists shall be paid a stipend, and undergo vigorous training on a predetermined curriculum. The Community Activists shall not only assist in the implementation of the Management Plan but will also serve the Management after completion of their tenure. They shall thereafter act as conservation ambassadors inside the communities.

Intervention 1.4.1

Develop and Implement Training Manual for Community Activists

A training manual for Community Activists shall be developed professionally. This will assist the Project staff in knowing how and when to proceed. The Community Activists shall get certificates upon completion of the internship. Separate Manuals/sections for the illiterate and women may be considered.

Intervention 1.4.2

Conduct Regular Training Sessions for Community Activists

Regular dedicated training sessions shall be held at the village and Management levels.

Intervention 1.4.3

Arrange Exposure Visits and Tours for Community Activists

Exposure visits of the Community Activists to other areas and parks shall be undertaken to enhance their comprehension on conservation efforts undertaken elsewhere.

Prescription 1.5

Promote Equity and Benefit Sharing

Intervention 1.5.1

Assess the Economic and Socio-Cultural Costs, Benefits and Impacts.

This assessment shall be undertaken by experts to assess the costs, benefits and impacts arising from the establishment and maintenance of

the CGNP for the indigenous and local communities and provide policy guidelines to adjust policies to avoid and mitigate negative impacts and where appropriate compensate costs and equitably share benefits in accordance with the national legislation.

Objective 2

Promote Conservation Education and Awareness

Mass awareness and education of all stakeholders and the society holds the key to make the efforts of the Department successful. Any amount spent to achieve this end is worthwhile.

Prescription 2.1

Develop and Implement Conservation Education and Awareness Program

Continuous efforts to raise the awareness level of all the stakeholders are the need of the hour. All standard tools of communication shall apply in order to achieve the main objective of community support in the conservation efforts. Modern facilities are gradually becoming available to the local communities. The mode of human contact shall remain the main source of communication in the near future in all the custodial and peripheral communities of the CGNP. Therefore, any amount spent on this issue is worthwhile

Intervention 2.1.1

Develop Documentaries for Chitral Gol National Park

PTV and private TV channels shall be encouraged to prepare documentaries on the CGNP. The themes to cover are vast including the social, cultural and biophysical aspects. Themes like the Snow Leopard, ephemerals, and birds could be attractive topics. The Communications and Awareness Specialist shall be responsible to coordinate and prepare the documentaries and to find sponsors. The Wildlife Department may also prepare a few documentaries for educational purposes.

Intervention 2.1.2

Launch Bi-Annual Newsletters

Bi-annual newsletters, keeping in view the interest of the tourists, shall be prepared and made freely available at the reception desks of all hotels and airport waiting rooms. These shall also be circulated to the libraries

and educational institutions of Chitral as well as all the NGOs. All Government departments in Chitral shall also be on the mailing list.

Intervention 2.1.3

Disseminate Information through Website of Wildlife Department

The website of the Wildlife Department shall host CGNP related information, newsletters and events. The existing web pages of the Ministry of Climate Change and NGOs shall be requested to provide links to the CGNP web page on their respective websites.

Intervention 2.1.4

Disseminate Information about CGNP through Print and Electronic Media

Print and electronic media shall be encouraged to issue special supplements about the CGNP and Radio Chitral shall be contacted to air programs on the achievements of the Wildlife Department on regular basis.

Intervention 2.1.5

Run (School and Conservation) Programs

i. School nature clubs
ii. Study visits

School Nature clubs established by the Project and department shall be strengthened and re-invigorated. Special quiz, essay writing and speech contests shall be organized in the schools and colleges of Chitral. The possibility of holding provincial and national level competitions should also be explored.

Intervention 2.1.6

Facilitate Conservation Activities of Other Organizations

Many organizations celebrate various environment related days such as Adventure Foundation of Pakistan regularly conducts Annual Children Mountain Conservation events. These organizations are already supported by the Wildlife Department. This activity shall continue and more students/participants shall be encouraged to participate in these events.

Intervention 2.1.7

Develop Environmental Education Training Materials

Adequate environmental education material shall be developed and widely distributed. Possibility of translation into Urdu and other local languages shall be studied and where feasible such translations shall be made.

If possible and otherwise feasible, education material prepared by other organizations like WWF-P, IUCN-P, AKRSP, SRSP, etc. may also be explored and adopted for use in various schools, etc. for raising conservation education and awareness.

Intervention 2.1.8

Distribute Environmental Education Textbooks and other Material to the Local Educational Institutions and other Stakeholders

The Ministry of Climate Change has developed curriculum on environmental education. This material shall be procured for wide distribution in the educational institutions. Handsome amounts shall also be spent for purchase of books and periodicals for wide distribution in Chitral for educational purposes. Similarly, eco-tourism field guides, guidelines, etc. shall also be distributed amongst the hotel owners and tour operators.

Prescription 2.2

Establish Information Center in Chitral Town

The Kalash valleys and Garam Chashma are the destinations for the majority of tourists visiting Chitral. A lot of income generation potential exists for the communities of the CGNP. Visitors can be attracted to visit CGNP by the establishment of a CGNP Tourist Information Centre

Intervention 2.2.1

Construction of Multipurpose Tourist Information Center in Chitral Town, Including Audio-Visual Center, Herbarium and Zoological Museum

The Tourist Information Centre has been established at a rented building, which may change with time. To have a permanent and purposeful building of the Information Centre, the same shall be established at a prominent location in Chitral town. It may include a library, a herbarium, small museum of natural history and an audio-visual training center for the tourists. The Center can provide employment to the Custodial communities and it can generate income for the Park.

The experiment of arranging presentations on the CGNP for tourists in the DFO Wildlfie CGNP office especially foreign tourists has shown promising

results. Substantial sale of W-VCC products was also made during these occasions. Such shows by contacting and inviting tourists shall be undertaken until the construction of the Tourist Information Center.

