MicroPlan

Bio-DiversitySubCommitteeSUMLINGVILLAGE

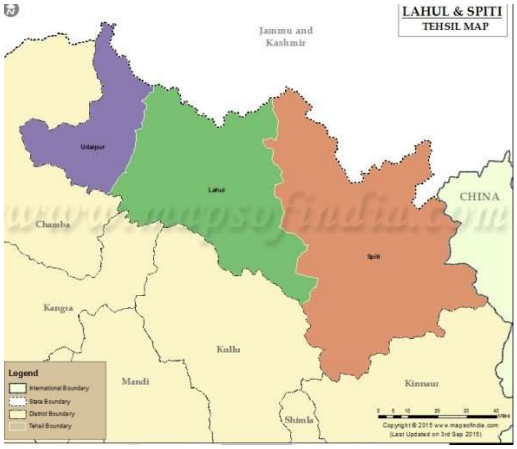
ProjectforImprovementofHimachalPradeshForestEcosystemsManagement and Livelihoods

GramPanchayat	Khurik
B M C	Khurik
BMC SubCommittee	Sumling
ForestBeat	Kaza
Forest Block	Kaza
Forest Range	WildLifeRange,Kaza
ForestDivision	WildLife DivisionSpiti
Forest Circle	Kaza

H+

IMACHALPRADESHFORESTDEPARTMENT


HIMACHAL PRDESH
2001


LAHUL & SPITI
TEHSIL MAP
Jammu and Kashmir
Udaipur
Lahul
Spiti
CHINA
Chamba
Kangra
Kulhu
Mandi
Kinnaur
Shimla
Legend
International Boundary
State Boundary
District Boundary
Tehsil Boundary

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Abbreviations& Acronyms	
ADMU	Assistant DivisionalManagement Unit
ANR	AssistedNaturalRegeneration
BO	BlockOfficer
CBMP	CommunityBasedBiodiversityManagementPlan
EC	Executive Committee
CD&LIP	CommunityDevelopment & LivelihoodImprovementPlan
CIG	CommonInterest Group
DMU	Divisional ManagementUnit
SMS	SubjectMatter Specialist
FCCU	ForestCircleCoordinationunit
Fgd	Forest Guard
FTU	FieldTechnicalUnit
GIS	Geographic InformationSystem
FD	ForestDepartment
GOHP	Government ofHimachalPradesh
GP	GramPanchayat
Ha.	Hectare
HHs	Households
HP	Himachal Pradesh
HPFD	Himachal PradeshForestDepartment
IFMS	IntegratedForestManagement System
IGA	IncomeGenerationActivities
INR	IndianRupees
JICA	JapanInternational CooperationAgency
MIS	Management InformationSystem
MM	MahilaMandal
NR	NaturalRegeneration
NTFP	Non-TimberForestProduce
O&M	OperationandMaintenance
PFM	ParticipatoryForestManagement

PIHPFEM&L	ProjectforImprovementofHimachalPradeshForestEcosystems Management& Livelihoods
PMC	ProjectManagement Consultant
PMU	ProjectManagement Unit
PRA	ParticipatoryRuralAppraisal
RRA	Rapid RuralAppraisal
RO	RangeOfficer
SHG	SelfHelp Group
SWC	SoilWaterConservation
TOT	Training ofTrainers
BMC	BiodiversityManagementCommittee
YM	YuvakMandal
WHS	Water HarvestingStructure

1. Introduction

1.1 ProjectObjectives

Theobjectiveofthe"HimachalPradeshForestEcosystemsManagementandLivelihoodsImprovement Project"(HPFESMLIP) is to manage and enhance forest area ecosystem in the projectarea,bysustainableforestecosystemmanagement,biodiversityconservation,livelihoodsimprovementsupportandstrengtheninginstitutionalcapacity,therebycontributingtoenvironment conservation and sustainable, socio economic development in the project area in thestateof HimachalPradesh.

1.2 ProjectApproachand Strategies

The project aims to sustainably manage and enhance the ecosystems of the forests in the projectareaby project interventionsunder fourcomponents in correspondence with theproject outputsasbelow.Eachcomponenthasthepreparatoryphase,implementation and phaseout phases.
Output 1: Sustainable Forest Ecosystem
Management,Output 2:BiodiversityConservationand
Output 3: Livelihoods Improvement Support are supported
byOutput 4:Institutional CapacityStrengthening

The basic approachestobe followedunder theprojectto achievetheprojectobjectivesinclude;

Empowering forest-fringe communities, particularly women, through sustainable livelihoods andensuringpositiveinvolvementof ruralpeopleinmanagingtheirown environment.
StrengtheningcommunityinstitutionssuchasVillageForestDevelopmentSociety(VFDS)andBiodiversity ManagementCommittees (BMCs)/subcommittees.
Alleviatingpovertyofthe rural poorthrough incomegeneratinginterventions.
Planning and implementing site specific technical and scientific forestry interventions, including soilandmoistureconservation,restockingofdegradationareasthroughappropriateSilvi-culturaloperations utilization of the inherent potential of available root stock, under planting with suitablespecies, blockplantations in blankpatches.
Promoting inter-sectoralconvergence (ISC).

InterventionstobeplannedandimplementedbyVFDS/JFMCsandBiodiversityManagementCommittee/ subcommittees (Micro planning).

CapacityDevelopment ofHimachalPradeshForest DepartmentandVFDS/JFMCs.

Promoting forest-based and non-forest based enterprises (such as the value addition and marketingof medicinal & aromatic plants, etc.) to generate sustainable employment, develop industries andenhancethe value of forests.

Caring for the socially disadvantaged groups in the society, such as scheduled castes, ScheduledTribes, forest dwellers, women and other vulnerable people through proper safeguard measures asper theJICA guidelinesandapplicable Indianlawsand regulations.

InstitutioncapacitystrengtheningofForest department anditspersonnel.

1.3 Modeof Operation

TheidentifiedareasshallbedividedintoParticipatoryForestManagement(PFM)ModeandDepartmental Mode.Incaseidentifiedpotentialinterventionsareasareawayfromcommunitiesbut interventions are required for the purpose of the Project and the PFM institutes (VFDS/BMCsub-committee) showing their unwillingness to work in these areas, such interventions are to beconducted in the departmental mode. However, PFM mode shall be selected where applicable fromthe viewpointof sustainability. The major activities to be implemented under differentmodesincludeasbelow.

PFMMode

DrainageLine Treatment includingex-situ Soil&Water Conservation(SWC)work

Densification of moderately dense forests by Plantation of multi-purpose trees in degraded forestsso as to convert open forests into moderately dense forests and moderately dense forests to denseforests; gapplantations should bepreferredto bemoreeffectiveon largerareas.

