(Final Report)

An analysis of lessons learnt and best practices, a review of selected biodiversity conservation and NRM projects from the mountain valleys of northern Pakistan.

Faiz Ali Khan
February, 2013

Contents

About the report i
Executive Summary ii
Acronyms vi

SECTION 1. INTRODUCTION 1

1.1. The province 1
1.2 Overview of Natural Resources in KP Province 1
1.3. Threats to biodiversity 4

SECTION 2. SITUATIONAL ANALYSIS (review of related projects) 5

2.1 Mountain Areas Conservancy Project 5
2.2 Pakistan Wetland Program 6
2.3 Improving Governance and Livelihoods through Natural Resource Management: Community-Based Management in Gilgit-Baltistan 7
2.4. Conservation of Habitats and Species of Global Significance in Arid and Semiarid Ecosystem of Baluchistan 7
2.5. Program for Mountain Areas Conservation 8
2.6 Value chain development of medicinal and aromatic plants, (HDOD), Malakand 9
2.7 Value Chain Development of Medicinal and Aromatic plants (NARSP), Swat 9
2.8 Kalam Integrated Development Project (KIDP), Swat 9
2.9 Siran Forest Development Project (SFDP), KP Province 10
2.10 Agha Khan Rural Support Programme (AKRSP) 10
2.11 Malakand Social Forestry Project (MSFP), Khyber Pakhtunkhwa 11
2.12 Sarhad Rural Support Program (SRSP) 11
2.13 PATA Project (An Integrated Approach to Agriculture Development) 12

SECTION 3. MAJOR LESSONS LEARNT 13

3.1 Social mobilization and awareness 13
3.2 Use of traditional practises in Awareness programs 13
3.3 Spill-over effects 13
3.4 Conflicts Resolution 14
3.5 Flexibility and organizational approach 14
3.6 Empowerment 14
3.7 Consistency 14
3.8 Gender 14
3.9. Religious teachings 15
3.1 The role of financial mechanisms in securing livelihoods 15
3.11 Eco-development 15
3.12 Understanding local political and social issues 15
3.13 Acceptance and participation 16
3.14 Policy 16
3.15 Capacity building 16

SECTION 4. BEST PRACTICES 17

4.1 Community Mobilization 17
4.2 Awareness and Education 18
4.3 District Coordination Committees (DCCs) 18
4.4 Student Engagement Programs 19
4.5 Engagement of Research Institutions and Academia 19
4.6 Sustainable Financial Mechanism 19
4.7 Joint Forest Management (JFM) 20
4.8 Exposure and Exchanges 20
4.9 Resource Conservation Plans 21
4.10 Manual for Collection and Post harvest processing of Medicinal and Aromatic Plants 21
4.1 Sport Hunting 22
4.12 Infrastructure 23
4.13 Enterprise Development 23
4.13.1 Private Nurseries (both forest pants and fruits) 23
4.12.2 Women Stores 24
4.13 Innovative Insurance Scheme for Livestock Depredation 24
4.14. Livestock Breed Improvement and Extension Workers 24

SECTION 5. CAPACITY BUILDING 26

SECTION 6. CONTACT DETAIL OF NRM PROFESSIONALS 28

SECTION 7. RECOMMENDATIONS 31

7.1 Channelizing Government's Own Resources 31
7.2 Technical Support and Authenticity of Data 31
7.3 Nomenclature 31
7.4 Outsourcing of Components 32
7.5 Selection of Pilot Sites in Chitral 32

Tables:

Table No. 1. Forest Types of Khyber Pakhtunkhwa 2
Table No. 2. List of Recommended Training 26
Table No. 3. Contact Detail of NRM Professional 28

About the Report

This report in hand is based on the review of 11 projects related to conservation of biodiversity and natural resource management and two rural development organizations engaged in the implementation of rural initiatives in the northern regions including Khyber Pakhtunkhwa. The basic objective is to generate information for project "Conservation and Management of Biodiversity" in Malakand Division (BK), which will be implemented by GIZ in collaboration with relevant government institutions, private sector and local communities in the selected sites of Khyber Pakhtunkhwa.

The author also participated for one day in the inception planning workshop organized by GIZ under the BK project management at Islamabad mainly for representatives of relevant government departments from Khyber Pakhtunkhwa province. The information sensed from the discussion in the workshop regarding selection of pilot sites is also incorporated in the report.

The report provides information regarding the general trend of biodiversity components in Khyber Pakhtunkhwa presents an extract of lessons learned from the projects reviewed and identifies major best practices for replication in the BK project. Furthermore, recommendations provided at the end will help facilitate the management to select additional pilot sites in Chitral for project implementation.

Executive Summary

Several conservation and development initiatives have been implemented or currently under implementation at various parts of Pakistan through government institutions, national and international non-government organizations. Among several other achievements, these initiatives (projects/programs) share a common goal of contributing to the socio-economic uplift of local human population. In addition, the implementation of these initiatives also set up demonstrations generating lessons and practices, if carefully analyzed, may be incorporated in the policies for institutionalization by the public sector for mass scale replication and benefits of the rural societies.

The mountain valleys in northern region of Pakistan including Khyber Pakhtunkhwa is blessed with a range of natural resources including natural forests, wildlife, agriculture, livestock, vast rangelands, water and huge amount of human resources. These resources serve as major life supports system for local population as well as provide means for several consumptive industries like textile, agricultures, tourism etc. Due to the increasing poverty, mushrooming human population, over harvesting an unplanned development, the natural resource base is gradually depleting. One of the main reasons of the continued degradation of resources and lack of ownership at the local level was the top-bottom approach, where pre-determined plans were forced to be followed-thus implementation was viewed as external agenda delivering little outputs.

Realizing the need for future sustainability, agencies remolded the implantation mechanisms from resource centered authoritative approach towards community based management through participatory planning and development. To this end, many government and non-government organizations have been trying to arrest the degradation of natural resources and contributing to the local socio-economic conditions through dedicated initiatives in the biodiversity and NRM sectors; Forestry, Wildlife, Agricultures, Horticultures, Watershed Protection and improvement, Rural development and Integrated Resource Management.

Focusing communities rather than resources, several projects /programs in the NRM sector, one or the other way, apart from adding to the local economy have generated positive lessons and practices suiting the socio-political and cultural environments. Unfortunately, with the exception of very few, such lessons and practices are hardly incorporated in the government formal development agenda for future replication.

The initiation of rural development projects specifically AKRSP proved the efficacy of communal village and interest based institutions (VOs) to face the development challenges, take collective decisions and develop own capital in the villages.

The issues related to common resource use required broad based institutions with a mandate to take effective decisions. Efforts were made in NRM initiatives like Kalam Integrated Development Project and Siran Forest Development Project to facilitate formation of NRM based model of local institutions, which were further polished and fine tuned in the biodiversity conservation related projects supported through IUCN, WWF, WCS and many others. This concept of building the planning and implementation skills of communities for onward management and wise use of natural resources proved that success of biodiversity conservation projects is unlikely unless communities are engaged in engaged right from the design to the implementation of the initiatives.

Several best practices with proven sustainability are witnessed in the remote valleys of northern mountain valleys. Raising private forest and fruit nurseries, joint forest management, sport hunting, district coordination mechanism, resource conservation plans, extension cadres

for livestock and agriculture, students engagement, conservation endowments, community exchanges, infrastructure (irrigation channels and protective walls) for land development and collection and post harvest processing of medicinal and aromatic plant species are included among the list of promising practices.

The need for continuation of such practices through channelizing internal government resources and their inclusion in policy for future implementation at the government end is highly warranted. Donor funded projects and programs need to be owned by the government line departments. The better way might be to encourage and access government investment through dedicated PC-Is.

Lastly, successful implementation of NRM projects also warrants authentication of the data and information produced for the larger benefits of resource conservation and government ownership.

Acronyms

ADP	Agricultural Development Program
AJK	Azad Jammu & Kashmir
AKRSP	Aga Khan Rural Support Program
CBO	Community Based Organization
CCHAs	Community Controlled Hunting Areas
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CIWC	Central Indus Wetlands Complex
DCCs	Establishment of District Conservation Committees
FAO	Food and Agriculture Organization for United Nation
FIGs	Farmers Interest Groups
GG	Gilgit-Baltistan
GEF	Global Environment facility
HDOD	Human Development Organization, Doaba
IUCN	International Union for Conservation of Nature
JFM	Management of Forests
KIDP	Kalam Integrated Development Project
KIFMP	Kaghan Intensive forest management project
KP	Khyber Pkhtunkhwa
AHITI	Animal Husbandry in-Service Training Institute
LWUP	Land and Water Use Program
MACP	Mountain Areas Conservancy Project
MACF	Conservancy Trust Fund
MCWC	Makran Coastal Wetlands Complex
MAPs	Medicinal and Aromatic Plants
MEDA	Mennonite Economic Development Association
MSFP	Malakand Social Forestry Project
NADP	Northern Areas Development Project
NCS	National Conservation Strategy
NGO	Non Governmental Organization
NRM	Natural Resource Management
NRSP	National Rural Support Program
PMAC	Program for Mountain Areas Conservation
PPAF	Pakistan Poverty Alleviation Fund
PRIF	Pre investment Facility
PSL	Project Snow Leopard
PWP	Pakistan Wetlands Project
SRWC	Salt Range Wetlands Complex
PATA	Provincially Administered Tribal Areas
SPCS	Sarhad Provincial Conservation Strategy
SFDP	Siran forest development project

SRSP	Sarhad Rural Support Program
STEP	Society for Torghar Environmental Project
SUSG CAsia	Sustainable Use Specialist Group for Central Asia
UNDP	United National Development Program
USAID	United Nations Agency for International Development
VCFs	Village/Valley conservation endowments
VDCs	Village Development Committees
VOs	Village Organizations
WCS	Wildlife Conservation Society
WOs	Women Organizations
WWF	Worldwide Fund for Wildlife

SECTION 1. INTRODUCTION

1.1. The Province

Stretched on an area of 74,521 km² (28,773 sq mi), Khyber Pakhtunkhwa (KP) has a total population of approximately 17 million with 52% males and 48% females (1998 census). Geographically the province falls in two extreme climates, very cold (Chitral) and extreme hot (DI Khan)-thus divided into northern and southern zones. The northern zone extends from the Hindu Kush range to the borders of Peshawar basin with cold weather due to heavy rains and snow in winter and pleasant in summer except Peshawar.