Objective 3

Maintain Sanctity of the National Park

Declaration of Chitral Gol as a National Park calls for maintaining its sanctity under national and international legal, technical and moral obligations. Although since its declaration, studies show that the wildlife population, as well as its ecosystems, depicts a trend of improvement. Nevertheless, with a growing urban population, maintaining the sanctity of the Park remains a high priority.

Prescription 3.1

Minimize Negative Impacts of Grazing

Logically grazing of goats, sheep and livestock in and around the adjoining area of the Park does pose a long-term threat to the Park resources. The traditional grazing systems are on a path of change while their replacement by a scientifically tested grazing system is not available. Therefore efforts shall be made to minimize the negative impacts of grazing. Better veterinary services that may lead to promotion of keeping a lesser number of animals, planting of fodder trees in the adjoining areas and strengthening of social institutions are some actions that would help minimize the negative impacts of grazing.

Intervention 3.1.1

Control Grazing

Grazing by domestic livestock appears to pose a long-term threat to the Park resources and needs to be addressed. It is a welcome sign that the communities surrounding the CGNP had already given up goat grazing inside the CGNP. While economic factors are responsible for making others give up goat herding, a few still continue livestock herding that, at times, enters the CGNP. The control of grazing inside the Park is a sensitive issue; its control may not be too liberal or too strict to antagonize the communities.

Keeping in view the cultural and religious sensitivities of the communities of the Kalash valley, grazing control initiatives should be so as not to encroach upon culture.

Intervention 3.1.2

Strengthening Social Institutions

The VCCs and W-VCCs need continuous strengthening by all possible means with the aim of creating an environment conducive to the sustainability of both the communities and the natural resources of the Park.

Intervention 3.1.3

Replenish VCF

The VCF has emerged as an important tool for maintaining the sanctity of the National Park. Its replenishment in phases would not only strengthen the social institutions but also achieve the overall goal of maintaining the sanctity of the Park.

Intervention 3.1.4

Strengthen Social Mobilization (VCCs and W-VCCs)

Community empowerment and building their capacities to share the responsibilities for maintaining the integrity of the Park is a long-term activity that needs continuous support.

Intervention 3.1.5

Introduction of Environment Friendly Trees

Provision of fodder for the livestock and goats not only helps in provision of nutrition but also acts as a tool to keep the animals away from the Park. The Park authorities may distribute saplings of fodder trees and, where appropriate, undertake planting of indigenous trees outside the Park.

Intervention 3.1.6

Promote Adoption of Stall-Feeding by the Local Communities

The communities undertake stall-feeding during the harsh winter months, however what is critical for the CGNP is the early spring release of animals by the communities that destroy the plants before their flowering. Promotion of stall-feeding, keeping in view the life cycle of the plants of the CGNP, would be a step towards maintaining the integrity of the Park.

Intervention 3.1.7

Provision of Veterinary Medicines and Livestock Vaccination

Experience has shown that timely vaccination of livestock would eliminate the chances of transmission of disease from livestock to wildlife. The presence of a veterinarian amongst the Park staff would also ensure that veterinary medicine is timely and properly dispensed to the livestock. Better animal husbandry practices would also lead to reduction in number of livestock and ultimately reduce pressures on the Park resources. This would also be a step towards the improvement of their livelihood.

Intervention 3.1.8

Encourage the Establishment of Grass Re-Seeding Plots outside the CGNP

Provision of fodder resources outside the Park area would lead to reduction of pressures on the Park resources.

Intervention 3.1.9

Encourage the Cultivation of Fodder Species

Though there is limited agricultural land in Chitral, yet the possibility of promotion of fodder cultivation needs exploration and encouragement.

Intervention 3.1.10

Promote and Introduce Improved Breeds of Livestock

Introduction of improved breeds of livestock, with the aim of reducing grazing pressure on the Park resources shall be undertaken. This would depend on a proper feasibility and keeping in view the commitment of Pakistan under the CBD towards the conservation of local breeds.

Prescription 3.2

Decrease Dependence on Fuel Wood

Firewood collection poses a threat to the Park resources, and this is exacerbated by the tendency of the poor to collect bark and even leaf litter especially from the oak forests outside the Park boundary. This action deprives the forest floor of organic matter, thereby hampering regeneration of oaks and other trees. Decreasing dependence on wood as a source of fuel would be a major step towards conservation of the Park resources.

Intervention 3.2.1

Explore and Promote Alternate Sources of Energy

Renewable sources of energy, other than fuel wood, hold promise of reducing pressures from the Park resources. Solar energy has been introduced in Chitral town to a limited scale. If feasible, it may be used in other custodial communities of the CGNP. Exploration of other sources may be made, as the Pakistan Council for New and Renewable Energy (PCRET) is continuously striving towards this end, and its support may be obtained in this regard.

Intervention 3.2.2

Promote and Introduce Fuel-Efficient Stoves

Fuel-efficient stoves are continuously developed as technology improves, therefore in order to make the custodial communities reap the benefits of technology, the latest fuel-efficient stoves shall be introduced in the area. PAMP had been in touch with PCRET and it surfaced that PCRET is recommending the use of briquettes as a fuel in the fuel-efficient stoves. It is worthwhile to trial test the acceptability and economics of briquettes manufactured in factories in the Punjab. If feasible, the briquettes may be promoted at a large scale.

Prescription 3.3

Regulate and Monitor NTFPs Collection

Non-timber forest products hold a lot of economic opportunity for the custodial communities. So far no serious study has been made in this regard for the custodial communities of the CGNP.

Intervention 3.3.1

Conduct Studies on the Dynamics of NTFPS Collection, Packaging and Marketing

A detailed feasibility study on occurrence, marketing, packaging and use of NTFPs is needed before devising any program for its use for the benefit of the local communities.

Intervention 3.3.2

Promote Cultivation of Medicinal Plants

Medicinal plants cultivation and marketing holds a lot of potential for the uplift of the custodial communities. Cultivation on select lands with technical support will help the communities.

Intervention 3.3.3

Prepare Directory of Traditional Medicines and Hakims

The Convention on Biological Diversity calls on equitable sharing of the benefits of traditional knowledge (mainly medicine) with the holders of such knowledge. Preparation of a directory of local practitioners of traditional medicine (hakims) would be the first step for ensuring the equitable sharing of benefits with the holders of such knowledge.