Afforestation/ Improvement of Open/ Scrub

ForestRehabilitationofForestAreas Infested withInvasive

Species

Improvement of Pastures/ Grasslands (including in-situ SWC

works)ForestFireProtection

ForestryInterventionatOutsideofForestArea

Departmental Mode

Improvement of Forest Boundary Management at Project Intervention AreasImprovement of Nurseries
Seedling Production
Non-PFM Drainage Line Treatment (ex-situ SWC work: including treatableSurfaceerosionControl)
Secondary Silvi-cultural Operations for Improvement of Existing ForestsImprovement/DensificationofModeratelyDenseForestAfforestation/ImprovementofOpen/ScrubForest
Improvement of Pastures/ Grasslands (including in-situ SWC work)ForestFireManagement

Inaddition,theCommunityDevelopment&LivelihoodImprovementPlan(CD&LIP)willbeexecutedbyPFMinstitutionsincludingCommonInterestGroups(CIG),UserGroups,Self-helpGroups (SHGs) and Executive Committeeofthe VFDS.

1.4 NeedforSub-CommitteeLevelMicroPlan

All the Project activities at the BMC sub-committee level shall be undertaken after preparation of along-term(5-7Years)development/ perspectivemicro plan.

Micro planning shall be considered as an empowering process that helps BMC sub-committee tolearnmore about themselves, their resources, issues and challenges, strengths andweaknesses,andfurthertoplanfortheir owndevelopment and sustainableresource management.

The implementation of PIHPFEM&L activities at the BMC sub-committee level shall be guided by anapproved Micro Plan prepared by the respective VFDS/BMC sub-committee. Micro plan preparationshallbethefirststepof implementation ofthe field activities.

Micro Plan shall be a comprehensive development plan with a special focus on forest and livelihooddevelopment. The micro plan shall cover both forest and non-forest areas managed by the BMCsub-committee. Micro plan shall integrate the needs of BMC sub-committee into comprehensiveplan through analysis of current conditions, social assessment and interaction with the members,andwith referencetothe prescriptions oftheWorking Plan ofthe ForestDivision.

Micro Plan will not only focus on forestry activities and it should be comprehensive so as to includealldevelopmentactivitiesthatmaybetakenupbyotherGovernmentDepartmentsandAgencies

through convergence. During the preparation of micro plan the BMC sub-committee shall interactwith officials of other departments and after preparation of Micro Plan, it should be shared withotherGovernmentDepartmentsandAgenciesfordovetailingtheiractivitiesinBMCsub-committee.

A Micro Plan shall consist of two types of sub plans; i) Forest Ecosystem Management Plan (FEMP)and,ii)CommunityDevelopmentandLivelihoodImprovementPlan(CD&LIP)andshallbeaggregatedbyFTUforeachrange.

Under the Micro Plan composed by FEMP and CD&LIP, broad action plan is to be prepared for 5years based on the 10 year's vision. During the exercise, the achievements of the previous year shallbe assessed and identify issues and corrective measures to further increase the efficiencies andeffectivenessoftheprojectimplementation.

In the annual planning undertaken during 4th year, a broad action plan shall be prepared for thefourthcoming5years. Theprocessofthe2-5yearactionplanshall followthesamestepasdiscussedinthe above section.

A copy of Micro Plan, when prepared, shall be shared with the Gram Panchayat, Block DevelopmentOffice(BDO) andother LineDepartmentsfordovetailingtheir activitiesinBMC sub-committee.

Although Micro Planshall be prepared for a period of6-8 years itwouldbe revisited on annualbasis.

2. BasicInformation

2.1BasicInformationsheetonMicroplan

	Nameof theBMCSub-Committee	**Sumling**
	Nameof the Ward	**Sumling**
	Registration No.	HPCD- 6085
	NameofGram Panchayat/BMC	**Khurik**
	Nameof the FTU/ Range	**Khurik**
	Nameof theDMU/ForestDivision	**Spiti**
	Nameof theDistrict	**Lahaul&Spiti**
	PeriodofMicroPlan	2022-23 to-2027-28
	Date of approval of Micro Plan by Executive Committee of BMC Sub-Committee	(BMCSub-Committee resolution for approval of Micro Plan attached)
	Date of approval of MicroPlan by HeadofDMU	21/11/2022
	Key team members engaged inPreparation of MicroPlan	Dr Pawan Kumar AttriMr. Aman Kumar Ms.DikshaKumari
	Date of General house conducted& Resolution passed	
	Numberofparticipants	**Male:6 Female:8 Total:14**
	Voting Pattern followed for formation of BMCSub-CommitteeEC	Nominated: Elected:
	Number of membersinEC	Male:6 Female: 8Total:14

2.2

General ProfileofBMCSub Committee selected.

S.No	Description	CurrentStatus
1	Date& Registration No. of BMC Sub-Committee	HPCD-6085
2.	No. ofRevenueVillages/Ward/ Forest Villages covered	**1**
3.	Totalnumberofhouseholds(HHs)inWard	**16**
4.	TotalNoofhouseholdrepresentingBMCSub-Committee GeneralHouse	**16**
5.	TotalPopulationinSumlingWard	**79**
6.	TotalGeneralCategoriesHHsin Ward	**79**
6	TotalOBCHHsinWardSumling	**0**
7	TotalIRDP/BPLHHs	**20**
8	TotalLivestock inSumling Ward	**158**
9	Bank accountdetails	**SavingAccount**
10	Name of theBank	SBI BANK
11	Date of account opened	30/11/22
12	Account number/IFSC	40943414660/SBIN0003337

2.3Detailsof EC Membersof BMCSub-Committee

S.No	Name	M/Fe	Designation	Category	Village	Contactnos
1	Kalzung Mangfel	F	President	ST	Sumling	8988303543
2	Sonam Roze	F	Vice President	ST	Sumling	9418616317
3	Kalzung Tobje	F	Joint Secretary	ST	Sumling	94186538254
4	Paldonsonam	F	WardPunch	ST	Sumling	8988775543
5	Tanzinshakya	F	Members	ST	Sumling	9459270571
6	Annu	M	Members	ST	Sumling	9418687139
7	Hurring Angchuk	M	Members	ST	Sumling	9459570431
8	Tobrang roje	M	Members	ST	Sumling	9418860166
9	Kalzung Dolma	M	Members	ST	Sumling	8988969690
10	Tanupdolma	F	Members	ST	Sumling	8988209279
11	Rarangrigzin	F	Members	ST	Sumling	9459533063
12	NamgalDolma	M	Members	ST	Sumling	9418400589
13	DolmaChhering	F	Members	ST	Sumling	9459768098
14	Tenzin dolma	M	Members	ST	Sumling	9459269068

3. MicroPlanningProcess

Before starting the micro-planning process FTU-Team Conducted the Gram Panchayat AwarenessMeeting .In this Meeting, All Panchayatrepresentative, membersof Mahila mandals andyuva mandals and other villagers of Panchayat area participated in this meeting. FTU team discussed aboutJica Project and its objective with Participants in detail. After this meeting, FTU Team conducted thewardlevelawarenessmeetinginSumlingwardwiththehelpofWardmembersandothersources. Thenresidentof Sumling wardagreed for jica projectimplementation.