The southern zone mostly falls in arid climate extending from Peshawar onward to Deraiat basin having hot summers and relatively cold winters and scantly rainfall. Despite the large portions of the province represent typically dry, some pockets of the province are considered heavily wettest in the eastern fringes. The major rivers that cross the province include River Kabul, Swat, Chitral, Panjgora, Bara, Karam, Gomal and Zob.

A major portion of the hilly terrain of Swat, Kalam, Upper Dir, Naran, Kaghan and rugged beauty of Chitral historically serve as major attractions for tourists from across the globe due to the natural wealth and rich cultural civilizations.

1.2. Overview of Natural Resources in KP Province

Khyber Pakhtunkhwa is blessed with a range of natural resources including natural forests, wildlife, agriculture, livestock, vast rangelands, water and huge amount of human resources. Zoo-geographically, KP falls in a transitional zone between Palaearctic and Oriental realms and serves as major fly way for migratory birds.

The biological diversity of the northern mountain regions has been recognized as being of vital importance globally due to the presence of a wealth of significant species found in the large variety of fragile ecosystems. The steep gradients bring immense climatic variation (temperatures vary from -20°C in the winter to 45°C in the summer), which has shaped the unique composition of the vegetation and associated animal species that we see today.

The Cedar, Junipers and Birch forests are the critical habitats for the endangered species like musk deer while the Pine forests are crucial for the growth of Morel mushroom and several other species of medicinal and aromatic plant with proven market demand and livelihood support for local communities across the province.

The key flora (in most parts of the northern zone) includes *Juniperus communis, Picea smithiana, Pinus willachiana, Cedrus deodara, Quercus balloot, Taxus baccata Salix denticulata, Pseudomertensia and Polentilla spp.* It is feared that Pakistan is experiencing the world's second highest rate of deforestation. This destruction is leading to the wholesale disappearance of trees, shrubs and ground flora, together with the vertebrate and invertebrate fauna they normally support (Fourth National Report prepared for CBD, 2011). The same is true for Khyber Pakhtunkhwa as well. Detail of forest types of Khyber Pakhtunkhwa, (extracted from Forestry Statistics of Pakistan, Pakistan Forest Institute, 2004) is given in table No. 1 below:

The harsh mountainous areas of Pakistan harbour a number of unique isolated and hardy species that have learned to co-exist in this extreme environment, together with the local human population. Khyber Pakhtunkhwa supports the world's largest surviving population of Kashmir Markhor and Western Tragopan. It is the only province where five out of six species of pheasants of Pakistan (Western Tragopan, Monal, Koklass, Cheer and Kalij pheasant) and four

sub-species of markhor out of five in Pakistan (Kashmir, Kabul, Astor and Suleman markhor) are found.

Table No. 1. Forest Types of Khyber Pakhtunkhwa

1	**Coniferous Forests.**	These forests mostly grow in the north and northwest hilly regions of Pakistan between an elevation of 1000 m and 3500 m
	Sub Alpine.	*Betula utilis* (Birch, Bhuj), *Abies pindrow* (Fir, Paludar).
	Himalayan Moist Temperate.	*Abies pindrow* (Fir, Palundar), *Picea smithiana* (Spruce, Kachal), *Cedrus deodara* (Deodar), *Pinus wallichiana* (Kail, Biar), *Taxus baccata* (Yew), *Aesculus indica* (Bankhor), *Juglans regia* (Akhrot, Khor), *Populus ciliata* (Palach), *Quercus dilatata* (Oak), *Acer caesium* (Tarkan),*Prunus padus* (Kalakath).
	Dry Temperate	*Pinus wallichiana* (Kail, Biar), *Cedrus deodara* (Deodar), *Juniperus excelsa* (Shur, Shupa), *Pinus gerardiana* (Chilghoza), *Quercus ilex* (Bani, Breh).
	Sub-Tropical Pine	*Pinus roxhurghii* (Chir, Chil), *Quercus incana* (Rin, Ring), *Rhododendron arboretum* (Chahan, Bras).
2	**Scrub Forests**	These forests grew upto 1000 m in elevation in the north and north-western regions of Pakistan. *Acacia modesta* (Phulai) *Olea ferruginea* (Kau), *Acacia nilotica* (Kikar, Babul).
	Tropical Thorn	*Acacia nilotica* (Kikar, Babul), *Acacia modesta* (Phulai), *Prosopis cinaeraria* (Jand, Kandi), *Salvadora oleoides* (Wan, Pilu), *Zizyphus mauritiana* (Ber),*Tmariz aphylla* (Farash, Ghaz) *Tecome undulate* (Lahura), *Nannorrhops ritchieana* (Mazri).

Source Forestry Statistics of Pakistan, Pakistan Forest Institute Peshawar 2004

Other prominent species are Snow Leopard, Common Leopard, Himalayan Ibex, Ermine, Musk Deer, Kashmir Flying Squirrel, Himalayan Black Bear, Yellow Throated Marten, Common Otter Long-tailed Marmot, Goshawk, Himalayan Snow Cock, Chukar, Golden eagle, Common Kestrel, Alpine Chough and several migratory birds nesting parts of the province for breeding.

The physical resources for agriculture are limited in KP province, with only 1.38 million hectares of very good to moderate quality and 580,000 hectares of poor-quality arable land (SPCS 1996). Of the total arable land, barely 46% is currently irrigated (Government of Pakistan, 1995), yet, agriculture as producer for food and source of disposable income for the two third of population is extremely important in the rehabilitation of the human environment.

People generally live in villages and hamlets dispersed along the valleys, engaged principally in farming, for subsistence and cash-crops. In the absence of sufficient suitable land for farming in most of the mountainous parts of the northern regions, artificial irrigation from networks of small channels is heavily practiced. Water is diverted along the sides of valleys, sometimes for considerable distances, from upstream rivers and from streams carrying snowmelt water. Important crops include maize, wheat, barley, millet, potatoes, peas, beans, and fruit and nut trees.

Interestingly, the people of Chitral manage to squeeze out two crops during their seven-month season. Wheat, planted by late October or early November is left in until it is harvested in May/June of the following year. Immediately after harvesting wheat, Maize is planted which takes till mid-September to harvest. Besides the two crops, the locals plant various fruit trees (apricot, plum, pear, loquat, walnut, cherry and apple) around the periphery of their farms and their houses. This provides them with basic fruit and nuts during the year, especially during the winter when supply of food is limited. In addition, Chitralis also grow spinach, cabbage, carrot, potatoes and tomatoes.

In some of the lower lying areas of Swat, rice paddies are also cultivated, and the area has tremendous potential for horticulture. Agriculture is the mainstay of most people though, with a relatively lower reliance on animals. Technologies have spread further and owing to the potential of the area have led to the adoption of many varieties of vegetables, foods and HYVs of grains. Besides a huge variety of fruits (including apples, pears, apricots, peaches, persimmons) potatoes, peas and onions have been introduced in the lower lying valleys.

The agro biodiversity (wild races) include Apricot (*Prunus armeniaca*); Walnut *Juglans regia*; Acorn *Quercus balloot*); Pine Nut *Pinus gerardiana*; Cumin Bunium persicum; Wild Rose *Rosa webbiana*; Sea Buckthorn *Hippopi rhamnoides*; Ephedra species, Horse Chesnut *Aesculus indica*; Morrel Mushroom (*Morchella conica and esculanta*) etc.

Livestock is an important sector particularly as producer for the high quality food for population. Almost 90 % of the livestock are owned by the small farmers and the landless. Livestock grazing is the most widespread use of land in the KP, practiced wherever natural vegetation can grow. Grazing lands are estimated to cover about 2 million hectares and, together with cropped land grazing, they provide all the sustenance for the province's 6.4 million goats and sheep and for about 80 % of its 4.6 million cattle and buffaloes (Sarhad provincial Conservation Strategy, IUCN).

Goat and sheep are kept for meeting the diary needs and occasional marketing. Free grazing coupled with additional pressure from landless pastoralists extends beyond the carrying capacity of grazing lands leading to land degradation, soil erosion and increased amount of competition between livestock and ungulate species. Some productive interventions have been made by the Malakand Social Forestry Project and Program for Mountain Areas Conservation through developing pasture management plans on demonstration basis, which proved very effective in capturing the interest of local communities in the valleys wherever implemented.

The livelihoods of many households in the mid and upper highlands of Pakistan have been partially dependent upon the trade of medicinal and aromatic plants for centuries. Given that much of the agricultural production in the northern mountains are at near-subsistence levels, collection of medicinal and aromatic plants (MAPs) is primarily a complementary cash-providing activity. Approximately 50-60% of the rural households in the upper northern regions of Swat, Dir, Shangla and Chitral are involved in MAP collection, but unfortunately many are still living in poverty (HDOD, 2012). Although the plant material collected often have a relatively high value in the market, in the absence of information regarding potential value and market demand, collectors are unable to harvest the full benefits.

According to a survey by the Pakistan Forest Institute, 75% of Pakistan's un-processed herbal drugs are extensively exported, and more than 200 species are locally traded within Pakistan. Local collectors, who have no training in sustainable harvesting methods, post-harvest handling, and proper storage of medicinal plants, collect an increased amount of such plants from the wild. These plants are typically collected, dried, processed and sold in local markets or exported to other countries.

1.3. Threats to biodiversity

The Convention on Biological Diversity defines the term "biodiversity" *as the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems*.

Biodiversity or biological diversity; simply a life support system provides us services and benefits in many different ways. For instance oxygen, watershed functions, soil formation, pollinations symbiosis, shelter, food, medicines etc. Several industries including agriculture, tourism, pharmaceuticals, fruit and beverages, textile etc depend on biodiversity.

The mountain environments of northern Pakistan in the Himalaya and Hindukush ranges harbour several unique species of fauna and flora including many globally threatened. Generally, these species and their habitats are gradually on decline due to anthropogenic changes coupled with natural calamities. The rapidly growing human population, increased poverty and great dependence on natural resources are leading to gradual habitat loss. Lack of the required legislation and polices with no recognition of locals communities in the planning and management of natural resources have traditionally segregated communities-thus a decreased sense of local level ownership persists across the resource rich areas.