Intervention 3.3.4

Explore Possibility of Patenting of Traditional Medicinal Formulations

It is well known that the multi-national companies are earning billions of dollars by patenting medicinal formulations derived from the traditional knowledge of local communities. In order to safeguard the economic interest of the local communities it is worthwhile to initiate the process of documenting traditional knowledge and patenting it. For this the negotiating skills of the local communities need to be enhanced, before preparation of a directory of local medicines, bio prospecting and then patenting are undertaken. Starting this complicated and lengthy process would at later stages lead to safeguarding the rights of the local communities.

Prescription 3.4

Control and Minimize the Impacts of Pollution

CGNP is located at the periphery of a fast growing urban center where land is a scarce resource. Knowing the possible threats of pollution on the Park resources and taking mitigation measures is necessary to safeguard the Park integrity. Although taking steps for pollution control in the town area is beyond the scope of the Wildlife Department, yet persuading the concerned authorities about the threats posed to the Park would help catalyze action in the right direction.

Intervention 3.4.1

Study the Impacts of Solid, Liquid and Hazardous Wastes on the Ecosystems of the CGNP

The Park is mostly affected by solid, liquid and hazardous waste, while sound and light pollution do not pose a threat to the Park resources. Studies on the likely impacts would assist the Park authorities to take timely remedial measures when required.

Like other parts of the country there was hardly any sewerage system in the villages of Chitral; a sewerage treatment plant was established in

village Rehankot but it is not functional. The villages of Muldeh, Jang Bazar and Zargarandeh simply dump solid waste into Chitral Gol stream. This garbage dump can be seen all the year round, it only waits for a flood to wash it away. Hazardous waste in the shape of used battery cells, paints, empty pesticide packing, hospital waste, etc. that are dumped near and at the periphery of the Park may or may not pose a hazard to the Park ecosystem. Nevertheless, it does pose a hazard to the Park dependent communities. The Park Association shall conduct studies on the hazards from pollution and their likely impact on the Park.

Prescription 3.5

Reduce Dependence on Park Resources

The local communities had been using the Park resources to a limited extent for their domestic needs. However, this practice has been curtailed largely. Moreover, in order to eliminate the need to look to the Park for resources, it is worthwhile to conduct a professional study to gauge the impacts of the Park on the communities before and after the notification of the Park. The Study shall prioritize and suggest ways to eliminate the dependence on the Park for meeting domestic needs. Provision of alternate sources of livelihood and promotion of non-destructive environment friendly uses would help reduce dependence on the CGNP.

Intervention 3.5.1

Promote Existing Livelihood Opportunities

In addition to the loans provided by the VCF, a regular program to enhance the skills and capacities of the communities to earn a living is an important aspect that needs to be strengthened.

Intervention 3.5.2

Explore New Livelihood Opportunities

Technology is providing many new avenues for off farm and off Park employment opportunities that need to be explored and promoted in the custodial communities of Chitral. The Park Association shall encourage and promote non-traditional employment opportunities.

Intervention 3.5.4

Identify, Develop and Maintain Campsites

Development of camping sites at appropriate places not only provides off Park employment opportunities to the local communities but also facilitates the tourists.

Intervention 3.5.5

Identify, Develop and Maintain Picnic Sites

Picnic sites at appropriate places for day visitors shall ensure that the visitors are provided with facilities while not disturbing the wildlife.

Prescription 3.6

Develop Eco-tourism

Tourism activities while generating employment opportunities for the local communities also pose hazards to the fragile ecosystems. Pollution is a main bye-product of tourism, while irresponsible tourism is also a direct threat to the wildlife and other flora and fauna. Eco-tourism has since developed as a distinct discipline and its principles and procedures shall be adopted in the CGNP in a planned manner.

Intervention 3.6.1

Update and Improve Eco-tourism Strategy

Effective promotion of eco-tourism would largely depend on the development of a professional eco-tourism strategy. The principles and concepts developed for eco-tourism do need application to the specific conditions of the CGNP as this subject has developed as a discipline over the years. In particular, the roles of the Government and that of the entrepreneurs need to be clearly identified and applied. A professionally developed eco-tourism strategy should be trial tested and widely discussed prior to approval and implementation.

Intervention 3.6.2

Develop Staff and Community Training Programs for Eco-Tourism

Without provision of adequate funds for the implementation of eco-tourism strategy, in particular for training of staff, hotel owners, tour operators and communities, success cannot be achieved. Extensive trainings on this shall be arranged.

Intervention 3.6.3

Organize Training of Tour Operators and Hotel Owners for Eco-Tourism Development

Adequate funds for organizing the tour operators and hotel owners to fulfill the objectives of eco-tourism for the CGNP shall be provided to make it successful.

Prescription 3.7

Evaluate and Improve the Effectiveness of Management and Conduct Gap Analysis

Intervention 3.7.1

Develop and Adopt Appropriate Methods, Standards, Criteria and Indicators for Evaluating Effectiveness at a PA Level

The effectiveness of management interventions shall be judged by setting up a related database taking into account the IUCN-WCPA framework for evaluating management effectiveness and other related methodologies according to local conditions. Appropriate methods, standards, criteria and indicators for evaluation of the effectiveness of management and governance shall also be developed and adopted.

Intervention 3.7.2

Conduct Gap Analysis for Minimum Effective Size and Viability Requirements, Species Migration Requirements, Integrity, Ecological Processes and Ecosystem Services

In order to conserve the biodiversity of the Park and the ecosystems, a gap analysis on the effectiveness of National Park shall be conducted. The Gap analysis should take into account annex I of the CBD and other relevant criteria such as minimum effective size and viability requirements, species migration requirements, especially the Markhor and the Snow Leopard, and ecological processes.