Sub-committeelevelMicroPlanconsistsofCommunityBasedManagementPlan(CBMP)andCommunityDevelopment&LivelihoodImprovementPlan(CD&LIP).Foractivitiestobeimplemented through line department/agencies detail of Convergence activities also added to theMicro Plan. The detailed process followed in preparation of micro plan focuses on informationcollection primary, secondary sources, ward level meetings and other meetings held with primaryandsecondarystakeholders.Theinformationalsocollectedfromdifferentsectionsofthecommunity using Participatory Rural Appraisal (PRA) and RRA techniques. During PRA focus groupdiscussions(FGD)withthespecificgroupsi.e.vulnerablefamiliesOBC/Womenwasheld.Theinformationcollectedwastriangulatedwithdifferent groupsandfinalizedin aplenarysession.

The information collected was analysed jointly with the active members of Sub-Committee andothercommunityparticipants.Ameetingwasconductedtosharetheprimaryinformationcollected. Thechanges were incorporated basedon the participants'consensus.

Theparticipants were divided intodifferentsub-groupssuchas farmers, women, youth, poor,labour,etc.toidentifytheirproblems,perceivedneedsandpriorities.Thesub-groupssuggestedthepossiblesolutionstodealwiththeirneeds&prioritieswhichemergedduringthegroupexercises.Adetailedsetofperceivedproblemsandsolutionswasdevelopedjointlybymicroplanning team of the project and the Sub-committee members. During PRA exercise women andmen were given maximum opportunities to bring forward forest related and livelihood relatedissues.

Theperceivedproblems,solutionsandinformationcollectedthroughprimaryandsecondarysources were discussed with General house of Sub-Committee. A refinedsetof problems andsolutions emerged to take it forward for inputs from the technical staff and the experts to finalizetheMicroPlanespeciallytheCBMP.ExecutiveCommitteeofJanahalwasalsoformedintheGeneral house according to the HP Forestry Project guidelines. For Forestry interventions UserGroup were alsoformed.

Technical staff of HPFD and Community focused on quantification and decided a tentative target fordifferentinterventionsandpreparedcostestimatesbasedontheProjectnormsandlocallyprevailing rates. The micro plan is finalized in consultation with Field Technical Unit (FTU), DivisionalManagementUnit(DMU)andExecutiveCommitteeofSub-Committeeandinputsfromotherexperts.

The details presented in the following table indicate the critical steps followed in micro planningprocess.

S.N	**SequentialStepsFollowedAdditioncanbemadeasper locallyfollowed process**	**date**
	Community awareness building meetings/workshops organised atGP&wardLevel	10.10.2021
	GPConsenttowork withproject and	10.10.21
	BMC Sub-Committee formed/Executive committee constituted/sub-committeeRegistered.	10.10.21
	ActionplanpreparedwithSub-CommitteeforMicroPlan Preparation	
	Microplanningprocessstarted/PRAexerciseconducted (From-To)	
	Participatoryinformationanalysiscarriedout (From-To)	
	Negotiation/planningprocessheld (From-To)	
	Participantsinvolved in negotiation/planning process (Male & Female)	55-60 (more than 50% were female)

	Presentationofthedraftplaninvillage/wardassemblyfor approval	
	Documentingthe micro plan(From-To)	
	MOUsignedbetweenDMUandECofSub-Committeefor undertakingmicroplanning and implementation	
	Problems/challengesexperienced	1 village is nearby so not much problem. people were little low in meeting. .

4. Socio-EconomicStatusofSumling

4.1 GeneralDescriptionoftheBMCSub-Committee

4.1.1 History of Area selected:- The Spiti Valley is a mountain valley with cold desert ecosystemlocated in the Trans Himalayan chain in the North-Eastern part of Himachal Pradesh in India. Theword Spiti means“Middle Land” the land betweenTibetand India. It occupies an area of 728,023ha and lies between 31°42' and 32°58' N, and 77°37' and 78°35' E. The planning site Sumling villageis at an elevation of 3754meters (12316ft) and about 16 kilometers from the town of Kaza. Sumlingis a small Village/hamlet in Spiti Tehsil in Lahul and Spiti District of Himachal Pradesh State, India. Itcomes under Khurik Panchayat. It is located 62 KM towards East from District Headquarter Keylong.AverageSexRatioofsumlingvillageis1724which is higher than Himachal PradeshSumling village haslowerliteracyratecomparedto HimachalPradesh.

In 2011, literacy rate of Sumling village was 79.41 % compared to 82.80 % of Himachal Pradesh. InSumlingMaleliteracy standsat100.00% while female literacy ratewas 68.89%.

4.1.2 Location of BMC Sub-Committee Area: - Sumling Sub-Committee fall under Khurik BMC/GramPanchayat in Lahaul and Spiti District. The selected BMC Sub-Committee area falls under WL KazaRangeinWL SpitiforestDivisionManagementUnit(DMU).Location Mapis attachedon**Page No.3**

Boundary: - The boundary of selected BMC Sub-Committee area is as under:-

East= Kaza khas

West = Dhar

DangdagmaNorth = Dhar

KeelingSouth=DharLang

wooh

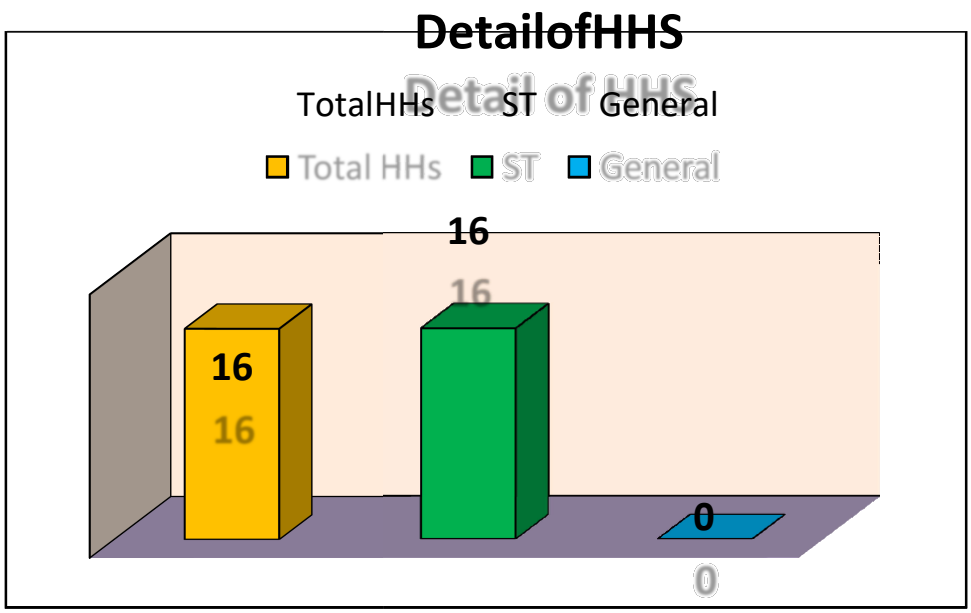
Distance fromForest and other offices:-

SumlingBMCSub-Committeeareaislocatedata distanceof14kmfrom WLRangeoffice;Revenueblockoffice,DMUofficeand200 kmfromthe districtheadquarter.