Degradation of several species poses multiplier negative effect having ramification on others and the ecosystem at large. For instance hunting of big game species disturbs the predator-prey relationship, which in-turn has implications on livestock depredation, retaliatory killings and subsequent disturbance in the ecosystem functions and services.

Other major issues include deforestation, encroachment, illegal hunting practices, in adequate or poor enforcement of the existing polices, soil erosion, loss of habitat due to agriculture practices and lack of political will up to some extent.

SECTION 2. SITUATIONAL ANALYSIS

Review of the Related Projects and Programs

Traditionally, human population has a great dependence on the available natural capital for a variety of uses. In the absence of sustainable use parameters; top down approaches, conventional management practices, lack of awareness and lack of realization of value of resources, the overall status of resources particularly forests, wildlife, agriculture and rangelands showed a gradual decline. This downward trend had captured the interest of several national and international donor agencies to support the government line departments in the early 90s.

Initially, forests being the main source of revenue for government remained the focus of many targeted interventions-thus projects on introduction of exotic species for overcoming the energy shortage, increasing the forest areas, raising plantation on private lands, social forestry, farm forestry etc were initiated. Later on the canvas was broadened through initiating interventions in the watershed management, integrated development and community based NRM programs.

Soon after the internal displacement in 2009 and the subsequent floods of 2010 in KP province, a number of international, national and local non-government organizations initiated projects in almost every district of the province. While their contribution add to the local economy, majority of these organization have adopted a "hit and run" strategy mostly responding to local needs based on superficial assessment with poor monitoring and absolutely no long term plans.

At the moment approximately 150 large and small no-government organizations have their operation going on in various sectors. Among these, few have agriculture, livestock and medicinal plants on their menu.

For the purpose of this report, organizations and projects/programs either worked or currently working in the field of the biodiversity conservation and NRM sector are considered for review. These projects/ programs are generically discussed below;

2.1. Mountain Areas Conservancy Project (MACP)

Total cost	10.35 million US$
Project Number	PAK/98/G31
Donor Agency	GEF/UNDP
Duration	Seven Years (1999-2006)
Implementing Agency	IUCN and Wildlife Department of Khyber Pakhtunkhwa
Executing Agency	Federal Ministry of Environment

Project Summary

The MACP aimed at protecting the rich ecological landscapes and biodiversity of the Karakoram, Hindu Kush and Western Himalayan mountain ranges of northern Pakistan. It comprised a package of interventions to address the underlying causes of biodiversity loss in the region. The principle focus was on empowering local communities to manage biodiversity, making them accountable for the quality of their resource stewardship. Four conservancies were established encompassing a representative sample of the bio-geographic zones of the high mountains. Within the conservancies, activities facilitated the *in-situ* conservation of habitats and species and promote sustainable uses of components of biodiversity. The specific outputs of the project were;

- The institutional and human capacity of community level organisations to conserve biological diversity will have been strengthened and planning and management structures will be in place**.**

- Conservation values will have been imparted to local communities through a well targeted conservation education and awareness drive, with avenues developed for the sharing of information/experiences regarding natural resource management amongst villagers.

- A system for monitoring and evaluating project impacts, including ecological, and socio-economic outcomes will have been established.

- Development agencies and communities will be targeting financial and human resources towards long-term village eco-development in the conservancies.

- The knowledge base regarding sustainable use of components of biodiversity will have been enhanced, with results applied in on-going community development activities.

- Government policies and regulations will have been remoulded to support management of the conservancies and institutional capacities for managing participatory conservation models will have been strengthened.

- A Biodiversity fund will be in operation and will be contributing towards meeting the recurrent costs of Conservancy management.

Major Outputs

MACP remained instrumental for positive attitudinal changes towards conservation and sustainable use of biodiversity in the northern Pakistan. The project approach itself has been replicated by almost all community based initiatives in the natural resource management sector in Northern Pakistan. Some of the major achievements of the project include the legalized trophy hunting in the country, establishing the culture of community based valley development plans and setting up of an umbrella Mountain Areas Conservancy Trust Fund as long term financial support to community institutions for conservation activities.

2.2. Pakistan Wetland Program

Donor Agency	GEF/UNDP, Embassy of UK and cofounding form WWF, PPAF
Executing Agency	Ministry of Environment
Implementing agency	WWF-Pakistan
Duration	Seven years (2005-2011)
Total Cost	US $ 12 million

Project Summary

The project identified four selected Wetland complexes of the country including Makran Coastal Wetlands Complex (MCWC), Central Indus Wetlands Complex (CIWC), Salt Range Wetlands Complex (SRWC) and North-west Alpine Wetlands Complex (NAWC). The purpose of the project was to conserve globally important biodiversity in Pakistan without exacerbating poverty. Immediate objectives were (a) to create and maintain an enabling environment for effective and sustainable conservation of natural wetlands, and (2) to implement sustainable wetlands conservation of four representative sites that will serve as replicable models for subsequent nationwide wetlands conservation initiative.

Major outputs

Pakistan Wetland Project in addition to organizing capacity building events, conducting wetland surveys and producing digitized maps has supported the establishment of four national parks and has developed the national wetland policy. Though endorsed by the provincial governments, the policy awaits the final approval of Cabinet Division.

2.3. Improving Governance and Livelihoods through Natural Resource Management: Community-Based Sustainable Management in Gilgit-Baltistan

Geographic Scope	District Diamer, Gilgit Baltistan with gradual expansion to other potential pockets of the province.
Duration	WCS opened a program office in 1998 and the current program has been in continuous operation for 15 years.
Implementing Agency	Wildlife Conservation Society (WCS)
Executing Agency	WCS Pakistan Program

Project Summary

The Wildlife Conservation Society (WCS) has been working with local government and communities in Gilgit-Baltistan since 1997, building community governance structures based on natural resource management; increasing local capacity to manage natural resources such as wildlife and forests; and linking these institutions with the provincial government – improving management and local livelihoods while simultaneously helping to extend the reach and rule of law.

Major outputs

The program facilitated the creation of 65 community natural resource committees and an over-arching regional resource management organization (Mountain Conservation and Development Programme) consisting of members of the local committees and government. WCS is training and deploying 112 community wildlife rangers to monitor wildlife and enforce local and national regulations. The program has helped create 14 markhor conservancies and has begun the process of registering all 14 conservancies with the government as official Community Controlled Hunting Areas (CCHAs) or Community Managed Areas. The program now encompasses more than 80% of markhor habitat and population in Gilgit-Baltistan, along with over 80% of natural forests in the Province. Recent community ranger surveys have shown that populations of flare-horned markhor are making a remarkable comeback, with numbers estimated at having experienced a roughly 50% increase from what was estimated a little over a decade ago across the project area.

2.4. Conservation of Habitats and Species of Global Significance in Arid and Semiarid Ecosystem of Baluchistan

Implementing Agency	SUSG-CAsia, together with the local partner organizations Society for Torghar Environmental Project (STEP)
Donor Agency	GEF /UNDP
Duration	Seven years September 2005 –June 2012 (2 years extension)

Geographic Scope	District Qillasaifullah and selected hotspots of Noshki district.
Total budget	USD 1.45 million
Objective	Conservation of critically endangered habitats and species in the selected sites of both conservancies.

Project Summary

The project is premised on the rationale that community based resource management is the most effective way to conserve threatened and endemic habitats and species. The project seeks to provide incentives for conservation by promoting sustainable resource use regimes that provide access and benefits to local communities, for example, a trophy-hunting programme, regulated trade in reptiles and snake venom, and medicinal plants collection, processing and marketing. The project aims at systematically removing the threats and root causes for biodiversity loss. The expected outcomes are: increased awareness of stakeholders about environmental, economic and social benefits of conservation; an enabling environment for community-based conservation and sustainable use of biodiversity; capacity of communities, local NGOs, and government institutions strengthened for conservation and sustainable use of biodiversity; and livelihoods of local people improved and pressure on habitats reduced.

2.5. Program for Mountains Areas Conservation

Total Cost	Pak Rs. 496.56 million
Duration	5 years (July 2007-June 2012)
Executing Agency	Ministry of Environment Islamabad
Implementation Partners	Provincial governments of KP, AJK and GB
Geographic Scope	Conservancies of Swat, Dir, Chitral, Astore, Skardu and Hunza

Project summary

The overall goal of the program was "up-scaling sustainable management of natural resources, especially biodiversity from village level to valley level and ultimately to the wider landscape level of conservancy" with the following specific objectives;

- Organizing, empowering and enhancing the capacity of local communities to conserve biodiversity by imparting training, education, awareness and skill development.
- Enhancing the value of components of biodiversity for the local people using various tools including enterprise development based on enhanced marketing techniques.
- Creating enabling policy, legal, and financial framework that supports community - based conservation, training, skill and eco - development.

The project was based on the successful demonstration of the GEF/UNDP sponsored MAC project with intention to internalize the concept of the community based conservation approach in the formal government sector through a long term program.

Major Outputs

PMAC remained instrumental in extending the community based conservation approach to Neelum and Jhelum valleys in AJK, created more than 50 forestry graduates in the local communities and focused on addressing the immediate needs of communities in the NRM sector specially irrigation channels, land development and fruit orchards via cost sharing basis. The program also developed a GEF/UNDP funded project, Mountain and Market which will be launched as full scale project shortly.

The program remained very successful in the partial achievement of its objectives, however could not be continued after the devolved status of Ministry of Environment and the subsequent disagreement between the federal and provincial government for further financial assistance-thus transformation of project mode to full program could not be materialized.

2.6. Value Chain Development of Medicinal and Aromatic Plants in Khyber Pakhtunkhwa

Duration	Three years (July 2011-March 2014)
Donor Agency	USAID Entrepreneurs through MEDA
Implementing Agency	Human Development Organization, Doaba (HDOD)
Geographic Scope	Selected Union Councils of Dir upper, Swat and Shangla

Project Objectives

To increase the incomes of 12,000 MAP collectors, at least 70% of whom will be women, by at least 50% in the selected Union Councils of Dir upper, Swat and Shangla districts.