Objective 4

Improve and maintain wildlife habitats in adjacent areas

The impacts of activities undertaken in areas outside the Park like pesticide spray, use of genetically modified GM crops, fertilizer use, water diversion for irrigation and others can influence the wildlife and the ecosystem of the Park. The Wildlife Act 1975 and the newly promulgated Khyber Pakhtunkhwa Wildlife & Biodiversity Act, 2015 prohibits hunting of wild animals in a radius of one km from the Park's outer boundaries. With the advent of technology that is likely to influence the Park; it is important that it is studied and remedial legal and other measures are adopted.

Prescription 4.1

Collection of Baseline Data on Adjacent Areas

Benefits of conservation of Protected Areas accrue not only inside but also outside the boundaries. This had also been the theme of the World Parks Congress. Collection of baseline data on the adjacent areas holds the key for any informed decisions on future interventions. Since such baselines are not available for the areas adjacent to the CGNP; collection of such raw data is necessary.

In order to assess the likely impacts of the activities undertaken outside the Park, the capacities of the Wildlife Department have to be enhanced and strengthened. Strengthening the capacities of the local communities in this regard would be a major achievement, as not only would the Department find it easy to convince the communities but they are also expected to adopt environment friendly measures for their own betterment.

Intervention 4.1.1

Mapping of Adjacent Areas and Updating of Database Using Satellite Imageries

It is an established fact that graphic data increase the human perception manifold. In order to comprehend the problems and issues beyond the Park boundaries, good quality maps are of utmost importance. Thematic and temporal maps of good quality shall be made available. These will be very useful for the Park planning, especially benefits beyond boundaries.

Intervention 4.1.2

Exploring Appropriate Categories of Protected Areas

Exploring appropriate categories of PAs in the areas around the Park would surely lead to a consensus with the stakeholders in order to achieve the overall objectives of conservation. Long-term awareness and capacity building of the communities is needed to conclude into a meaningful categorization. The communities shall be given the assurance that all conservation measures would be taken with their consent.

Intervention 4.1.3

Mapping of Biological Corridors

Biological corridors ensure that the risk of inbreeding is minimized and that the species has a safe migration path during the times of scarcities. Preparation of such maps shall assist the Park authorities to visualize and identify priority areas of intervention. Corridors shall be mapped,

communities along the corridors shall be identified and a program for facilitation of wildlife movement along these corridors shall be prepared.

Intervention 4.1.4

Identification of Ecosystem Fragmentation

Fragmentation of ecosystems is a major risk that could silently extirpate the species despite protection from poaching. If any area that fragments an ecosystem is identified, appropriate actions are to be taken to create corridors.

Intervention 4.1.5

Feasibility to Coordinate with MACP target valleys and Study the Likely Impacts of the Communities Located at Manor and Begusht Areas

Feasibility of MACP target areas like Manor and Begusht for coordinated efforts in order to enhance the surveillance in that area shall be undertaken.

Prescription 4.2

Strengthen social and departmental capacities

This Management Plan is the first of its kind that not only deals with the national obligations of the Park but also attempts at helping Pakistan fulfill its international obligations under the CBD. Tackling areas beyond the boundaries of the Park is desirable but with availability of little baseline data and land tenure issues, adopting a conservative approach appears a feasible option. This approach would avoid the spread of unnecessary suspicions of land grabbing amongst the people. The capacities of not only the staff and the communities shall be built, but steps shall also be taken to win the confidence of the communities. This shall be done through interventions that improve ecological conditions, and provide livelihood opportunities that directly improve habitat and migratory routes of wildlife.

Intervention 4.2.1

Environment Friendly Interventions

All environmentally friendly and socially acceptable interventions that shall be suggested by the VCCs may be applied in the areas. Additionally the interventions that will be prescribed by the Research Review Committee shall also be undertaken.

Intervention 4.2.2

Check Damming Where Appropriate

One of the interventions, when applied wisely, is check damming; this activity not only generates employment for the local communities but also contributes to soil and water conservation. Check damming at appropriate sites shall be undertaken to conserve soil and water.

Intervention 4.2.3

Planting of Local Species

Local species of trees, shrubs and herbs shall be promoted and planted in the communal lands adjoining the Park.

Intervention 4.2.4

Re-seeding

Re-seeding of local grasses and forage species shall be undertaken that would be beneficial to the local communities.

Intervention 4.2.5

Promotion of Non-Destructive Use of Timber

Planting of fruit and other trees whose flowers and fruit fetch handsome price in the market helps sequester carbon, provides abode to birds and also, their snags at many times, provide habitat to birds. Trees and other flora that provide non-destructive uses shall be propagated in the communities.

Intervention 4.2.6

Arrange Trans-Boundary Meetings

In accordance with Pakistan's obligations to the CBD and the approved Work Program on Protected Areas, Chitral GoI by virtue of its location is near Afghanistan, where the Snow Leopard and Markhor are believed to frequently migrate. This calls for implementation of the provisions in the Program of Work on trans-boundary PAs. As a first step, meetings shall be held to discuss the modes of creation of cross trans-boundary Protected Area system. Similarly, meetings shall also be arranged with the officers of the Wildlife Department of Gilgit Baltistan and other adjoining districts.

Prescription 4.3

Formulate and Update Plans/VCDPs for Agriculture, Forest, Wildlife, Tourism, Pastures, Livestock, etc.

Management planning shall be a continuous ongoing activity, which shall be undertaken with the collaboration of the local communities.

Intervention 4.3.1

Regular Development and Updating of VCDPs

The VCDPs have emerged as important documents of the VCCs; these shall be updated on a regular basis. Fine tuning and updating of social baselines as well as natural base of the VCDPs will be undertaken.

Intervention 4.3.2

Develop Linkages with Agriculture, other Line Departments and NGOs

Linkages with Agriculture and other line departments, like the Livestock Department, shall help the Park in the long term. A mechanism shall be developed to promote linkages with other NGOs like AKRSP/SRSP active in the area.

Objective 5

Promote management-oriented research on the socio-ecological aspects of the Park

The importance of research on various aspects of the CGNP cannot be under estimated. However experience during the implementation of PAMP showed that the project authorities did face problems in getting good quality researchers to come to Chitral. Moreover, the nature of much research related to the CGNP is multidisciplinary therefore it is difficult to evaluate and approve the consultants' reports. It is therefore important that these factors are kept in mind while awarding research contracts.