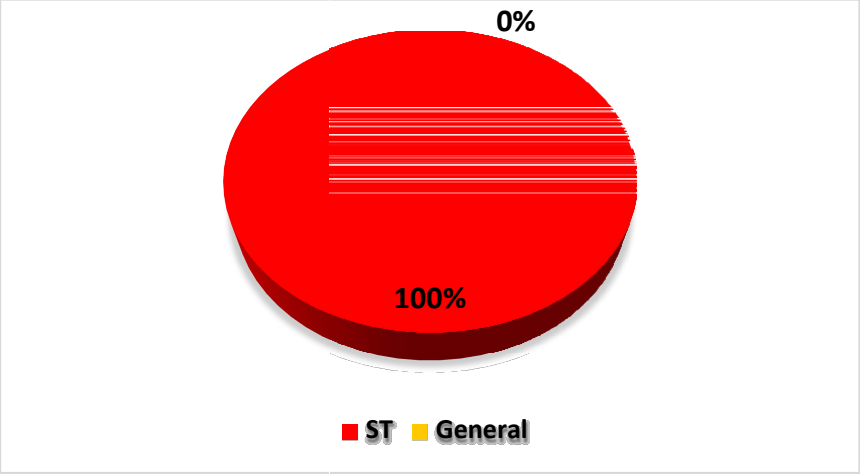
4.2. Socialcomposition

Households(HHs)	ST	OBC	General	Total
Noof HHs	**16**	**-**	**16**	**16**
%ofHHs		**-**	**100%**	**100%**

- **InSumlingSub-Committee0HHsbelongtoOBC and general category,.**



- **16HHs are STand100%belong to STcategory.**



4.3 Population

Socialcategory	Population(Number)					
	Male Adults	Female Adults	Total Adults	Male Children	Female Children	Total Children
GENERAL	0	0	0	0	-	0
ST	29	50	79	6	5	11
Total	29	50	79	6	5	11

TotalpopulationofSumlingSub-Committeeis79.Outofthese29aremaleand50arefemale.Malechildren are6andfemale childrenare5.

Outoftotal populationnoonebelongstoGeneralcategory.

4.4 EducationalStatus

4.4.1 EducationalStatus(Adults)

Level	Number		
	Male	Female	Total
Illiterates	**19**	**6**	**25**
Percentage(Illiterates)	**24.05%**	**7.59%**	**31.6%**
Primaryeducation	**3**	**3**	**6**
Middle education(10^{th})	**7**	**9**	**16**
HigherSecondary(12^{th})	**7**	**9**	**16**
Graduates and above	**7**	**10**	**17**
Professional courses	**0**	**0**	**0**
Totalliterates	**23**	**31**	**54**
Percentage(literates)	**29%**	**39%**	**68%**

68%peopleareliterate.Outofthese22%malesareeducatedwhile39%femalesareeducated.Whereas 31.6% populationis iiliterate.

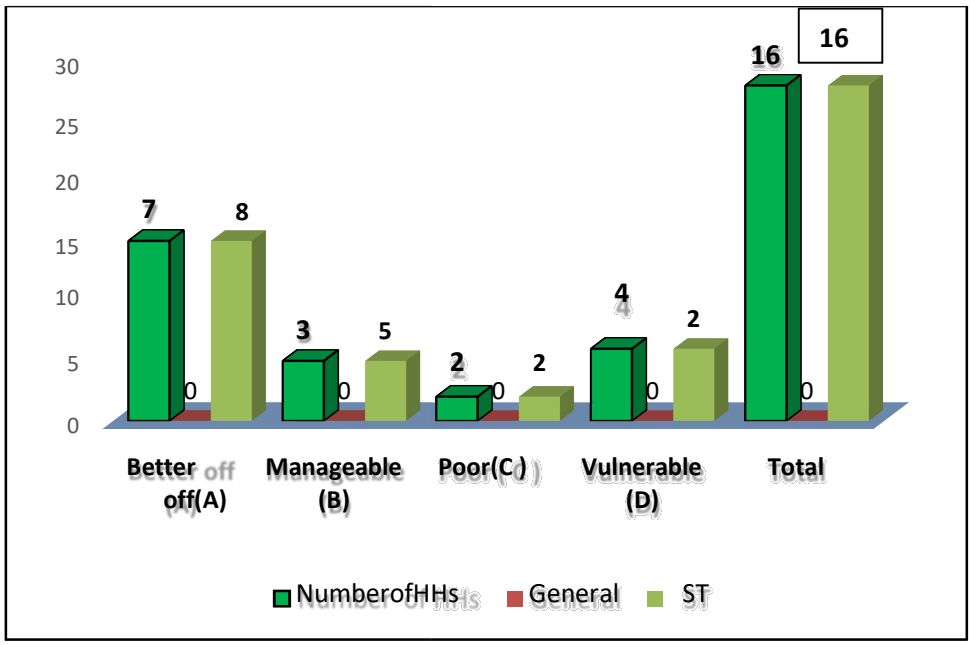
4.5 EconomicCategories

4.5.1 Wealthranking asperPRA exercise

Category	Criteria/Indicator	Noof HHs	Category code**	CategoryWise	
				Gen	ST
Better off	Govt Job,Agriculture small business like shops, dhabhas etc	7	**A**	**-**	**8**
Manageable	Agriculture ,taxi drivers.	3	**B**	**-**	**-**
Poor	SmallFarmers,Labour	2	**C**	**-**	**4**
Vulnerable(needimmediate attention)	Labour	4	**D**	**-**	**2**
Total		**16**		**-**	**16**

Vulnerable HHs are those which do labour work, and are supported by relatives financially.Poor category isofsmallfarmerswhohavelesslandand alsodolabour work. Manageablecategoryincludespeopleinvolvedinagriculturehavinglessland;domilksellingandvegetable growing& selling work

Betteroff doGovt. jobs,andarehavingagriculturemoreland.



HHsAboveandBelow PovertyLine *(As perGovernmentCriteria)*

Households	Total	APL	BPL
No ofHHs	16	4	12
% ofHHs	100%	25%	75%

During livelihood analysis B category HHs showed 75% dependence on Agriculture, 25% on govt jobworkfortheirlivelihoods.

