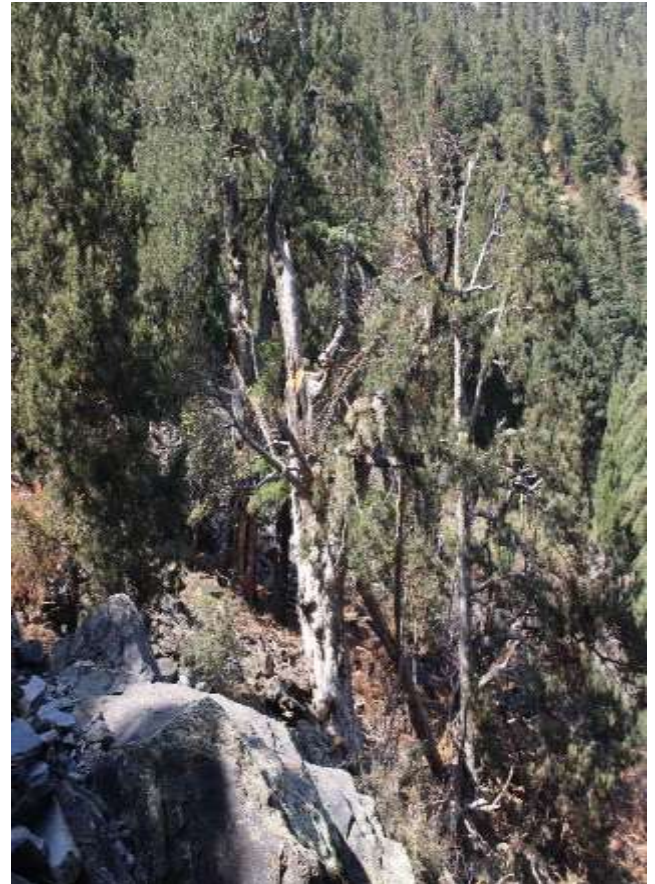




IMPACT REPORT ON

IN-SITU CONSERVATION AREA FOR NTFP SPECIES ESPACIALLY CHALGHOZA FOREST IN KALASH VALLEY BUMBURATE-CHITRAL



UNDER PROJECT TITLED

“MAPPING, DIGITIZATION, VALUE ADDITION AND MARKETTING OF NTFP IN
COLLABORATION WITH NTFP DIRECTORATE”

FOR YEAR 2019-2023

DIRECTORIRATE OF NON-TIMBER FOREST PRODUCTS
KHYBERPUKHTUNKHAW FOREST DEPARTMENT

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1 BACKGROUND

The mandate of Directorate of Non-Timber Forest Products Khyber Pukhtunkhwa Forest Department is Promotion, Development, Conservation and Management of Non-Timber forest Products in the province. Major responsibilities of this Directorate include formulation and implementation of innovative and effective initiatives for sustainable utilization and management of Non-timber forest products and provision technical guidance and inputs to managerial staffs in related projects and programs mandated for conservation and sustainable utilization of NTFP resources. Livelihood improvement and participation of local forest dwellers, inhabitants are also considered by the directorate as part of its function which helps in appropriate execution of policies under participatory approach with benefiting the forest dependent communities. The directorate is authorized for conservation of ecologically and economically significance non timber forest products facing the threats of vulnerability and labeled as endangered. NTFPs being an important source of income generation for the local people, and for a long term and sustainable harvesting of these Non timber forest Products it was necessary to put forward the conservation techniques to make conservation of Non timber forest Products.