Prescription 5.1

Develop Terms of Reference (TORs) and Establish the Research Review Committee

Intervention 5.1.1

Promote Research Friendly Conditions in Chitral

There is hardly any research institution in Chitral. Due to physical isolation and harsh climatic conditions, educationists and researchers are not attracted to serve in Chitral. These factors make the conditions for researchers non-conducive. Therefore, the Park Association has to rely on short-term consultants for all scientific studies. Any Prescription or intervention has to be based on sound science. Project implementation

experience shows that hiring short term consultants does not help generate adequate knowledge that can provide a solid basis for knowledge based interventions. Therefore, a Research Review Committee (RRC) shall be established. The RRC shall comprise of experts from diverse disciplines of social, natural and physical sciences. Calling regular meetings of the RRC would help the Park Management who are educated and trained in Wildlife Science only. RRC meetings would be expensive as experts from all over the country shall be its members. As a first step, the RRC shall approve a Research Plan for the CGNP. The Research Plan shall be regularly updated to keep pace with the latest developments.

During the Project implementation phase experience showed that there are many R & D institutions as well as academic institutions all over the country that are engaged in research on one aspect of the Park or another. Moreover, the regular students of postgraduate level can also be encouraged (goaded) to undertake research in scientific issues of interest for the Park.

In order to achieve this, substantial investments are needed; the benefits however, will be enormous. Many R & D (Research and Development) institutions already working on some aspects of the Park shall be asked to share results. The Research Review Committee will finalize its own TORs, while its members shall be persons having vast experience as practitioners, academics or researchers.

Intervention 5.1.2

Encourage National Academic Institutions to Include CGNP Related Issues in their Regular Field Research Programs.

The regular degree level courses in sociology/ anthropology require students to spend a few months in rural communities as compulsory requirement to earn a degree. Similar is the case for Masters level degrees in natural sciences all over the country. In view of paucity of baseline data the Department/Park Association shall endeavor to encourage the universities to take up topics related to various aspect of the CGNP. In order to attract the students, a regular program to contact the academic institutions as well as students shall be undertaken. Students shall be attracted to undertake research work in the CGNP and its surrounding areas when they shall be provided incentives to partially meet their living and logistics expenses. It was observed during the implementation of the Project that a few academic institutions and some researchers are already engaged in research that is of interest for Park planning. The Park authorities however work in isolation from these

researchers. Efforts shall be made to bring all such researchers for benefit of the Park managers.

Intervention 5.1.3

Develop TORs and Research Program for Social and Biophysical Aspect of the Park

In order to undertake research systematically a Park Research Program (PRP) shall be prepared. The preparation of the research program shall be outsourced. The consultant shall prepare the program in consultation with the DFO Wildlife CGNP. The Research Review Committee shall approve the PRP, thereby ensuring that duplications are avoided. Such a system does exist in other national organizations like the Pakistan Science Foundation (PSF).

Intervention 5.1.4

Develop a System of Referee Review of Research Results

Experience of PAMP implementation has also shown that at many occasions the views of experts differ, moreover, there is no mechanism to check plagiarism. Therefore, keeping in view the experience of Pakistan Science Foundation (PSF), a system of peer review of consultants' reports should be in placed. The reviewers shall be compensated financially for their time.

Intervention 5.1.5

Conduct Feasibility for Training of Local Colleges & their Involvement in Park Related Research

Although there are limited educational facilities and capabilities in the colleges of Chitral, there however remain some opportunities to build capacities of the teaching staff and select students to at least assimilate research results in their spheres of influence. A feasibility study to involve the teaching staff and students as well as to assign them to the various scientists who keep on visiting CGNP shall be undertaken. Some research work could be assigned to the local colleges. The Research Review Committee would however, approve all such allocations to ensure quality and transparency.

Intervention 5.1.6

Feasibility of Involving Local Students in Research

Subject to approval by the Research Review Committee, some students may be considered for sponsorship. These students could be Masters and

PhD level students who undertake fieldwork in Chitral. Others could be encouraged on the advice of the Research Review Committee.

Intervention 5.1.7

Develop Indicators for Ecosystem Health

Nonetheless a wealth of information on Markhor census is available but the habitat range and migration pattern need more thorough study. Data on fox, wolf and other small mammals is also scarce or non-existent. Regular insect surveys can also provide indicators that can be used to predict insect attacks. Monitoring of the water quantity and quality of Chitral Gol could be the main indicator of ecosystem health. Similarly regular taxonomic surveys with provision of comparing species composition of flora and fauna in particular insects can also be very useful indicators.

Possibility of building local capacity to collect data for senior visiting researchers shall be considered. Other data like climate, soils and geology as well as remote sensing data also needs attention.

Intervention 5.1.8

Finalize List of Research Topics

Based on experience gained while awarding research studies during the execution of the Project, an indicative list of research topics has been prepared and is given below. This list was discussed with the participants of the consultative meetings held during the preparation of this Management Plan.

i. Monitor Chitral Gol Water Quality and Quantity on Regular Basis

All the watersheds finally drain into the Chitral Gol stream; therefore placing a system to monitor the quality and quantity of its water is the most important indicator of the health of the Park's ecosystem. Possibility of including other streams may also be studied.

ii. Taxonomic Surveys of Flora and Fauna

Visiting consultants have conducted studies on the flora and fauna under the Project. However, all these visits were for short durations, and almost all have mentioned this as a limiting factor. The Research Review Committee may look on ways and means to address this issue. Floristic surveys had not been undertaken in the Park; this shall be a priority for research.

iii. Study Ecology of Customary Grazing Systems

The Project collected a wealth of qualitative data on the traditional grazing systems practiced by the indigenous communities. This data can be very useful when synchronized with quantitative data of the impact of the traditional grazing systems on range ecology. The results of studies designed by involving sociologists and range scientists have the potential of replication at other places.