Where as category B (Manageable) HHs showed 60% dependence on Agriculture and AnimalhusbandryandLabour 40% deficiency inmeetingtheir livelihood requirement.

Thereis nocategoryA class foundinthis area

Accessto BasicFacilities/Services

Facilities/Services	Availability (% HHs)	Distance (Km)	Current status
Toilets	98%	-	Local dry toilets.
Toilets with flushwater	-	-	**10 %** -
LPG	94%	14	UseofLPGisnotregularasperaverageonly 4LPG Cylinderareusedperyear/Per HH
Improved stove/Tandoor	100%	-	100%HHhaveTandoorforHeatingandcooking also
Electricity	100%		100%HH have electricity connection. In winter,snow falltimeelectricityfails.
Drinking water	100%	05-1Km	100%HHhaveDrinkingwater connections
Healths ervices	100%	1-8KM &40KMHQ	kaza
Veterinary services	80%	07 KM.	Veterinary Servicesareavailable
Banks	100%	14KM.	Villagersgoesto Kazaforavail Bank Services
Markets	100%	04-10KM.	VillagersgotoKazaforPurchasing.Shopsnot availableinvillagefor DailyNeedsProduct
Anganwadi	100%	100to 1000Mtr.	Aganwari available in village with good service
Primary schools	100%	100 to 1000Mtr.	PrimarySchoolavailablewithin thevillage with good Service
Secondary	100%	1-2Km	Sr.SecondarySchool availableinKaza.

schools			
PDS	100%	0.5-02 KM.	PDSavailablewithinSumlingVillagewith betterService
Transport	100%	03-04KM.	Govt.Bus service and Pvt service (Taxi) available .
Telecommunication	100%	10km	All HHhaveMobilePhones

5 ResourceAnalysis

5.1 LandResources

5.1.1 Land UsePattern

Landuse	Total land	Landunder cultivation	Forest land	Orchard	Waste land	Water body area	Panchayat/ Other-specify
Area(ha)	**513.16**	**15.61**	**53.7**	-	-	-	-
%Area(ha)	**100%**	**3%**	**10.46%**	-	-	-	-

5.1.2.LandOwnershipPattern

Land Ownership	Private land	Community land	Panchayat land	Forest land	Waste Land	Total
Area(ha)	**15.61**	-	-	**53.07**	-	
%Area(ha)	**3%**	-	-	**10.46%**		

LivestockPopulationSumlingVillage

No.	Cow	Sheep/goat	Yak	Donkey	Total
	60	**48**	**30**	**20**	**158**

5.2 Forest Resources5.2.1 ForestArea

5.2.1.1 SiteSelectionandLocation

This site has been short listed by the DMU and his field staff. Bio-diversity Management CommitteeSumling had formed by Himachal Pradesh State Biodiversity Board under Biodiversity act 2002.AsperguidelinesofJICA,threesub-committeeshadtobeformedundereachBMC.TheSub-Committee Sumling area falls under Kaza BMC.The site is approximate 20 Kms from Kaza RangeofficeSpiti. Location***Map isattachedPageNo.03***

5.2.1.2 DatafromWildlifeForestDivisionforCommunityBasedBio-DiversityManagementPlan(CBMP)

Despite being a high altitude cold desert, spiti boasts of more then 450 species of medicinal andaromatic plants. These include Seabuckthorn, Hatagirea, Aconitum, Ratanjot, Ephedra, Artemisiaand other condiments. The alpine pasture on the high plateaus is home to a varity of small bushesandgressesincludesRosasericea,HipopheaeandLoniceraamongothers.Threatenedplantsspecie sare *Arnebia euchroma,Berginia stracheyi, Physochlaenapraealta,Rhodiolaheterodonta.*

5.2.1.3 Descriptionoftheforests(Sanctuaryarea)

TheentireSpitiregionisclassifiedunderthe'Trans-HimalayanColdDesert'biogeographiczone

. The vegetation in Spiti is classed as 'Alpine scrub' or 'dry alpine steppe' vegetation. Such areasare characterised by scattered and open bush-land mainly with herbaceous and shrub speciessuch as *Artemisia spp., Lonicera spp*. and *Caragana* spp. The graminoids such as *Festuca* spp.,*Poa* spp. and *Stipa* spp. are found in the area, but by and large their biomass seems to bedepleted (Mishra 2001). Today, the two important vegetation formations in the region includeopen or desert steppe dominated by grasses and sedges (e.g. *Stipa* spp., *Leymus* spp., *Festuca*spp., *Carex* spp.) at altitudes up to 4,600 m, and dwarf shrub steppes between 4,000 and 5,000m dominated by shrubs such as *Caragana* spp., *Artemisia* spp., *Lonicera* spp. and *Eurotia* spp..Mesic sites such as river valleys and areas along springs and glaciers are often covered by sedgemeadows (*Carex* spp., *Kobresia* spp.). Vegetation occurs up to 5,200 m, but becomes sparseabove 4,800 m, and is limited to forbs such as *Saussurea* spp. and *cushionoid* plants such as*Thylacospermum*spp..Theimportantplantfamiliesinclude*Graminae,Cyperaceae,Brassicaceae, Fabaceae, Ranunculaceae, and Leguminoceae.* The Villagers from Sumling andKomic and Langcha Sub- Committee have their rights in this Forest area .The Villagers of theseareasdepend on this Forest areafor Fodder, Fuel wood and Timber. The requirement OfFodder and Fuel wood of Villagers does not fulfill from this Forest area so they also go toSanctuary areafor fulfilltheirrequirements.

Geology,Rock andSoil:

Te area is characterised by sharp changes in a combination of quartzite, shales, limestones andconglomerates. Most of the area is rich in fossils, mainly brachipods, trilobites, ammonites, bivalvesand also certain corals and algae, indicating its Tethyan past. The high altitude desert soils arepredominantly sandy and shallow, derived mainly by disintegration due to marked diurnal andseasonal fuctuations of temperature.The soils are mostly silty loam to silty-clay loam in texturewith a slightly alkaline pH, poor organic matter and water holding capacity.The soils are low inavailablenitrogen,phosphorous,potassiumandcarbon,howeverare bettersuppliedincalcium.

Terrain:

All of Spiti occurs above an elevation of 3,000 m. The lowest point is where the river flows into theKinnaur district near Hurling. The river cuts a deep gorge in the lower areas and opens up furtherupstreamnearTabowheretherivermeandersoveravastvalley,attimesclosetoakilometrewide.

The slopes on the right bank of Spiti are more rugged and have longer streams, while the leftbank is less rugged. In fact there is a40 km plateau from Kibber to Demul on the left bank, whichalso extends into much of the mid Lingti valley, covering over 500km^2. Of the c. 7,600 km^2 coveredby Spiti.There are Shilla (6,132m) which are popular climbing destinations. Apart from the accessalong the main Spiti River, the important passes are Pir Panjal range, the Parang la (5578m) andTakling la (5575m) with the Pare Chu Valley, on the Zanskar range, and the Kunzam la (4590m) withtheChandraValley.