The Directorate of NTFPs under project titled “Mapping, Digitization, Value Addition and Marketing of NTFP in Collaboration with NTFP Directorate” has commissioned In-Situ/Ex-Situ Conservation of NTFP species in Bamburate Chitral

1.1 Introduction:

Non Timber Forest Products (NTFPs) are one of the important natural resources of the Hindukush Region Chitral where majority of people depends on them as a source of food, fodder, medicine, condiment, dye, and other useful materials. Rural communities are highly dependent on a range of NTFPs for their subsistence needs which contribute up to 50% of their total annual family income. Sustainable management of NTFPs requires precise scientific information which ultimately augments responsible management as well as responsible business practices, and more importantly enhance customary rights of local people and local communities through increasing knowledge base existed. Unfortunately, lacking scientific information of majority of the NTFPs is a ground reality, and those available are not accessible to needy entrepreneurs and general people as well.

In Bamburate valley Chalghoza pine is one of the most valuable tree species of Chitral. Pine nuts are the main Non-Timber Forest Product yielded from these trees. The income generated from the sale of pine nuts and other ecological services provided by chalghoza forests contribute to local communities’ livelihoods in the Chitral. Overharvesting of cones in combination with livestock grazing and fuelwood collection has resulted in chalghoza forest degradation in Chitral. Severe cone collection has led to poor natural regeneration of chalghoza pine in many forest stands. The long-term effects of overharvesting are that trees in chalghoza stands are on average getting older and that new cohort recruitment is poor. Therefore, the forest health is not in good condition. Most local communities understand that chalghoza forests are becoming degraded, however they have very little knowledge on how to mitigate these negative trends in forest

health. Over exploitation of pine nuts and mismanagement of chalghoza stands have brought the species to a “near threatened” status according to the International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species.

The Directorate of Non-Timber Forest Products Khyber Pukhtunkhaw Forest Department selected the most degraded chalghoza stand in Kalash Valley Bumburate in order to protect and boost natural regeneration of chalghoza forest in particular and other species in general in 2019 and the area was then extended in 2020 and 2022 under project titled “Mapping, Digitization, Value Addition and Marketing of NTFP in Collaboration with NTFP Directorate

1.2 Objectives of the Report

The main objectives of the Report are as below.

- ☑ The main objective of the report was to highlight the progress/success made under the in-situ conservation of NTFP species especially of chalghoza stand in Kalash Valley Bumburate, Chitral.

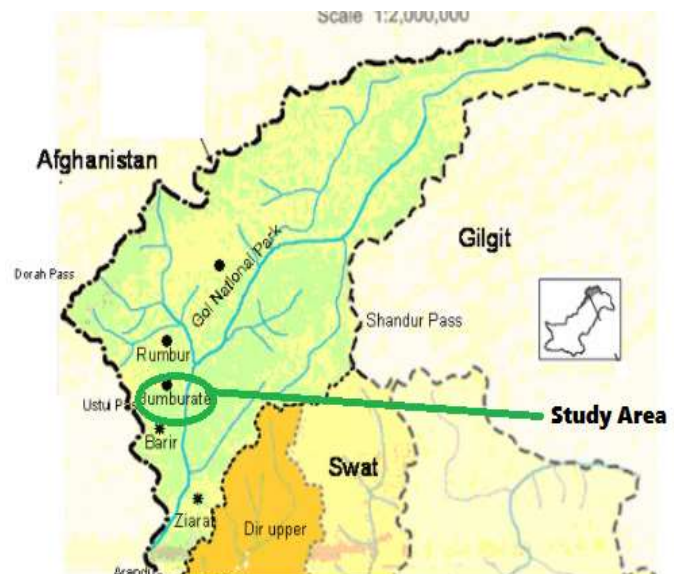
2 IN-SITU CONSERVATION AREA

2.1 Location

The in-situ conservation area of NTFP species is located in Kalash Valley Bumburate which fall in Chitral Forest Sub Division in Forest block Bumburate. The geographic coordinate’s s of the area is N 35.708769 and 71.707447 E.