iv. Non Timber Forest Products (NTFPs) Studies

Non-timber forest products have a vast potential of providing employment to the local population. Studies on availability, sustainable harvesting, processing, packaging and marketing of the NTFPs are therefore essential.

v. Species Re-introduction Feasibilities

There is much talk about re-introduction of the Urial and black bears in the CGNP. Prior to undertaking such activities, proper studies may be conducted.

vi. Sociological Studies of Communities

Social change, cultural identity and conservation of local cultures are frequently discussed. Many local and foreign universities are already involved in these studies; the Department/Park Administration can facilitate these institutions and in return benefit from the research results. The Department to the academia can also propose new applied research problems. There is a need to have a mechanism to create linkages between the Department/Park Association and the academia involved in sociological research.

vii. Invasive Alien Species Extent, Threats and Remedies

Invasive Alien Species (IAS) do not appear to pose any threat to flora, fauna or the ecosystems of the Park. No scientific studies on AS have been done for the CGNP so far. Therefore, the threat of IAS cannot be overlooked. There is no R & D Institution in Chitral that can undertake research on IAS. It is therefore important that the Department and Park Association may not overlook this important aspect. Regular taxonomic studies of flora and fauna shall be undertaken. A list of local plants and animals and their extent shall be prepared. Similarly, a list of all introduced plants and animals shall also be prepared. This shall be compared on annual basis. All exotics shall be monitored, any abnormal increase in species composition shall be noted and

appropriate actions taken. These actions shall be taken in consultation with the RRC. National and international actions required under the CBD shall be attended on priority. A list of actions to be taken on IAS as required under the CBD and national policies shall be prepared and actions taken to fulfill these shall be taken. Relevant meetings on IAS at the national and international levels shall be attended.

viii. Likely Impacts of Feral Animals on Natural Ecosystem

Feral cats and pigeons do not appear to pose any threat to the biodiversity of the Park now.

Though damages of feral dogs in the form of killing markhor in the pack has been observed. However, studies on the likely impacts may help in taking remedial measures beforehand.

ix. Eco-tourism Studies on Legal and Institutional Arrangements

Eco-tourism has developed as a discipline distinct from tourism during the past few years. It is not only the ecological impacts of tourism but also the institutional arrangements, legal framework, community role, etc. that need to be catered to in any eco-tourism strategy for the CGNP.

x. Livestock Wildlife Interaction Studies

Since livestock of the adjoining villagers is in frequent contact with wildlife, and keeping earlier damages occurred in Toshi in 1999-2000, such studies are of utmost importance.

xi. Pollution Influences on the CGNP

There is no system of solid, liquid and hospital waste disposal in Chitral town. Notwithstanding the dangers caused by pollution to the general environment, this hazardous waste also poses a threat to the CGNP. Likely impact of pollution on the Park is an important subject for further research.

xii. Enclosure Plots Construction and Maintenance in all Representative Ecological Zones

Enclosures in all representative areas can provide a wealth of information on flora and ecosystem trends when the floristic composition is compared with the baseline year.

xiii. Strategize Study for Trophy Hunting in CGNP

Trophy hunting has emerged as a viable tool for conservation; it has shown its worth in areas adjoining the CGNP and it needs strategizing to include other candidate areas, including the CGNP.

xiv. Develop a System for Regular Monitoring of Floral, Faunal, including Insect, Composition Trends and Threats and Establish Baselines for Regular Comparison of Species Lists

Regular monitoring of various components of biodiversity including flora, fauna – and insects - in a systematic way will generate a wealth of information for conservation purposes.

Prescription 5.2

Develop Seasonal and Annual Monitoring Mechanism of Key Wildlife Species

Once the baseline year has been notified, a regular system for monitoring of key wildlife species would generate the data required that could be interpreted and used to generate prescriptions for future interventions.

Intervention 5.2.1

Develop a System to Conduct Periodic Surveys for Flora and Fauna

Many primary data on Markhor and birds has been generated for the CGNP. However, more is needed on its range and migration patterns. Similarly, data on Snow Leopard and other flora and fauna is needed. A system for monitoring of the following wildlife species is also needed:

i. Birds
ii. Key species: Markhor, Snow Leopard, wolf, lynx, fox
iii. Small mammals
iv. Reptiles and amphibians
v. Plants
vi. Insects

Intervention 5.2.2

Comparison of Survey Results with Baseline Year

A system shall be developed to interpret wildlife census data and compare it with the baseline year. The baseline year shall be decided and notified at the highest level of the Wildlife Department.

Prescription 5.3

Develop Research Linkages with National and Foreign Academia

Development of research linkages with national and foreign academia would help the Department in the short and long term. Chitral has the unique advantage of easily attracting international attention due the inclusion of the Kalash in its custodial communities. Many foreign researchers regularly visit Chitral and it should not be very difficult to coordinate with them.

Intervention 5.3.1

Conduct Study on Feasibility of Development of Linkages with National and International Academia

Preparation of a list of individuals and institutions in social, biological and managerial sciences can be outsourced. A list of the regular foreign scientists who visit Chitral would definitely help the Park to solicit their support.

Intervention 5.3.2

Share Research Results and Develop a System of Refereeing

Sharing of research results and development of a system of refereeing would help the Project achieve its objectives and benefit from research. This system shall be prepared and implemented, and adequate funds as remuneration for the referees shall be provided.

Intervention 5.3.3

Disseminate Research Results to the Communities

A system for dissemination of research results to the custodial communities would definitely be useful.

Intervention 5.3.4

Support Research Facilities in the Educational Institutions of Chitral

Degree level classes are available in the colleges of Chitral. A system to involve the students and faculty in research would not only help in building local capacity but also in disseminating its results.

Objective 6

Ensure financial sustainability

Prescription 6.1

Impose Visitor Fee

Charging entry fee from visitors to National Parks is a common practice in many PAs around the world. Entry fee would generate funds to sustain the conservation efforts of the Park. Separate fee for taking cameras, movie cameras may also be imposed.

Intervention 6.1.1

Prepare Fee Schedule for Local and Foreign Tourists

The fee schedule for local and foreign tourists will be prepared. Students and researchers will be allowed free entry.