Climate:

Spiti occurs on the leeward side of the Pir Panjal branch of the Himalaya that cut of theMonsoonaleffect from the plains rendering the area dry and cold. Westerly disturbances in the winter bringsomeprecipitationintheformofsnow.Thetemperaturescanrangefrom–40inpeakwinter,to30degreeCelsiusinpeaksummer,withtheminimumtemperatureremainingsubzerofromSeptember to April in most places. Severe winds occur almost every day and are further reason forthe desiccated atmosphere and lack of trees. Te overall climate is thus dry and cold with a longwinterextending from mid-NovembertoMarch.

Precipitation,Temperature, Wind SpeedandHumidity:

Recent local reports and metrological data suggest a marked change in whether patterns in Spitisuch as an increase in summer precipitation and a decline in winter snows. Winter snows areimportantforbothprovidingirrigationwaterthroughsnowmeltstreamsinsummeraswellassoil

moisture for rangelands during the crucial spring and early summer period. Late summer rains in(July-August)areseenasthreatstostanding crop.

Watersources:

This area is welldrained;andfallsunderwatershedof SpitiRiver andPinRiver.

Rangeofwildlife, statusdistributionandhabitat:

Te mammalian diversity of Spiti is not exceptionally large, but range-restricted species occur here.Te primary large mammals reported from the landscape are thesnow leopard, Asiatic ibex, bharalor blue sheep, Tibetan wolf and red fox.All of which are nationally threatened, and many are alsointernationally threatened. based on existingliterature, prominently represented in the avifaunalcomposition are Considering the good representation of high altitude habitats and their potential toholdgoodpopulationsofrepresentativeavifauna,KibberWLSSnowPartridge(*Lerwa lerwa*),Hume'sShort-toedLark(*Calandrellaacutirostris*),RosyPipit(*Anthusroseatus*),RobinAccentor(*Prunella rubeculoides*),Brown Accentor (*Prunella fulvescens*)White-winged Redstart(*Phoenicuruserythrogaster*),HimalayanGrifon(*Gypshimalayensis*),HimalayanSnowcock(*Tetraogallushi malayensis*),Snow Pigeon(*Columbaleuconota*) etc.

C3-15Alpine Pastures:

The entire Spiti region is classified under the 'Trans-Himalayan Cold Desert' (Zone 1) biogeographiczonewiththeProvince'Ladakhmountains'(1B)coveringmostofthesouthernbankandthe' Tibetanplateau'(1A)coveringthenorthernbankspertheWildlifeInstituteofIndia'sbiogeographicclassification.

The vegetation in Spiti is classed as 'Alpine scrub' or 'dry alpine steppe' vegetation. Such areas arecharacterised by scattered and open bush-land mainly with herbaceous and shrub species such asArtemisia spp., Lonicera spp. and Caragana spp. The graminoids such as Festuca spp., Poa spp. andStipa spp. are found in the area, but by and large their biomass seems to be depleted. Today, thetwo important vegetation formations in the region include open or desert steppe dominated bygrasses andsedges (e.g. Stipa spp., Leymus spp., Festuca spp., Carexspp.) at altitudes up to4,600m, and dwarf shrub steppes between 4,000 and 5,000 m dominated by shrubs such as Caraganaspp., Artemisia spp., Lonicera spp. and Eurotia spp.Mesic sites such as river valleys and

areas

alongspringsandglaciersareoftencoveredbysedgemeadows(Carexspp.,Kobresiaspp.).Vegetation

occurs up to 5,200 m, but becomes sparse above 4,800 m, and is limited to forbs such as Saussureaspp. and cushionoid plants such as Thylacospermum spp.. The important plant families includeGraminae,Cyperaceae, Brassicaceae,Fabaceae,Ranunculaceae, andLeguminoceae.

These pastures are found above the tree line up to limits of PA. A variety of medicinal herbs arefound in these pastures. Food, water and shelter are the primary requirements of any living being.Sufficient quantity of food and water both for animals and birds is available in the sanctuary. Someparts of the sanctuary are disturbed due to grazing of domestic and stray cattle. For wild life thisfactor is very important as hiding places, shelter, nesting, resting, play, food availability all getdisturbed and wild life avoid these areas. The food source in shape of grass and other biomass ispresent difficient quantity.Different herbivores prefer diverse food under different circumstancesso nothing can be said about quality of food availability. Even sufficient food present may not beavailable for the wildlife species due to various factors that attract or repel wild life. Disturbancebecomesa limiting factor.

Availableboastsofmorethen450speciesofmedicinalandaromaticplants.TheseincludeSeabuckthorn, Hatagirea, Aconitum, Ratanjot, Ephedra, Artemisia and other condiments. The alpinepasture on the high plateaus is home to a variety of small bushes and gresses includes Rosa sericea,Hipopheae and Lonicera among others. Threatened plants species are *Arnebia euchroma, Berginiastracheyi,Physochlaenapraealta,Rhodiola heterodonta.*

Animals

Vertebrates,theirstatus, distributionandhabitats.Habitat quality,quantityandkeyareas

The mammalian diversity of Spiti is not exceptionally large, but range-restricted species occur here.The primary large mammals reported from the landscape are the snow leopard, Asiatic ibex, bharalor blue sheep, Tibetan wolf and red fox , all of which are nationally threatened, and many are alsointernationally threatened Among the herbivores, ibex occupies much of the right bank and bharal,the left bank of Spiti River. Ibex also occurs on the left bank from the Lossar till near Kioto forpotential distribution. Bharal extend into the Pare Chu valley also. During the field survey over 200blue sheepwere sighted along with road extended to dumel village over300 bluesheepin theLingti valley and about 25 in the Pare-Chu catchments. Ibex is mainly distributed in the narrowvalleys of the tributaries of the Spiti River along its right bank. Although snow leopard occursthroughouttheupperSpitivalleytheirsignsweremorefrequentintheLingtirivercatchmentsand

the gorges formed by the Ula, Ratang and Guindi nala. Other animals are Asiatic ibex, Bharal orBlue sheep,Tibetan wolf, Redfox,Himalayanweasel etc

Itisimportanttoanalyzetheresourcesavailableinthesanctuaryintermsofhabitat,whichultimately control and regulate the wildlife. Habitat can be analyzed in terms of space, food, cover,presenceofotheranimalsandclimaticfactors.Spacemultidimensionalfactorisaprimaryprerequisiteforwildlife.Thelengthandwidthgivesthequantityofareaavailable,thicknessindicative of number of layers available for different species. The quality and quantity of each ofthesedimensionsgivestheidea of nourishment of wildanimals,whichisin abundanceinthis PA.