Project Summary

This three years initiative involves identification, registration and capacity building of local collectors in collection, post harvest processing and value chain development of Medicinal and Aromatic plants (MAPs) species with the intention to increase the income of communities through preferential marketing. Although the impact of the project still lies in future, it has captured the interest of local communities in the target area by increased participation.

2.7. Value Chain Development of Medicinal and Aromatic plants (NARSP), Swat

A ditto copy of the HDOD implemented project is also under implementation by National Rural Support Program in District Swat. The project is supported by the same donor with the same amount of budget and approach. However, the operational area differs from the HDOD jurisdiction.

2.8. Kalam Integrated Development Project (KIDP)

Duration	Seventeen years (July 1981—June 1998)
Donor Agency	SDC and government of Pakistan
Implementing Agency	Forestry Department, Khyber Pakhtunkhwa
Geographic Scope	Kalam, Utror, Madyan and Bahrain. KP Province

Project Summary

This was an area development project stretched over 0.3 million hectares with a human population of almost 171,000. The project concluded in four phases with the man aim to "Improve the socio economic conditions of the population in the project area through people's participation in forestry, agriculture and village development, taking in consideration the ecological, social, economic and institutional sustainability of all means in activities at all level". The project identifies various factors as exerting heavy pressure on the natural resources: increased population pressure and change from subsistence to cash crops (Potatoes), increasing number of grazing cattle.

The project operated in a relatively egalitarian context, in which each male member of the community (even babies) had a share in the benefits of the forest. However the Gujars- landless herders- are not entitled to these benefits. The project also focused on strengthening of village

organizations, channel income generation activities, developed closed interaction with service delivery departments and helped stream lines innovation in forestry, Agriculture and Human Resource Development.

2.9. Siran Forest Development Project (SFDP), KP Province

Implementing Agency	Forestry Department, KP Province
Sponsors	GTZ
Geographic Scope	Hazara Division, KP Province
Objectives	The principal objective of the project was to maintain the productive and protective function of forest in Siran valley through Joint Forest management.

Project Summary

The project was also known as the Siran Intensive forest management project. Due to the increasing pressure on Hazara forests, the KP forest department, supported by GTZ, established the Kaghan Intensive forest management project (KIFMP) in 1980. By 1991, this had become the Siran forest development project (SFDP)

SFDP is the first project to implement Joint Management of Forests (JFM) in Pakistan. Under JFM, Local people in the Neighbor hood of state-owned forest are involved in the management of those forests, and this is backed by legal rules. The forest Department shares power with the local people who are granted excess to state forest to harvest specified forest products (Fire wood, Timber, fodder and medicinal plants). Both elected male heads of the community and staff of forest department form a register JFM committee. The supreme authority at village-level in relation to JFM committee as the general assembly of the village, called the General Body.

Major output

The project established the ever first example of joint forest management where communities and government line departments agreed on roles and shouldered responsibilities for the better management of forestry resources as well socio-economic uplift of the custodian communities

2.10. Agha Khan Rural Support Program (AKRSP) Gilgit-Baltistan

Duration	(1982-today)
Geographic Coverage	Gilgit-Baltistan and Chitral)
Executing Agency	Agha Khan Development Foundation
Implementation Agency	AKRSP
Sponsor	Mostly all major donors in the country

Summary

Established in 1982, AKRSP is one of the largest NGO in Pakistan with its major operation in northern region of the country. To date AKRSP facilitated more than 15 hundred Village Organization (VOs) and almost 1,000 Women Organizations (WOs). The Broad objective of AKRSP is to " increase the capacity of local people to identify and utilize opportunities and to solve their own problems, so that they can plan and implement development programs leading to increased incomes and employment; to improve health, nutrition, education and living conditions; and to improve the sustainability and productivity of the environments "(second phase strategy paper 1987).

In aiming to secure economic, social and environmental objectives, AKRSP has always embodied a sustainable development approach. The key to AKRSPs approach is the VO- broad-based coalition of all those village residents whose common interest is best served by forming a multi-purpose development organization. The VO is the executing agency for all village-level projects sponsored by AKRSP & its calibrators.

Interestingly, though AKRSP has responded to the needs of all government line agencies in its operational areas, its work mostly does not involves components which has direct requirement of changes or development of new polices at the government end.

2.11. Malakand Social Forestry Project (MSFP), Khyber Pakhtunkhwa

Duration	Ten years (1987-1997)
Sponsors	Government of Netherland and Government of Pakistan
Executing Agency	KP Forest Department
Geographic Scope	Malakand Agency and Dir

Project summary

The project aimed to contribute to raising the standard of living in Malakand Agency and Dir by improving the productivity and use of hillsides and marginal farmlands. The development objectives were;

- To restore suitable vegetation to the denuded hills and marginal farmlands creating ecologically and economically improved living environment on sustainable basis.
- Develop extension for these field activities and stimulate institutionalization of the extension approach at local level an within Forest Department, KP

Adopting the extension approach through Village Development Committees (VDCs), the main focus of the project was on forestry driven activities. The interventions included afforestation, range management, tree improvement, women participation in forestry activities and capacity buildings.

Major Output

The main activity was developing Village Land Use Plans, which later on fed the Village Development Plans. The project had influenced the decision makers in the government to consider the social forestry as formal component in the future programs.

2.12. Sarhad Rural Support Program (SRSP)

Sponsors	ADB, NOVAI, TVO, IFAD, AUS-AID, PPAF, PHP, CIIP WFP and DFID
Geographic Scope	All districts of KP province

Program Objective

SRSP has the main objectives of developing institutional and technical models for poverty alleviation, sustainable and equitable development through raising income of the poorest of the poor and provide efficient and cost effective delivery mechanisms for the government to reach the poor rural population.

Following the AKRSP model, SRSP focuses on investing in building capital, skills and capacities at the community level for collective working development of self reliance entrepreneurs. In addition to other interventions in the social sector, SRSP also work in agriculture, forestry and

livestock sectors. SRSP is very much flexible and open to modification of activities if external support exists.

2.13. PATA Project (An Integrated Approach to Agriculture Development)

Sponsor Joint venture of KP Govt. and the Kingdom of the Netherlands
Duration Five years (1989 June 1996)

Project Summary

The project while adopting the bottom-up concept of agriculture development (the farmer should be first and foremost in planning and implementation) had the following three main programs:

- The Agricultural Development Programme (ADP) following an integrated approach of farming systems research, 'client oriented' adaptive agronomic research and agricultural extension and aiming at increase of agricultural production

- The Land and Water Use Programme (LWUP) aiming at the development and protection of land and water (both groundwater and surface water) resources for optimal agricultural use

- The Women in Development Programme (WIDP) to establish and integrate activities specially geared to address and solve the problems and constraints faced by female farmers (PATA, 1996)

The Farmers Interest Groups (FIGs) formed and motivated used to meet several times through the season acting as catalysts for the communities. Finally, the groups act as a broad-based interface with extension personnel. The major emphasis of agricultural technologies was on improving the technical efficiency (methods and timings) rather than on intensive use of external inputs.

Through FIGs, the project successfully developed many packages for sustainable agricultural development. One of the major objectives of PATA has been to help farming communities to increase their agricultural income and productivity by developing irrigation facilities (mainly ground water) in the marginal rain fed areas in Malakand Division. The project has involved at least 100 schemes (both ground water and surface irrigation) with community organizations.

Major outputs

About 2,500 ha of marginal rain fed land was converted into productive irrigated agriculture. The water development scheme of PATA has created substantial opportunities for potato growing and other vegetables in the area. Since the operational and maintenance costs of these schemes are borne by the farmers, a change towards growing cash crops to cover these costs seems essential. Hence, both spring potatoes and autumn potatoes have emerged as potentially profitable crops for the local farmers. Similarly tomato and onion emerged other cash crops of very high importance. Moreover, the cultivation of peas has become an important cash crop in the area (mainly concentrated in Swat).

SECTION3. MAJOR LESSONS LEARNED

The following lessons are extracted from various projects implanted in biodiversity conservation field mostly in the mountain valleys of northern Pakistan by Forest and Wildlife departments, AKRSP, IUCN, WWF, Wildlife Conservation Society, IFAD, UNDP and several other donor agencies. Since these lessons are sometimes reflected in more than one project, their collective gist is presented below:

3.1. Social mobilization and awareness amongst stakeholders

Conservation and sustainable management of natural resources is a concept of attitudinal changes of local communities and governments from the unmanaged exploitation of natural resources to a long-term wise use supported by enabling policies and financial frameworks. Projects and programs implemented trough a **true participatory approach** further provide opportunities for communities to discuss issues related to resource management, and to develop their own rules for managing these resources. As a result, an increased sense of ownership and the interest in benefiting from these resources encourage communities and line agencies to stop poaching, introduce controls over the fuel wood harvest and restrict grazing rights to pastures.

WWF at Gilgit-Baltistan and Chitral experienced that raising awareness for sustainable use among community groups is almost an integral part of all community-based conservation projects and programmes. However, experience has shown that policy makers and decision-making entities within the government system deserve equal attention. In fact, the latter becomes crucial when initiatives involves collaborative management of resources

KIDP, SFM and Siran Forestry projects revealed that involving community organizations in the management of the natural resource management projects is not only viable but it is the only effective way of devolving the authority for forest management

The model of supporting Village Organizations (VOs) and subsequent Conservation Committee promoted through IUCN and WWF for collective decisions and development at the gross root level has proved to be the most effective mechanism and has now replicated in various conservation and development projects and programs. It is equally important that while dealing with common resources, participation of all rights holders or a community institutions with the full authority and mandate to take decisions on common resources like pastures, wildlife, forest and water is necessary otherwise complications arise which sometimes result into permanent implementation deadlock

3.2. Use of traditional practises in Awareness programs

Targeting local community institutions, government and NGOs through well-articulated awareness programs has its proven efficacy. Experience shows that incorporating traditional local NRMs practices into environmental education programmes generally carries more weight than only using the introduced ideas, which are normally considered effective in the organizational priorities and procedures.