2.2 Brief of the Area

The Chalghoza Forest stand selected and identified for the in-situ conservation of NTFP/Chalghoza Forest is located in kalash valley. Natural regeneration of NTFP species and chalghoza pine occurs by dispersal of seeds released from cones. This forest stands of chalghoza pine are usually opened canopy and are mostly uneven-aged. Tree density in this stand is affected by various environmental factors as well by anthropogenic activities. As per our assessment chalghoza tree density in this stand fall an average 30 trees/ha.



2.3 Establishment of In-Situ Conservation Area

In year 2019, before going to established conservation area, this area found more feasible and decided to conserve one acre with the erecting of wooden pole and fenced in order to restrict the movement of livestock and any other outsiders inside to this area for the protection of the NTFP species and chalthoza forest and associated species. A meeting with the local communities was also conducted for not grazing in the area etc and to take their support for the conservation of the area. In this connection one person Mr. Maqsood khan has been nominated for watching ward of this area.



3 IMPACTS OF IN-SITU CONSERVATION BEFORE AND AFTER CONSERVATION

CONSERVENCY	AREA BEFORE CONSERVATION	AREA AFTER CONSERVATION			
	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Natural Regeneration of Chalghoza	Nil or say 0.5 %	2%	3%	10%	25%
Natural Regeneration of available Medicinal plants	1%	3%	8%	20%	30%
Black Zeera and Ephedra	Nil or say 0.5 %	1%	5%	23%	35%
Mushroom in season	Nil	Nil	2%	8%	20%
Wildlife	Nil	Nil	2%	5%	10%
Control of Chalghoza cutting	Nil	10%	50%	100%	100%
Control of Fuelwood cutting	Nil	NIL	100%	100%	100%
Wild vegetable	Nil	Nil	2%	8%	15%
Soil conservation	Nil	Nil	10%	10%	20%
Line seed sowing and broadcasting of MAPs	Nil	20%	5%	10%	10%
Mass awareness	Nil	10%	50%	50%	50%

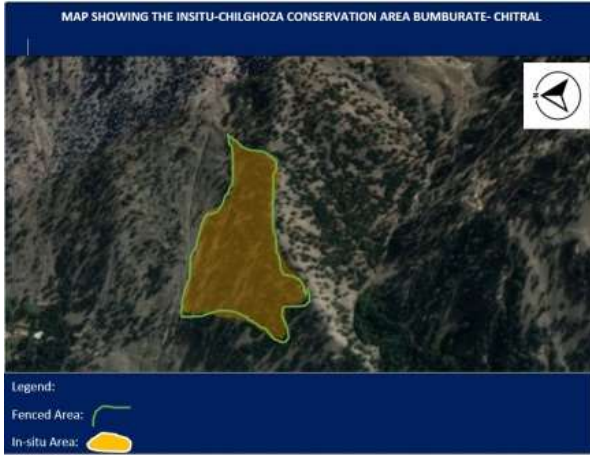
Result of line seed sowing of MAPs and Chalghoza with broad casting was not satisfactory due to shortage of water.

3.1 Status of Natural Regeneration after Conservation

After one year of one acre in-situ conservation through proper fencing with watching ward with addition of social fencing in conservation area, the natural regeneration of chalthoza pine remained remarkable along with others medicinal plants. Different classes of natural regeneration-from un-established to establish natural regeneration was recorded from this stand. An average 500 seedlings of chalthoza per unit area and un-countable seedling of MAPs were recorded from this forest which is a great success. Additionally this anthropogenic control over chalthoza pine nut collection from the in-situ conservation area will be provided seeds for next year regenerations.



Due to the remarkable result the area was extended for another one and half acre in 2020 and two acre further in 2022.