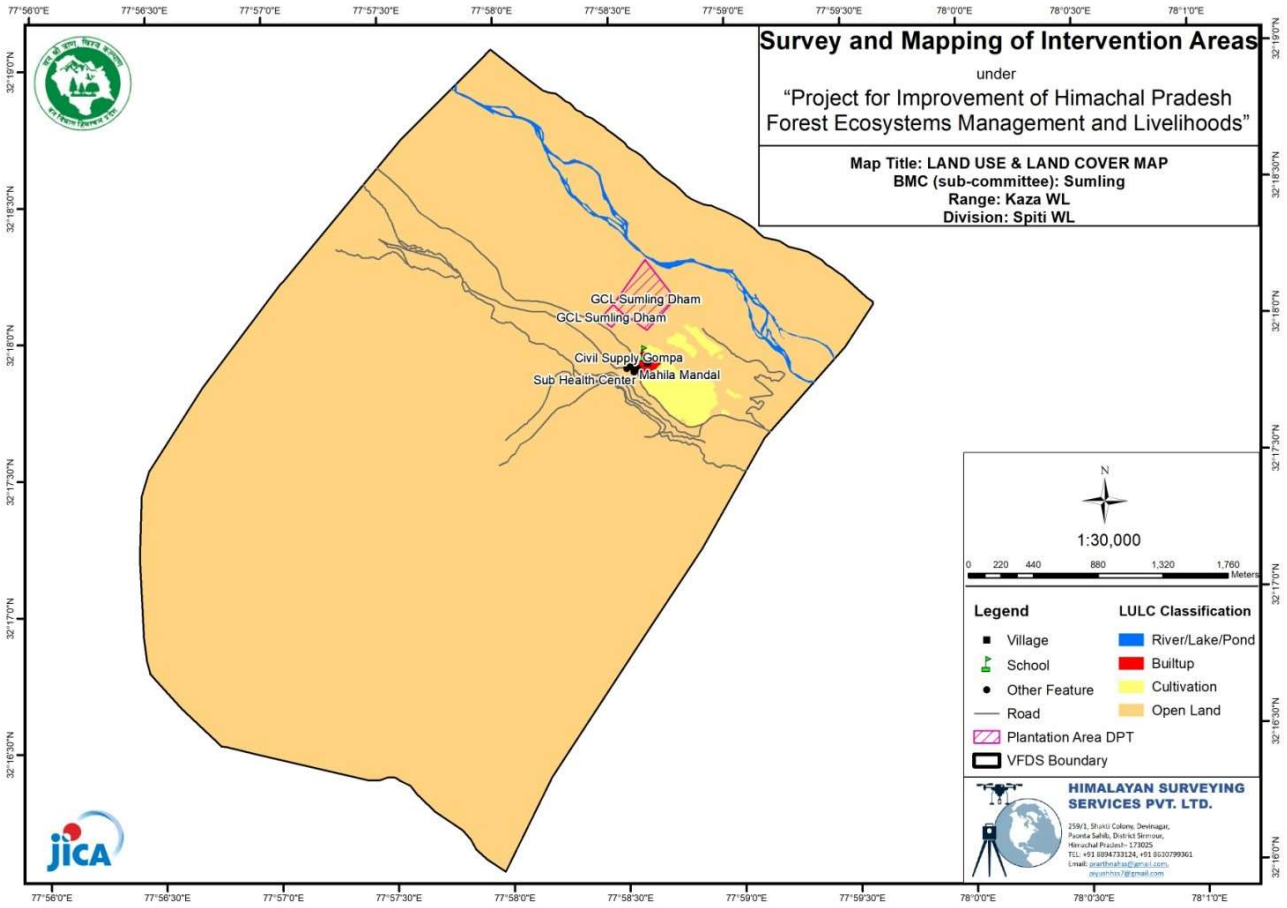
5.2.1.4 SelectionofIntervention areas,planningandtreatment:-

The BMC sub committee has been selected as site by DMU Kaza and his field staff following projectguidelines which included forest being in a state of degradation to various degrees, deficient tomeetwiththe demand andsupply chaintothe local rightholdersaroundtheforest.

OnePotentialinterventionarea/treatmentplothavebeenidentifiedduringMicroplanningexercises by technical staff (Fgd, Block Officer and Range officer/ACF Kaza.) The activities to becarriedoutstandsdiscussedwithvillagersindetailduringPRAexercises.Theselectedplots,communityland/patchesareeitheropenareasorareblank,whichwouldbeplantedwithmultipurposespecies varying from 200per hectare.

5.2.1.5 Mapof potential Sites Selected (FOREST)

SocialMap,ResourceMap,Potential/interventionareaMap,proposedinterventionMapsareattached as *Annexure-III, V, VI, theGoogle earth pro map of Sub-Committee area is annexed asAnnex-**III. Technical maps would be prepared by Technical team to be hired by JICA ForestryProject. (Land use map, Forest cover map/ Forest Density map, GP and Ward boundary maps,Treatment areamap)***



5.2.1.7 Data and maps on grazing, fire, other risksLivestock grazing

Livestock	HH	Average	Total
Cows	16	3	60
yak	16	1	30
Goats/Sheep	16	3	48
Donkey/Mule	16	1	20

Asmanyas60Desicows48sheep/goats,30yakand20donkey/mulearereportedinthisvillage.Thelocalrighholdershadbeenallowedtograzetheircattle,sheepandgoatsinthepastaspertheir rights recorded in the Settlement Report. Grazing cause problems to wildlife such as:Competitionforfood. Disturbance.Transmissio

n of diseasesSoilErosion.

Increaseinthequantityofunpalatable grassesandweeds.

Illegal grazing is occasionally a problem in the area as stray cattle from in and around the protectedarea graze inside the sanctuary mixed with the cattle of right holders, thus, disturbing the wildlife.This problem is being eradicated with the enforcement of guidelines received from the MoEF& CCregardingsuspensionofrights.

No grazing permits are issued for grazing of cattle in the area. Generally, the people of the villagessituated outside the sanctuary send their redundant cattle to the forests at night especially duringrainy season. The villagers also take their livestock to high altitude pastures for grazing duringsummer season. They remain unattended and forest staff is forced to remove them out of thesanctuaryandsomecattle alsobecomeprey tothewild animals.

Wildfires

Area falls in -alpine zone. long winter area covered with snow and glacier. So, no incidance of fire inthisarea

Human Wildlife Conflict Human –Wildlife conflicts often hamper the well –being of people andinformation on the issue was facilitated during the PRA exercise. Information about wild animalcausing damage was almost no in this particular site.But people as well as their livestocks often getharmedbystraydogs.

Prescriptions:

Awarenessprogramme/workshopsshouldbeorganizedforlocalpeopletomakethemawareaboutdos anddon’tsincase ofencounterwithwild animals.