3.3 Spill-over effect

Spill-over effect is an interesting aspect of projects/programs implemented in the biodiversity conservation and NRM sector. Communities in the buffer zones of the projects have tried to organize themselves and established institutions to manage and use natural resources in a manner similar to the one who are already implementing the projects. A good example is the initiative in the Nagar Valley of Gilgit-Baltistan where communities collaborated and formed a

"community managed park", based on the concept advocated by IUCN with the aim to conserve, manage and using wild species almost 30 kilometres away in other valleys. Another example is repeated requests from communities in Ghizer to AKRSP, in Astore to IUCN and WWF outside of their working jurisdiction for support and technical help in managing resources by community themselves. Similar cases were found in Chitral and Skardu, where communities groups have replicated the concept of private nursery growers supported earlier by AKRSP under the NRM program.

3.4. Conflicts Resolution

Social mobilization is dynamic process requiring extensive efforts in identifying the interests of various groups, units, villages and even valleys, getting even more complex where interest dealt with user rights, especially over common resources. Conflicts easily arise when common resource like pastures, forests and benefits from the wild animals are involved. IUCN and AKRSP in northern regions experienced that it was generally better to target local community representatives and user rights groups with the express purpose of building their internal capacity in conflict resolution, rather than resolving conflicts themselves. Though a time consuming and lengthy process, it helps various communal groups understand the dynamics of resource conservation and its benefits through collaborative management.

3.5. Flexibility in organizational approach

Society for Torghar Environmental Protection (STEP) learned that community based local approaches need to be kept flexible so that they can be adopted and blended to the requirement of different situations. Similar lessons were also learnt in Gilgit-Baltistan when irrigation channels were not supported in the GEF mandate while communities in upper Hunza had a strong demand-thus after long deliberations among stakeholders, GEF modified its mandate by incorporating irrigation channels in its Pre-Investment Feasibility (PRIF) phase of biodiversity project (1995-1999). The same community of Khyber is now serving a model for the development programs of AKRSP, IUCN and several other agencies.

3.6. Empowerment

Empowering communities takes place through provision of an active role in planning and implementing conservation-oriented initiatives, making them responsible for decisions regarding managing resources at the local level. Community-based institutions become increasingly effective with provision of equal role in participatory decision-making processes together with the government system. Legal empowerment in-terms of resource use, tenure and share in the benefits through statutory arrangements make communities more responsible and vigilant due to the increased sense of ownership and subsequent benefits. District Conservation Committees and trophy legalized trophy hunting procedures may be taken as examples.

3.7. Consistency

Long-term, imbedded community-based conservation and NRM initiatives focused on building local capacity to manage resources is the only way to achieve sustainable natural resource management. WCS considers that consistency and continued efforts over a longer period has resulted into trusted partnership with 65 communities and local government

3.8. Gender:

Providing means for women to engage in planning processes, awareness building programs and providing training opportunities in NRM sectors (livestock and poultry management,

organizational record keeping, fruit processing, nursery raising, medicinal and aromatic herbs etc) have proven efficacy. However, their involvement in landscape level management like pastures and forest management remains the domain of the men. To ensure women participation in the mountain terrain requires understanding cultural norms and traditions. Sometime, direct involvement of women folk in all NRM activities leads to complication. A better way is to help community men understand the role of women in the natural resource management.

3.9. Religious Teachings

In certain remote pockets of northern regions including Dir, Astore, Skardu and Chilas the concept of resource conservation is confused and manipulated for unmanaged exploitation. The WWF education and awareness component under MACP and EC projects experienced that direct engagement of religious leaders through sermons and dedicated sessions in community gathering have a positive impact of attitudinal change towards wise utilization of natural resources.

3.10. The role of financial mechanisms in securing livelihoods

The conventional need based approach of releasing funds or responding to the demand based needs of local communities on opportunities basis proved less effective as compared to community owned endowment system for activities. Such practice has proven extremely helpful in enhancing communal ownership at the local level. A simple but effective financial mechanism has been created as conservation endowment with contribution from the projects with the explicit purpose of meeting recurrent cost of conservation like Watch and Ward, community meetings, travel, compensation for predation incidences etc, Such endowments not only keep communities alive but also attract funding support from conservation and development assistance agencies.

3.11. Eco-development

The learning from the implementation of several projects like KIDP (Swat), MACP (Gilgit-Chitral) and EC-WWF (Gilgit-Baltistan) shows that objective of conservation and NRM projects may be hard to achieve unless the immediate socio-economic and development needs of communities are addressed. These projects went through major revisions to include the ecological development components, which were out of the implementation scope earlier.

3.12. Understanding local political and social issues

Sometimes, the scope of projects/programs significantly changes after implementation starts due to ignoring the local socio-cultural and political considerations at the start. Ministry of Environment, Wildlife Department and IUCN in a joint venture at Chitral, Swat and Dir agreed that geographic boundaries fixed for project implementation in the pro doc required drastic changes once the implementation started. This particular point requires extreme care while selecting and fixing the geographic boundaries of target area for project implementation in the very beginning.

3.13. Acceptance and participation

The project natural resource management for improved livelihood in Northern Pakistan was concluded with the lessons that NRM initiatives can only be sustained in the presence of linkages between poverty and equity with economic development and sustainable management of natural resources. Addressing community needs help them realize

conservation benefits and enhance acceptance of external interventions. Involving all stakeholders in the design, planning, implementation, monitoring and evaluation of interventions, play a pivotal role in creating an environment in which communities can participate proactively in the development process and successfully implement initiatives

3.14. Policy

Participatory conservation and NRM projects have produced tremendous amount of lessons. Unfortunately, most of them are not included in the policy formulation with the exception of few generated through the Malakand Social forestry and Farm forestry projects regarding social forestry.

Over the past two decades, several initiatives targeting the management of biodiversity and natural resources have been implemented. Almost all of these initiatives have either one or the other way included at least a component on producing lessons for the government agencies to develop or revise the existing polices. Despite the efforts and consultations of the government agencies normally the policy component remains incomplete-thus the learning and practices of the projects do not feed the formal sector. Model wildlife Laws (GB and KP), wetland policy, extraction rules of medicinal and aromatic plants (GB) and trophy hunting procedures (GB) may be taken as examples. The apparent reason seems to be the late initiation of the policy review component by the project authorities and lack of commitment at the government end.

In most of the cases, the NGO sector has created an environment of bringing communities in parallel structures with the government. Thus the learning from the projects/programs remained localized and could not be included in the formal sector for multiplier effect. In many cases the author found that project implementing authorities in the NGO sector has the liberty of spending resources with limited auditory obligations and accountability. Further, majority of the project's learning feeds into new initiatives developed without representing the prioritized needs of communities and even line agencies. The government agencies sometimes have to support such project proposals due to the very facto of anticipating additional resources**.**

Analysis of government departments (forestry and Wildlife) of all provinces shows that KP province has shown comparatively more flexibility in taking proactive steps through reorganization of institutions for making them conducive for community based conservation and management. e.g. department of forest, wildlife, directorate of NTFPs, Forestry Management Centre etc

3.15. Capacity building

The PATA project learned that two key factors contribute to the success of agriculture development projects, a) the training of farmers in growing improved seed of wheat and maize, and b) the capacity building of the Agricultural Extension Department in the participatory approach to agriculture development.

SECTION 4. BEST PRACTICES

Like other provinces of the country, efforts were made in the past to ensure better management of natural wealth through several interventions, studies, pilot project and programs. Dedicated projects were launched targeting various NRM sectors including forestry, agricultures, livestock, rangelands, irrigation and non-timber forest produce by the relevant state departments (involving state contributions) with external support from various donors agencies.

With more or less similar objectives of adding to development process in the province, these initiatives contributed to the conservation of natural resources and socio-economic well being of communities. Among several, few got the attention and interest of the state agencies, NGOs and local communities due to the tested effectiveness for onward continuation through internal resources. Among these included approaches, pilot projects, practices, activities and technologies. Ideally such learning, (which may be termed as "**best practices**") shall feed the strategic framework, polices and the government formal agenda for replication at large. The following best practices are extracted from the several activities implemented through various conservation and NRM programs across the northern region.

4.1. Community Mobilization

The success of any participatory project depends on the extent that how far the implementers are able to convey, mobilize and create ownership in the target beneficiaries. Special efforts are required to help communities organize themselves and develop an unbiased mechanism for tailoring development to local needs.

Most of the projects implemented in the rural development sector in the northern Pakistan have created interest groups; Village and Women Organization (VOs and WOs) with the explicit purpose of collective work and promoting collective saving, however this model hardly works when decisions are required on common resources like pastures, forests, land and water. Thus projects with conservation objectives came out with representative bodies of people from the communities who can collectively take effective decisions regarding natural resources. The best model of social mobilization is a broad based community institution with representation from all mohalla or villages with the mandate of full decision making authority over common resources.

Name of the body:	Anything the people may decide
Representation	All rights holders representing the entire hamlet, village or catchment
Responsibility	Dialogues with all external institutions, passing resolutions, signing agreements with outside organizations, ensure sound planning and implementation of activities, nominations for capacity building, deal all financial and record keeping details, practice joint signatories, ensure participation of women in the planning a well as implementation process and resolve internal conflicts pertaining to natural resource management
Legal Status	Registered preferably in Companies Act with own bylaws. Registration in this category will help them access outside resources from tax payers and will be liable to audit as well.
Sectoral Bodies	The organization may delegate or form subsidiary sectoral committees for forest, agriculture, wildlife, water etc for timely implementation.

4.2. Awareness and Education

Several models for creating awareness and education at the local level have been exercised in various NRM projects either one or the other way. For the sake of effectiveness the following practice will serve the best as it is based on the selection of socially acceptable and culturally appropriate set of activities individually picked from several projects. The following four sectors have shown effective in raising awareness and creating a sense of ownership at the local level

School outreach	This outreach take into account the engagement of school teachers and student with set of activities including creating master trainers, establishing nature clubs, plantation campaigns, competition and regular ceremonial activities.
Religious Outreach	Engagement of religious leaders for raising awareness, through sermons, religious gatherings and interpreting sustainable use of resource as wise mechanism in the light of religious teachings.
Media Outreach	Use of electronic and print media preferably in local languages
Common Masses	Attracting the common masses through gatherings, local festivals, sports event etc

4.3. District Coordination Committees

Establishment of District Conservation Committees (DCCs) proved to be important process regarding community empowerment. Elected representatives of village/ valley communities voice issues and participate in decision making at a common forum with district level government representatives. DCCs are notified for Gilgit, Ghangche, Skardu, Diamer, Ghizer, Buner, Chitral and Swat. The TOR of DCC is as follow:

- To support the community's initiatives to conserve their natural resources;
- To strengthen the resolve of the villagers to manage the wildlife species by themselves;
- To coordinate implementation of the project with working partners
- To solicit participation of the line departments at the district level;
- To review and approve resource conservation and development plans.