3.2 Status of other NTFPs

Conservation status of some MAPS

S.No	Species	MAPs Status after conservation		
		Stable	Depleting	Increasing
1.	<i>Artimisia parviflora</i>			↑
2.	<i>Capris spinosa</i>			↑
3.	<i>Ocimum sanctum</i>			↑
4.	<i>Anthemis cotula</i>			↑
5.	<i>Ephedra intermedia</i>	→		
6.	<i>Bunium persicum</i>			↑
7.	<i>Sophora molies</i>			↑

8.	<i>Daphne mucronata</i>			↑
9	<i>Paeonia emodi</i>		↓	
10	<i>Plantago major</i>	→		
11	<i>Rheum spiciforme</i>	→		
12	<i>Rumex hastatus</i>			↑
13	<i>Astragalus psilocentros</i>	→		

The Medicinal plants and seed collected from this area was contributing in the sowing and broadcasting of the same extended area of conservation. This in-situ conservation area provides an ideal habitat for many important species like *Capris spinosa*, *Ocimum sanctum*, *Anthemis cotula*, *Ephedra intermedia*, *Bunium persicum*, *Sophora molies* etc. The population of the important wild berry, *Daphne mucronata* has also increased.

Seed bank of MAPs species

S.NO	Species	Seed collected	Sowing and Broadcasting	Seed collected	Sowing and Broadcasting	Seed bank
		2020-2021	2022-2021	2021-2022	2021-2022	2022-23
1	<i>Artemisia parviflora</i>	500 gm	500 gm	800 gm	400 gm	400 gm
2	<i>Capris spinosa</i>	2 kg pods	2 kg pods	5 kg pods	3 kg pods	2 kg pods
3	<i>Ocimum sanctum</i>	300 gm	300 gm	500 gm	300 gm	200 gm
4	<i>Anthemis cotula</i>	400 gm	400 gm	400 gm	400 gm	Nil
5	<i>Ephedra intermedia</i>	300 gm	300 gm	500 gm	400 gm	100 gm
6	<i>Bunium persicum</i>	200 gm	200 gm	800 gm	500 gm	300 gm
7	<i>Sophora molies</i>	100 plants	100 plants	200 plants	200 plants	Nil
8	<i>Daphne mucronata</i>	Nil	Nil	200 gm	200 gm	Nil
9	<i>Paeonia emodi</i>	Nil	Nil	Nil	Nil	Nil
10	<i>Plantago major</i>	100 plants	100 plants	400 plants	400 plants	Nil

11	<i>Rheum spiciforme</i>	Nil	Nil	Nil	Nil	Nil
12	<i>Rumex hastatus</i>	500 gm	500 gm	800 gm	500 gm	300 gm
13	<i>Astragalus spp</i>	Nil	Nil	Nil	Nil	Nil



It's also reported that different kind of mushroom are also grown in the area during the season.

Line seed sowing of chalthoza, capris, white and black zeera and saphora spp and some broadcasting were also carried out but due to shortage of water result was not good but natural regeneration is satisfactory.

3.3 Improvement of soil

The conservation area is located in vulnerable slope where soil erosion and rock fall was of the major issues, Due to conservation and less disturbance in the area the soil erosion has also limited and soil are now become stable due to growing of ground vegetation's.

3.4 Control of fuel wood collection and cutting

From the day of declaring this area as conservation area, all kinds of fuel wood collection, grazing and cutting of trees, even shrubs are completely banned and the result has supported in the greenery of the area. For public mass awareness small boards have been fixed on trees and wooden pole which provides information about different medicinal plants and chalthoza.

3.5 Improvement in wildlife and birds species

By giving proper conservation and fewer disturbances in the area, wildlife species like fox, wolf, Jackal and chukar has increased.

4 RECOMMENDATION & SUGGESTION

1. Sowing of chalgoza with earth ball technique need to be done in the most degraded sites.
2. One number water pond cemented needed for watering to line sowing.
3. Replication of this type model to other valley too in order to get the desire results of regeneration over landscape level.

5 COORDINATES OF IN-SITU CONSERVATION

X= 3078490

Y= 1275402

X= 3078500

Y= 1275391

X= 3078459

Y= 1275358

X= 3078444

Y= 1275394

X= 3078503

Y= 1275391