Intervention 6.1.2

Regularize the Schedule from the Competent Authorities

The schedule of entry fee and exemption regulations shall be notified in the official gazette.

Prescription 6.2

Plan and Implement Trophy Hunting inside the Park

Studies of Markhor population show that the population is enough to warrant the introduction of trophy hunting inside the Park. As a first step its home range and movement patterns shall be studied. Revenues generated from trophy hunting would be a good source of sustainable income to replenish the VCF.

Intervention 6.2.1

Preparation of Case for Allowing Trophy Hunting

The Project authorities will prepare a case after consulting the communities for promotion of trophy hunting inside the Park. This shall however, depend on the ruling of the Court on the pending court case against the Mehtar.

Intervention 6.2.2

Enhance CITES Trophy Quota

A case will be initiated with the NCCW for allocation of additional quota for the CGNP under CITES.

Prescription 6.3

Revise Trophy Revenue Sharing Formula

Presently the income from trophy hunting fee is shared between the Communities and the Government at a ratio of 80: 20. In order to reward the communities and enhance their conservation funds, a case for giving the entire trophy fee to the communities shall be undertaken. This will substantially increase the VCF while the amount is negligible for the Government. A share from the trophy proceeds shall also be awarded to the wildlife staff as a token of recognition of their dedicated work.

Intervention 6.3.1

Get Government Notification Issued

A notification to revise the sharing of income from trophy hunting shall be issued.

Intervention 6.3.2

Hold Dialogues with Communities on Sharing the Trophy Income

This ongoing process however would also include modalities to share the income from trophy hunting amongst the communities.

Prescription 6.4

Operationalize, Enhance and Sustain Endowment Fund

For the success of any endeavor, a sustainable flow of funds is essential. The Endowment Fund for the PAs has been created made operational. However, the capital of the fund need enhancement so that it could sustain the activities for achieving the overall objective of long-term sustainability of the Park.

Intervention 6.4.1

Training Programs/Workshops on Trust Fund Operations

The communities and the wildlife staff need regular training to make effective use of the fund and keep it operational.

Intervention 6.4.2

Explore and Develop New Sources to Enhance the Trust Fund and Fund-raising

New sources of funds need to be explored; the possibility of recruiting a fundraiser or outsourcing the preparation of a fund raising activity also needs consideration.

Intervention 6.4.3

Feasibilities on Viable Projects

Prior to awarding any new project, it is worth that any amount spent to prepare its feasibility and approve only those found feasible.

Intervention 6.4.4

Training Need Assessment for Marketing of Community Based Local Products

Marketing of local products, especially those prepared by the W-VCC members, has been identified as a main bottleneck in promotion of local skills. TNA for giving the essential marketing skills to the local communities will help alleviate poverty and generate more employment opportunities.

Intervention 6.4.5

Explore Marketing Opportunities and Opening of New Avenues for Marketing of Products

Although there is a fancy for purchasing local products in the local and foreign markets; yet due to non-availability of outlets for most of the products prepared by the local VCCs and W-VCCs, this potential remains un-tapped. Exploration of new avenues for marketing would be helpful for the local communities.

Prescription 6.5

Enhance Local Funds Generation

PAMP had put a condition of generation of local funds to the tune of 5% of the total funds to be granted to the VCF. This led the communities to generate the required amount. Saving and depositing funds for use in local conservation activities may continue so that the communities also have a sense of ownership of the VCF.

Intervention 6.5.1

Training of VCC/W-VCC Members for Income Generation Activities

Training of the local communities to support income generation activities will be an ongoing process. This endeavor would be successful if lessons learned from other projects of AKRSP, SRCP, etc. and other areas are replicated and continuity is provided by the Project.

Intervention 6.5.2

Proposal Writing Trainings for Government and Various Donors

Many windows for project funding are available however; lack of proposal writing skills hampers the local communities from accessing these funds.

Trainings for proposal writing as well as accessing the donors shall be part of this intervention.

Prescription 6.6

Draw on Government Development Funds

The federal government and provincial government of Khyber Pakhautnkhwa has attached high priority to the environment and protected areas. Projects for funding by the federal and provincial government shall be prepared in accordance with the priorities already set.

Intervention 6.6.1

Preparation of New Project Proposals

New project proposals shall also be prepared for the communities and the Department.

Prescription 6.7

Draw on District Government Development Fund and Other Potential Avenues

Many funding sources including the district government remain untapped.

Intervention 6.7.1

Explore New Sources of Funding by Holding Donors Conference

A donors conference may be considered for Chitral Gol National Park and all potential donors may be invited to see first-hand the progress made by the Project.

Objective 7

Establish, improve and maintain Park infrastructure

A good park infrastructure to cater to the protection/vigilance needs, provide facilities to the staff and researchers without disturbing the Park ecosystem and provision of minimum facilities to the visitors is essential.

Prescription 7.1

Develop and Improve Park Documentation

A system to record the history of interventions in the Park would be of much help to all future planners and researchers.

Intervention 7.1.1

Maintenance of Park Diary/Staff Tour Diary

The Park diary would record all interventions, investments, sightings of wild animals, important events like natural calamities, incidences of

poaching, etc. As per rules of the Department, the DFO Wildlife, Range officer and his subordinates shall maintain the diary and submit it regularly to his supervisory staff. It shall be mandatory for the Wildlife Ranger and Wildlife Watchers to write regular diaries. These can be maintained as daily logs. The Ranger or the Park In-Charge, however, can record important events through special reports.

Intervention 7.1.2

Notify Frequency of Mandatory Touring by the Officers and Field Staff

As per standard practice of the Forest and Wildlife Department, all officers have to spend at least 2/3rd of their time in the field, until advised otherwise.

Intervention 7.1.3

Develop and Print Posters

The Wildlife Department had printed many posters a few years ago. Publication of CGNP specific posters would help popularize the Park and contribute towards environmental education.