Composition

District Commissioner (Chair),
Divisional Forests/ Wildlife Officer
Assistant Commissioner
Divisional Superintendent of Police
Departmental representatives like Agriculture, Livestock etc as per the requirement of the project/projects.
Elected community representative one each per village /valley

These forums are currently dormant and may need only activation as support mechanism for the project and even after.

4.4. Student Engagement Programs

This component is meant for creating in house capacities, providing livelihood support and contribution to the natural resource management sector at large.

Activities

- Student internship/volunteer program-engaging students for 3-6 months research as part of the master degree courses (volunteers in the NRM sector)
- Sponsor in-country degree courses in Forest, Wildlife, Agriculture, Botany, Zoology and Environmental Sciences from the target areas
- This also provide opportunities for students from abroad for short term research

Care is required in selection/sponsorship of students. Only local students from the project areas are the most deserving for such support. To avoid complications, securing nominations from community under a pre-determined criteria is the best way to consider.

4.5. Engagement of Research Institutions and Academia

Normally, all NRM projects establish baseline for future impact assessment. The purpose is to assess the impact of project interventions on resources and socio-economic situation of the area and communities. The remote mountains ecosystems serve as hub for unique biodiversity and scientists often come across with discoveries. Collaborations with national and international universities sometime help produce substantial knowledge, which is not only beneficial to local communities but also to the country and international scientific communities at large.

Activity

Engage International Universities, University of Swat and Pakistan Natural History Museum on co-founding mode for establishing base line of flora and fauna for future monitoring. Opportunities of identifying individual indicator species for the ecosystem health also exist.

4.6. Sustainable Financial Mechanism

Village/Valley conservation endowments (VCFs) have proven effectiveness and with the exception of few most established 15 years ago are functional as local financial mechanism for communities wherever established in northern mountain valleys. These endowments were established under PRIF phase, MACP, PMAC and WWF implemented projects.

Input

Contributions from the project and local communities at the ration of 70 to 30 percent respectively.

Methodology

Invest the fund in a fix high yielding schemes in national banks with seed money from external support and contribution from communities. The fund grows from income and savings from

NRM activities. As per the TOR of the fund, the seed money is secured while the interest is spent on the agreed activities on joint signatures of department and communities.

Purpose

Help communities pay for the conservation cost, in addition to several other activities like community meetings, travel and limited social development. NRM activities include raising nurseries, fruit orchard, irrigation channels, kitchen gardening, perusal of illegal cutting and poaching cases, seed production etc

An interesting point here is the readily available opportunity of a larger fund, the Mountain Areas Conservancy Trust Fund (MACF) currently worth around 3 million US$, which was established 15 years back in addition to several VCFs under the GEF/UNDP supported project. VCFs were supposed to be fed by MACF. The MACF under an agreed Article of Association had financial contribution from KP province. Since the original eligible areas in the fund TORs are Chitral and Swat, this is a great opportunity for KP government to take advantage of its money and support the implementation of activities in the current

4.7. Joint Forest Management (JFM)

Objective The main objectives of JFM are to ensure sustainable use of forestry resources, satisfy the current and future needs of the local communities, ensure development of biodiversity and environment and speed up economic growth through collaborative efforts of government and local communities

Methodology

- Forest demarcation and delineation
- Forest resource inventory and analysis
- Development and approval of JFM Plan
- Legal requirement (already in place in KP in the form of JFM rules under Forest Ordinance 2002)

Activities

- Identification of sites
- Signing agreement with communities
- Discussion and agreements on concessions, rights, grants and implementation of the JFM under a well articulated action plan. The action plan includes zoning of forests (protection, preservation, sustainable use, recovery, dead fallen etc)
- Regularizing grazing
- Exposure of Communities to proven practice of JFM
- Capacity building of communities

4.8. Exposure and Exchanges

The NRM projects implemented in the northern Pakistan went through a series of experiments. Among them, few were successful in adopting the effective practices through molding, remolding and fixing activities with learning from the field. Such an activity proved to be very

much promising is inter and intra community exchanges of communities in the mountain environment for cross fertilization an information sharing.

Methodology/Activities

- Identification of site, area, valley, province with the identical geography and soci-cutural environment having proven practices of NRM projects and programs
- Selection of members from communities applying clear criteria matching the requirement and objectives of the exposure
- Facilitation of discussion, meeting with officials, communities, interest groups, resource owners, users etc.
- Identification of resource persons who may be used as extension worker after basic training
- Prepare action plan with learning from the exposure for back home implementation

This practice has a proven efficacy in the northern mountain and may be considered as regular activity as part of the BK project implementation.

4.9. Resource Conservation Plans

Sustainable use warrants a simple, clear and approved plans, which not only provide a guidelines for resource use but also prescribe measures for resource conservation and timely monitoring-thus avoid degradation of resources. Several project including MACP, PMAC, NADP, WCS, WWF and Wildlife Department KP have internalized this practice due to its extreme efficacy.

These plans may vary from a single species like markhor, Ibex and oak to a broad complex range of biodiversity. MACP which is a pioneer in producing such plans have produced around 80 plans in various valleys of Gilgit-Baltistan, Chitral and Swat.

Methodology

- Resource Needs and assessment
- Identification of species, sector or particular resource
- Facilitation of planning process with communities in the village for identification of issues and devising measures to overcome
- Developing action plan
- Identification of resource person/volunteers from the communities to document the information in local language
- Incorporation of the comments from community group and line departments
- Approval of the plan from the district coordination committee

Unlike conventional practice of collecting information and developing documents for communities, the project allows communities to brain storm, develop and redevelop their own plans in local languages without the role of the implementers except technical contribution, if required. Such plans are owned and regarded in the local communities. Plans developed in projects concluded almost a decade back are still followed by communities in several valleys.

4.10. Manual for Collection and Post harvest processing of Medicinal and Aromatic Plants

Medicinal and aromatic herbs serve as major means of livelihood for people in several valleys of Swat and Chitral. In the absence of sound collection, post harvest processing and timely marketing, collectors loose considerable margin besides unsustainable harvest and providing low quality plant material to the market.

Experience has shown that collectors get maximum financial benefits if equipped with necessary training in sound collection techniques and post harvest processing, storage and efficient marketing. Several organizations like HDOD, MACP, NRSP and IPRP have contributed to this sector. However extreme care is warranted to ensure that collection does not exceeds the biological threshold level.

Methodology

- Training
- Developing of manual
- Market linkages and
- Monitoring sale

Activities

- Provide training to collectors in collection of plants (collection timings, season, parts to be collected, tools to be used, drying, storing, and marketing)
- Resource inventories of medicinal and aromatic herbs in the available habitats practicing the learning from the training
- Develop manual for medicinal and aromatic plants with detail of individual species protocols, parts, collection mechanism and onward processing techniques
- Create market linkages through exposure of the market.

4.11. Sport Hunting

Sport hunting commonly known as trophy hunting in Pakistan was initiated by local communities in northern Pakistan with support from AKRSP, WWF, and Wildlife Department, KP province. However the culture of legalized trophy hunting was introduced in MACP across Gilgit-Baltistan and Chitral, which is now replicated by several communities in the country.

Methodology

- Selection of Species
- Presence of population
- Securing harvest quota
- Joint management with wildlife department

Activities

- Nomination, selection and training of Village Wildlife Guides
- Population assessment through surveys
- Development of species management plan
- Apply for quota. In case the species is listed on CITES list, special permission is requested for relaxation provided the population has shown enough increment.
- Marketing of the allocated quota
- Facilitation of hunt
- Equitable distribution of benefits

There are however several perquisites for a community to be eligible for trophy hunting quota. This includes registered community institution, population capacity to sustain hunt, an approved species conservation plans and transparent financial mechanism supporting the conservation of the species and habitat.

4.12. Infrastructure

Addressing the immediate needs of local communities normally serve as effective as entry points in communities for trust building, ownership and further implementation of the projects. Started by AKRSP and replicated by several organizations, irrigation channel and protective walls for flood control are the most widely accepted and regarded intervention in the northern Pakistan due to the scarcity of water for irrigation and protection irrigated lands.

Methodology

- Agreement with communities on cost sharing basis
- Provision of financial support in installments
- Development/protection of communal land

Activities

- Identification of site and source
- Feasibility survey
- Provision of material
- Formulation of construction committee by the community
- Construction of channel by the communities as collective work
- Release of installment after engineer's report and
- Completion report

4.13. Enterprise Development

The remote valleys of mountains hardly allow community men and women to diversify their livelihood options. Several projects and programs have tried to promote enterprise development suiting to local environment and social conditions. Among these, few have shown proven success while further demand and interest exist at the community end.

4.13.1. Private Nurseries (both forest pants and fruits)

Objective

- Improve local income through viable enterprise development
- Devolve the functions of forestry department in raising nurseries

Methodology

- Identify Interest group and individual house holds
- Identify and verify potential site both technically and administratively
- Identify suitable species of preferred size and quantity
- Develop Agreement clearly specifying the roles and responsibilities of parties

Activities

- Growers arrange input, labor and land (input may also be provided by the project, if required)
- Project provide technical support and research facilitation for maintaining quality control
- Ensure buy back mechanism for forest plants
- Provision of mobilization advance, normally range from 25 to 30 %

- Provide market information to the growers
- Supply quality planting stock for fruit nursery
- Provide trainings

4.12.2 Women Stores

The cultural, norms and traditions sometimes act as barriers to women development across the mountain terrain. The issue is not simple to keep away women from higher education, take part in the electoral process and voice their concerns, but rather minute issues like mobility of women in the village normally not discussed and considered important in the development practitioners sometimes prove to be much disturbing to the women folk. Such an issue has been addressed in Gilgit-Baltistan with support for few development agencies. Though not directly related to the NRM sector, support for women stores to interested households in remote mountain valleys has provided ease to women communities as entrepreneurs.

Methodology

- Identify potential and interested women in the community
- Assess the feasibly of the business
- Provide grant through community institution to initiate business
- Repay certain percentage in installment to community institution after an agree time frame once the business establishes

4.13. Innovative Insurance Scheme for Depredation

Objective s Ensure protection of snow Leopard, the endangered cat and other carnivore species through compensation

Methodology

- Fund establishment with seed money from the project
- Contribution at least 30 % from communities. This may also come from the insurance of healthy livestock from the owners
- Extra income from tourism around snow leopard an its large prey; markhor and ibex
- In return, farmers provide protection to these species.
- The decision of the compensation of livestock incidences lies with community. The compensation is subjected to verification and a those incidences are not compensated where free grazing and open grazing of livestock is observed

Experience of such activities demonstrates that nature conservation is inherently tied to political and social forces and project managers and policy makers must look beyond the immediate ecological conditions when designing conservation projects.

4.14. Livestock Breed Improvement and Extension Workers

Almost every household keep Livestock in the mountain valleys, which play a vital role in the local economy. However, in the absence of veterinary services, proper awareness and several contagious diseases, a high rate of mortality occur in the remote inaccessible valleys. Several organizations like AKRSP, MACP, SRSP and livestock Department, KP province developed extension cadre through appropriate training and follow up exercises, which have created in-house capacity in certain valleys fro availability of livestock extension service to the poor farmers at the door step. The activity has also created jobs in the valleys for several individuals.

Further, the livestock breed improvement through section has helped the farmers understand the concept of healthy and productive livestock raring in the few communities. This has helped farmers avoid extra burden of feeding and grazing of less productive livestock.

Objectives

- Reduce the economic losses to farmers due to livestock diseases and increased mortalities
- Provide extension services to farmers at the door step
- Widen the job market for the locals
- Increase the livestock productivity and minimize the efforts and expenditure of framers by keeping healthy and productive livestock herds

Methodology

- Identification and nomination of potential candidates from the communities using a simple criteria, which in addition to others shall include permanent residence in the village, at least part time job willingness, secondary education and already connected to the livestock field
- Signing of agreement with the workers through communities for onward continuation of the services in the particular sector
- Training course(2-3 months) from Animal Husbandry in-Service Training Institute (AHITI)
- Provision of kits preferably on cost sharing basis

The past experience of organizations shows the all such trainees who were sent to AHAITI have turned out to be successful entrepreneur in the valleys. The same pattern may be followed for Extension Worker in Agriculture sector as well.

SECTION 5. CAPACITY BUILDING

The traditional top bottom approach of delivering service through the government and NGOs has proven less effective in addressing the problems at the grass root level. The learning based on several years of experience has helped state agencies and NGOs understand to take a radical shift from resource focused interventions towards community centered approach for local capacity building to address the problems at the local level. Organizations like KIDP and AKRSP were the pioneers in launching training programs which focused the local human resource instead of the problems itself. This experience showed great improvement in the local ownership to address development challenges themselves.

Today, capacity building is an integral part of almost every rural development and conservation project/program in the country. This mechanism of creating local cadres is very much accepted. It is cost effective and efficient in addressing the chronic problems at the gross root level.

Based on the review of the successful project in the conservation of biodiversity and other related NRM projects, a list of recommended trainings with a possible mechanism is given in the table No 2.

Table No. 2 (List of recommended trainings)

S. No	Name of the training	Target Beneficiary	Duration	Possible Options
1	Organizational management and record keeping	Local community institutions	3 days	Consultant of Financial Background (Amir Butt)
2	Participatory Learning Actions	Project staff and line departments	3 days	Consultant from the open market
3	Effective Communication and presentation Skills	Project staff, line departments	3 days	Consultant from the open market
4	Participatory Conservation Planning Process	Project staff and line departments	3 days	Consultant (Marc Aljoscha Gloekle)
5	Application of SRC/GIS Techniques for Environmental Management	Project staff and line department	5 day	SUPARCO, Islamabad
6	Community Based Natural Resource Management	Project staff and Line department	5 days	IUCN
7	Technical Writing Skills	Project staff and line departments	3 days	Consultant from the open market
8	Fruit Nursery Raising	Communities and field staff of Agriculture depart.	3 days	Agriculture department
9	Forest Nursery Raising	Local Communities	3 days	Forestry department
10	Land Use Planning	Local communities	3 days	IUCN
11	Planting Techniques and Soil Conservation Techniques	Local Communities	3days	IUCN

12	Teacher Training (TOT)	School teachers	3 days	Consultant (Najmul Huda)
13	Livestock Extension Workers	Local Communities	2-3 months	AHAITI, Peshawar
14	Fish Farming	Local Communities	3 days	Consultant Khalid
15	Value Chain Development of Medicinal and Aromatic Plants (MAPs)	MAP collectors from communities	3 days	Consultant Hasan Dr. Sher, Faiz Ali
16	Village Wildlife Guide Training	Communities and field staff of Wildlife Department	3 days	Consultant Faiz Ali, Ashiq Ahmed Khan
17	Survey Techniques of Big Game species with field survey	Communities and field staff of Wildlife Department	One week	Consultant Faiz Ali and Abdul Ghafoor
18	Community based entrepreneurs development	Local Communities	5 days	Consultant Shanaz Kapadia (ECI)
19	Conflict Resolution	Local communities	3 days	Consultant open market
20	Gender Sensitization	Local communities	3days	Consultant open market
21	Off season Vegetable Growing	Local Communities	3dyas	Agriculture department
23	Biomass data analysis techniques	Project staff, communities and line department staff	One week	Consultant Dr. Faizul Bari

SECTION 6. CONTACT DETAIL OF NRM PROFESSIONALS

Table No. 3

Mr. Ali Hassan Habib, Director General, WWF- Pakistan, World Wildlife Fund for Nature-Pakistan, Ferozepur Road Lahore. Mr. Abdul Munaf Qaimkhwani, DIG, F-II, M/O Climate Change, G-5/2 Islamabad Cell: 0321-5259339 Naeem Ashraf Raja Director Biodiversity M/o Climate Change 051-9245596 Mr. Mubarik ali Shah Chief Conservator Wildlife, Shami Road, Peshawar, Khyber Pakhtunkhwa Ph # 091-921149 Chief Conservator of Forests Vai Mr Habibullah Kakar, Secretary Forests, Quetta. Tel: 081-2471437-9 Mr. Abul Wahab Director, Zoological Survey Department Pakistan, 03009076807 Mr. Tahir Rasheed, National Project Manager, Sustainable Use Specialist Group CAsia Quetta tahir_rasheed20@yahoo.com Dr. Ijaz Ahmed, WWF Pakistan, House # 60, Bazar Raod, G-6/4, Islamabad Tel # 051-2602431-3	Faiz Ali Khan Ex-National Director Program for Mountain Areas Conservation 03225001230, 03129715900 Dr. Fauzia Rehman Consultant & Coordinator, Innovation Technology, PARC 20, Attaturk Avenue, Sector G-5/1, Islamabad 051-9201239 Hamid Marwat Chief Environment Planning Commission, Planning & Development Division, Islamabad. 03005248655 Mr. Abdul Latif Rao, Chairman, Rao Sustainable Development Consulting & Service (SMS-Pvt) Ltd. House # 91-A, Street No 18, F-11/2 , Islamabad Ph # 051-2211966 Dr. Faizul Bari Emergency Coordinator Food & Agriculture Organization House # 192, St # 98- I-8/4, Islamabad.Ph # 051 4443589, Dr. Hakeem Adul Hannan, Hamdard University, Madina al Hikmat, Muhammad Bin Qasim Avenue, Karachi. Tel: 021-364 40078, Fax: 021-364 40079 Mr. Richard Garstang, National Programme Manger, Pakistan Wetland Programme, H.No.3, Street No.4, F-7/3,islamabd Tel: 051-261 0880-5

Mohammad Mumtaz Malik Ex-Chief Conservator Wildlife KPK Peshawar Mr. Iqmail Hussain Shah Ex-Regional Project Director PMAC Peshawar, KPK 03459849671 Mr. Yousaf Qureshi, Ex-Regional Project Director, PMAC Near Water Supply, Upper Chatter Muzaffarabad, AJK. Mr. Nazir Khan Chief Conservator Forests Peshawar Khyber Pakhtunkhwa Dr. Zabita Khan Shanwari, Professor, Biological Sciences Department, Quaid e Azam University, Islamabad Mr. Abdul Ghafoor Divisional Forest Officer Wildlife Swat, Khyber Pakhtunkhwa Ph # 0946-9240248 Mr. Raja Khizer Hayat Chief Conservator (Forest) Muzaffarabad, AJK Ph # 05822-920713 Mr. Muhammad Ibrahim Head WWF-Pakistan, University Town, Peshawar. 03425196235 Mr. Sherazullah Baig, Programme Manager, CHESVI, Near Danial House, Skardun,Tel: 058154-51528 Cell No. 0300-3955118, 0321-5311311	Ms.Arjumand Nizami, Programme Coordinator, Swiss Foundation for Development (IC) H.No. 60, St No.9, G-3, Phase: 2, Hayatabad Peshawar Tel. 091-5830416 Syed Mehmood Nasir, Inspector General of Forests M/O climate Change,Islamabad 051-9244489 Mr. Khalid Hussain, Inter-cooperation, H.No.60, St No.9, G-3, Phase II, Hayatabad, Peshawar,Tel:091-583 0416 Mr Umeed Khalid, NCCW, Building No. 14 D, F-8 Markaz, M/O Environment, Islamabad. Tel: 051-9262270 Mr. Ashiq Ahmed Khan, NRM Expert, Peshawar, Khyber Pakhtunkhwah Cell: 0321-5932456 ashiqahmad@gmail.com Director General, National Agriculture Research Center Islamabad. Fax # 051-9255034 Mr. Safdar Ali Shah, Conservator Wildlife, Shami Road Khyber Pakhtunkhwa Ms. Shahnaz Kapadia Rahat Chief Executive Officer Empowerment through Creative Integration Plot # 11-13, Raja Iftikhar Sabri Street Bhara Kaho, Islamabad, Ph # 051-2230895