Prescription 7.2

Create and Improve Park Infrastructure and Facilities

The indicative list of interventions is given below:

Intervention 7.2.1

Maintenance of Existing Buildings

The buildings constructed under PAMP and other buildings in the CGNP shall be maintained. The existing buildings shall also be maintained.

Intervention 7.2.2

Maintain Roads, Hiking Trails and Viewpoints

The existing roads, hiking trails and viewpoints shall be maintained.

Intervention 7.2.3

Construction of Mountain Huts

A few mountain huts shall be constructed at appropriate sites. These shall be for the purpose of facilitating the touring officers on duty and the tourists.

Intervention 7.2.4

Drinking Water Supply at Chaghbini

The drinking water supply at Chaghbini shall be re-invigorated.

Intervention 7.2.5

Subject to Land Settlement, Demarcation and Boundary Pillar Construction

Land settlement in Chitral is in progress; upon its completion, the construction of boundary pillars shall be undertaken.

Intervention 7.2.6

Roadside Outlooks

The outlooks of the existing road shall be improved.

Intervention 7.2.7

Roadside Signage

Attractive road signage shall be placed at all prominent routes so as to attract and guide visitors. At appropriate places, the do's and don'ts for visitors, like playing loud music, etc. can be mentioned.

Intervention 7.2.8

Maintenance and Up Gradation of Communication System

A communication system has been installed in the CGNP. It shall be maintained and upgraded to bring the DFO wildlife and his staff in the loop for protection and more effective management.

Objective 8

Develop and maintain monitoring and evaluation system for CGNP

The objective of the development and maintenance of an M & E system is important as it shall not only provide stewardship to the Park authorities to take timely remedial actions for achievement of the Park vision but also for any new issues that come to surface. The availability of remote sensing data and tools like GIS has emerged as useful monitoring tools. These can effectively be used to monitor areas inside and outside the Park.

Prescription 8.1

Establish Internal Monitoring System

An internal monitoring and evaluation system, managed by a full time M & E officer, shall be fully equipped and operational to perform its duties. The standard

M & E tools shall be applied as well as GIS/RS to update the Park administration on ecosystem health and wildlife populations.

Besides, following self-explanatory interventions shall be undertaken under this prescription:

Intervention 8.1.1

Establish M & E System for Socioeconomic Aspects

Cultural studies, especially those aspects that are related to nature, trends in social change, beliefs, patterns of use of flora and fauna, and traditional knowledge are some of the aspects that can be monitored over time. This also includes demographic and economic indicators. A system for monitoring the socio-economic aspects shall be developed.

Intervention 8.1.2

Establish M & E System for Biophysical Aspects

A Monitoring system for change in floral and faunal composition, land use and land use change shall be developed and results compared with the baseline year on regular basis.

Intervention 8.1.3

Fixed Point Photograph Monitoring System

This is a standardized system for wildlife monitoring and shall be deployed by the Wildlife Department experts**.**

Intervention 8.1.4

Remote Sensing and GIS Based Monitoring System

Remote sensing based GIS systems are effective tools for monitoring the land cover, vegetation composition and wildlife census. Trends in wildlife migration and ecosystem dynamics can also be included in this system. Mapping and monitoring of areas outside the Park can also be included for monitoring.

Intervention 8.1.5

Feasibility Studies for Initiation of Radio Collaring

Radio collaring and tracking of wildlife through satellite based tracking systems can play a vital role and assist the decision makers in making necessary choices for species and habitats. Although neither these systems nor the expertise are available in Pakistan, however, the

feasibility and effectiveness of adopting radio collaring as a species-monitoring tool shall be studied, and if feasible, adopted.

Intervention 8.1.6

Annexure-I (Term of References)

Hiring of Consultancy Services by the "Development and Management of National Parks" Project

Purpose of the Consultancy:

Purpose of the consultancy is to revise management plan for ChitralGol National Park (CGNP) of Khyber Pakhtunkhwa (KP).

Objectives and scope of the study:

Revise the existing management plan to ensure effective management of the NP.

Whereas the Project Director (Client) is implementing a project for improvement and development of National Parks in the province and has a provision for conducting "Revision of Management Plan for CGNP" and the Consultant has the capacity and willingness to accomplish the task to the satisfaction of the client, both parties agree to accomplish the task in the public interest on the following terms and conditions;

Terms of Reference for key outputs and activities:

The Consultant shall;

i. Update facts and figures in the plan.
ii. Incorporate missing aspects of management of the national park after consultation with relevant staff; record of the department and local CBOs established by the department.
iii. Incorporate the necessary secondary data, pertaining to various aspects of the NPs, collected through other studies under the project.
iv. Make prescription of the plan compatible with provision of the Khyber Pakhtunkhwa Wildlife and Biodiversity Act, 2015.
v. Make prescription of the plan compatible with need of the department, aspiration of the local communities and obligations of the Multi-Environmental Treaties (MEAs).
vi. Submit a presentable technical report with necessary photos and maps on 80 grams A-4 paper in color print properly bind with four extra copies and a soft copy on the following schedule to the office concerned.

1. 1st Draft: On or before 15th June 2017,
2. 2nd and final draft: On or before 23rdJune 2017.

The Client shall ensure;

i. Payment of mobilization advance of twenty percent (20%) of the contract amount upon signing of the agreement;
ii. Facilitate the consultant for meetings with the community members when required;
iii. Payment of fifty percent (50%) of the contract amount upon submission of first draft of the study report;
iv. Payment of thirty percent (30%) of the contract amount) upon submission of final draft of the study report;

Other terms and conditions shall include:

i. The consultant shall submit its financial and technical proposals on the basis of above ToRs on proper letter head in a sealed envelope on 20/11/2016.
ii. The client shall ensure opening of the proposals in presence of the shortlisted firms/individuals on the day of submission.
iii. The consultant shall provide a proof of registration with Khyber Pakhtunkhwa Revenue Authority (KPRA) at the time of submission of the above mentioned proposals, as required vide Circular N0. AD(M&E)/Enf/KPPRA/1-1/2015-16.
iv. The client will sign a contract with the selected firm/individual for the purpose of payment of consultancy charges.