Rahimullah Chairman Conservation Management Committee Garam Cheshma, Chitral Khyber Pakhtunkhwah Mr. Iqbal Ahmed Qarshi, Chairman, Qarshi Industries, Jam-e-Shirin Boulevard, 15-G, Gulberg-III, Lahore. Ph # 042- 111 200 300, Mr. Ayaz,Khan Site Manager Sub-divisional Forest officer Wildlife Nowshera KPK Wildlife Deptt, Mardan 03439546635 Dr. Ghulam Akbar Senior Director, WWF-Pakistan House No. Street G-11, Islamabad Tel: ++92-51-8098025 Email. gakbar@wwf.org.pk Tahir Rasheed CEO, SUSG-CAsia **tahir_rasheed20@yahoo.com** Cell# 00923337901885 Shah Zaman Project Manger Khwaja Abad, Mingora Swat Tel: ++92-946710527 E. mail: shahzaman.nrsp.kpk@gmail.com Mian Ajmal Shah Project Manager, Al-farooq Manzil, Near Al-noor Medical Center Mingora Swat Tel: ++92-946-724383 e-mail: ajmalshahmian@yahoo.com	Mr. Inamullah Khan, Technical Expert/Head IUCN-P Sarhad Office H No: 21, Street No.88, Tel: 051-227 1027-34 Fax:051-227 1017 Mr. Mehmood Akhtar Cheema, Country Representative IUCN-P H No: 21, Street No.88, G-6/3, Islamabad Tel: 051-227 1027-34 Fax:051-227 1017 Dr. Hasan Sher, University of Swat Cell: 03028040198 Mr. Masood Mir, Enterprise Section, AKRSP, Gilgit, Gilgit-Baltistan Ms. Shandana Khan, Chief Executive, RSPN, Islamabad Syed Badsha Bukhari Director General, PFI, Peshawar 03335269211 Raja Attaullah, Senior Expert NRM, Islamabad 03465419183 Peter Zhaler Deputy Director, Asia conservation Program Wildlife Conservation Society 2300 Southern Boulevard, Bronx NY 19460 E-mail: pzahler@wcs.org Dr. Bashir Ahmed Wani, Expert NRM/ Ex. IGF Islamabad, Cell: 03235566521

SECTION 7. RECOMMENDATIONS

These recommendations are proposed on the basis of the current review of the selected projects and the knowledge and institutional memory of the author's own experience in the field of biodiversity conservation in northern regions of the country

7.1. Channelizing government's own resources

Several initiatives were implemented in the past through collaborative efforts of government, donor agencies, implementing partners and local communities. In majority of the cases, a common component of such initiative lacked the co-funding of the government institutions, which to a great extent, lead to poor ownership at the government end. Further, the future continuation and sustainability remains a question mark as the relevant government agencies hardly take responsibility or considered to be accountable.

The reason is simple that government staff gets over burden with the donor project activities in addition to their routine plans and no reward for the extra work. In few cases, a win-win situation is witnessed just because of the government ownership due to its own investment-thus making the government staff accountable for timely implementation and sometime further continuation. To ensure that the BK project in regarded as essential ingredient in the conservation and sustainable use agenda of the government, the planning and development department of KP province may be requested for investment through the set pattern of PC-I. Keeping the integrated nature of BK project in view, resources for individual PC-Is for Agriculture, Forest, Wildlife and Livestock departments may be allocated in the current financial year.

7.2. Technical Support and Authenticity of Data.

Projects are time bound activities with set targets to be achieved. In business as usual, project mangers engage consultants from the open market for conduction technical studies and assessments. While this arrangement has a positive aspect of getting the job done within the agreed time lines, sometimes the authenticity of the data remains a question mark, especially when consultancies involve natural resources. In majority of the cases, information generated through the sole efforts of individual consultant is hardly owned and regarded in the government departments. It is thus proposed that either representative of the relevant government department may be engaged as counterpart or the reports produced may be verified through the government channel.

7.3. Nomenclature

The conservation work of forest wildlife departments is broadly divided in two categories; resource conservation in a range of government managed protected areas and activities in natural habitats outside protected areas. While protected areas are managed under a clear guideline (in some cases management plans), the later require suitable designation to be declared. In order to manage the natural habitat outside protected areas, it is proposed that

such areas may be governed by management plans that pay adequate attention to the conservation of biodiversity. One idea might be the "conservancy" introduced by the IUCN and Wildlife department, KP for replication. A conservancy is an area, where various communities use right groups agree on providing share to each other in the resource use within the limits of broader legal jurisdiction prescribed by the government for resource use.

7.4. Outsourcing of component

Few organizations engaged in the natural resource management have established roots in the northern mountain valleys of the country. Components like review of legislation, formulation of rules and other legal documents is a time consuming job for time bund projects. While organizations like IUCN and WWF have built a strong working relationship and have the required capacity, it is sometime better to engage such organizations for conducting review of legal component as sub-contractors on mutually agreed output base.

7.5. Selection of Pilot Sites in Chitral

Selecting of new pilot sites requires set criteria broadly including technical, social and administrative parameters. The author learned that Chitral has already been chosen as pilot district in addition to Swat. Within Chitral, Yarkon valley with its high biodiversity richness would have been ideal, however its remote location hardly permits the project to continue activities round the year.

Chitral has many biodiversity potential sites in its surrounding valleys. These including big game species like markhor and ibex, 30 % of the country snow leopard habitat, game birds grounds, alpine wetlands, rich pastures, medicinal and aromatic plants, glaciers, mountain peaks, birch patches, hot springs, Kalash and Khow cultures in addition to the designated national parks and game reserves. Broadly, the valleys in Chitral are grouped as:

S. No	Sites/Areas	Valleys	Direction	H.H
1	**Kalash**	Bamburat, Ramboor, Berir	South west of Chitral	1,062
2	**Garam Chashma**	Eight valleys including Gobor, Begusht, Munoor, Murdan, Mough-Ovirk, Karimabad, Arkari, Shoghoor	North west of proper Chitral	3,000
3	**Laspur**	Bashqar Gol, Rezhun Gol, Shandur, Langar, Ghotbar Gol	North east	1,300
4	**Torkhow**	Zewar Gol, Ujnu Gol, Terich Gol, Khow Gol, Rech Gol	North of Chitral	2,300
5	**Koh**	Golain Gol, Koghuzi Gol, Reshun Gol, Barnus Gol	North of Chitral	2,200

In-terms of biodiversity richness, Laspur valley in laspur and Gaboor and Arkari in Garam Chashma are ideal potential candidate pilot site. However, a chronic conflict between Wildlife Department and local communities exit in Laspur over grazing. The case of one valley is in the court of law.

In view of the above, it is proposed that BK project may pick both Gaboor and Arkari or at least Gaboor in Garam Chashma. Communities in both the sites have high degree of willingness however Gaboor has comparatively rich biodiversity resources.

On the other hand, the southern valleys (Bamburat, Ramboor, Berir) provide opportunities of unique culture preservation in addition to the medium level of biodiversity resources. It will be wise to pick at least one valley from the three, probably Ramboor.

Literature reviewed

Ahmed. J, Chaudhry. G., Zia. S., Masood., Iftikhar.U and Khan. A country Case study report" Personalizing Development Policies, Processes and Institutions for Sustainable Rural Livelihoods"

Ahmed, J. and Mahmood, F. 1998. *Changing perspective on Forest Policy, policy that works for forests and people*,

Ahmed. A 212. Assessment of Capacity needs in areas of in-situ and ex-situ conservation in the context of CBD and BAP with particular focus on meeting global biodiversity targets, a report prepared for IUCN-Pakistan

Ahmed. A 1997. Community Based Natural Resource management in northern Pakistan

Forestry in NWFP. 1995. Social Forestry Project, Malakand/Dir, Department of Forestry, Fisheries, and Wildlife, Government of NWFP, Peshawar

IUCN Pakistan. 2004. *Replicable NRM practices, the northern Pakistan Experiences*

IUCN-Pakistan 1999. *The mountain Areas Conservancy Project document*

Hanum P. 2003 .*Mid Term Evaluation of the GEF/UNDP funded Mountain Areas Conservancy project* Terminal Report MACP-IUCN

NCS.1992. *The Pakistan National Conservation Strategy*, Government of Pakistan and IUCN Karachi

Government of NWFP and IUCN. 1996. *Sarhad provincial Conservation Strategy.* IUCN-Pakistan

Hussain Shafqat. 2009. PSL Snow leopard Insurance Scheme, technical report (unpublished

Ali F. 1996-2005. Conservation plans of mountain valleys in Gigit-Baltistan

Ali. F. 2012. Collection and post harvest processing of medicinal and aromatic plants, training report prepared for IUCN Training report

Report 2012. Final Evaluation Report of Wetland Project WWF-Pakistan

Project document 2007. Pakistan Wetland Program, World Wide fund for Nature Pakistan

Fischer.K, Khan. H., Gandapur.K, Rao. L., Zarif.M.R. and Marwat.H. 2010. Study on timber harvesting ban in NWFP, Pakistan, SDC.

I**NRMP. 2011.** A Village planning Manual, Khyber Pakhtunkhwa, Forest Department

Gloekler. A. M and Ali. F. 1997. Participatory Conservation Planning Process, prepared for Mountain Areas Conservancy project

UNDP. August 2002. Man, Mountain and the Markhor, A Case Study of the Torghar Biodiversity Conservation Project of the society for Torghar Environmental Protection, Mountain of Qila Saifullah, Baluchistan

Ali Shoukat, 2003. Prospects and implications of collaborative management of protected forests in northern Areas of Pakistan

IUCN 2007. Natural Resource Management for Improved Livelihoods in Northern Pakistan

IUCN 27. Pakistan Protected Areas System plan and review

Government of Pakistan 2009. Pakistan Fourth National Report, Ministry of Environment Islamabad