Thelocalpeopleshouldbemadeawareaboutvariousdepartmentalwelfareprogrammes,especially aboutthe procedure tofile compensationclaim.

Arapidresponseteamconsistingoftrainedofficialsalongwithequipment’sshouldbestationedeither atRangeorDivisionHQstodeal withany exigencies.

Foddertreeplantationsshallbe developedontheperipheryofthevillagesandstallfeedingmaybepromoted.

5.2.1.9DataandmaponinterventionAreas/Treatmentplots

Cost norms applied for calculation are as per Forest Department approved norms. Plants, pit sizesare accordingly to models prescribed and approved by Forest Department and Project guidelines.The forests have been visited by teamagain andagain and as per the site conditions treatmentplots have been prescribed. The soil conservation, soil erosion maintaince and soIl regenerationworksareapplicableinthisSubCommitteearea.Fencingparthasbeencriticallyanalysedkee ping

inviewlocalconditionsaswellasbioticpressureandaccordinglyprescribed.Total10Haccommunitylandh avebeenidentifiedinaJICAMapbutaspernormsofDFOKazaitwillrectrictedto 7 Ha.

Table2: Plotwisedetailsof Sub-Committee

S. No	Plot name	Plot No	Area	Latitude longitude	PFM mode	FD mode
1	**GCL Sumling Dham**	**1**	7	32º 17’54” 77 º58’41”	**Yes**	**---**

5.2.2 TrendinCommunity DependencyonForests(asperPRAexercises)

Criteria	Availability &Accessin thePast	CurrentAvailability&Access
Major speciesavailable	*Trigonella emodi, Cicerarietinum,Festucarubra, Geranium,Cousiniathomsonii*	*Aconogonum, Trigonella emodi,Cicerarietinum, Festucarubra,*
Major NTFPs available	*Aconitum,Arnebiaeuchroma, Codonopsis clematidea,Gentiana,Pedicularis, Dactylorhizahatagirea*	*Arnebia euchroma,Hippophaetibetana,Dactylorhizahatagirea*
Fodderavailability	*Trigonella emodi, Cicerarietinum,Festucarubra, Geranium*	*Trigonellaemodi,Cicerarietinum,Festucarubra, Geranium*
Fuel wood availability	*Branches of small trees*	*Govt depo*
Timberavailability	*Branches of small trees*	*Carried from outer areas*
Accesstoopen grazing	Easy access	Only sheep & Goat
Access to fuel wood	Govt depo	Govt depo
Access tofodder	Easy access in summer.	Easy access in summer.

Access totimber	Carried from outer areas	Carried from outer areas

AccesstoNTFP	Easy access	Forestlandbeingnearer,butonlysome peopleoramchicollectfortheirperson aluses.no commerisialzationofNTFP

5.2.2 HouseholdsDependingon Forest (asper PRA exercises)

Category	% HHs dependingon forest				
	NTFP	Fuelwood	Fodder	Grass	Other
Primary forestusers	16%	0	70%	50%	-
Secondaryforest users	20%	0	15%	10%	-

Primaryforestusersforfuelwoodare100%,forfodder70%andforgrasscollection50%.Secondaryforestusersare80%andforfuelwoodits15%.Peoplefromadjoining villages also visit these forests.

5.2.4 Forestresources oftheselectedarea(asperPRAexercises)

S. No	Species(localname)	Mainuses	RelativeAvailability(%)	Perceivedvalueof plant (scale of 1-10, 1 beinglowest)	
				Men	Women
1	*Trigonella emodi*	Fodder	8	6	8
2	*Cicer arietinum*	Fodder	6	6	6
3	*Festucarubra*	Fodder	3	5	7
5	*Arnebia*	Medicinal	50	10	10

	euchroma				
6	*Gentiana*	Medicinal	9	9	9
7	*Caragana brevifolia*	Fuel,Construction	27	10	10
8	*Lonicera spinosa*	Fuel,Construction	37	10	10
9	*Salix*	Fuel,Construction	18	10	10
10	*Hippophae tibetana*	Fuel, Construction Medicinal	11	8	8

Relativeabundanceof*Arnebiaeuchroma*ishigh,itisoneofthemostfavouredspecies.Whereas*relativeabundanceofLonoicerasp. Caraganasp.*and*Salix sp.*are 37%,27%and18 %respectively.

5.2.5 Biodiversity

MajorHabitat	**Initiative Taken**
SnowLeopard	Developing snowleopard&preyspeciesmonitoringprotocols • Understanding andmanagingpeople-wildlifeconflicts • Developingmodelsformaintainingsociallyfencedareasforconservation • Awarenessprogrammesdirectedatschoolchildren, teachers andyouth

	• Helpinginconservationplanningandimplemenation
Bharal	PastureDevelopment,BanonHunting,Improvementofwildlifehabitat byconstructingwaterpond,waterharvestingstructure, repairof pathbunkers, saltlicksetc
Ibex	PastureDevelopment, BanonHunting,Improvementofwildlifehabitatbyconstructingwaterpond,waterharvestingstructure, repairof pathbunkers, saltlicksetc.
Blue sheep	PastureDevelopment,BanonHunting

HabitatManagement:

Habitat management is one of the most important activities of wildlife management. More ideal the habitat is, better it is in terms ofavailability of food, cover and water to wild animals.It is imperative to analyse the resources that are available in the habitat as this is the mainfactor which ultimately controls the wild life. Type of habitats available in the sanctuary needs to be thoroughly studied. As this will ensure thefuturemanagementandallmanagementpractices shallbeguidedbythetypeofhabitatandavailable resources.

Objectives:-

To study the habitat with respect to availability of resources and

constraints.Toassessthe suitabilityof habitat for various kind ofwildlife.

Tocarryout variousactivitiesforhabitatenrichmentwithminimumdisturbance.

Topropagatethe localspeciesof fruitbearingplanttoensureofavailabilityof foodtothe wildlifeofthe area.

ManagementPrescriptions:-

- For better managementofthehabitatfollowingactivitiesneeds tobecarried out.
- Improvement ofPastures.
- Maintenanceofwatersources.
- AugmentationofSaltLicks.
- Protectionandmaintenance ofPhysicalFeatures.
- Understandingandmanagingpeople-wildlifeconflicts
- Helpinginconservationplanningandimplementation

Improvement ofPastures:

Under pasture improvement not only the quality of bushes is to be improved but in vast extensive thaches/ pastures, planting of bushes likecragana, Goylson, salix sebuckthorn, Ribes sp, Rosa babiyna,Junipis carpus and other species needs to be carried out. This along withincreasing variety of forage shall also provide shelter to wild life. The local nutritious grasses need to be encouraged. Every year 7 hectare ofareashould betackled underthis scheme.

Maintenanceofwatersources:

The ward is deficient in water. To improve the water availability in the sanctuary, it is necessary to construct some water harvesting structures.Thesestructuresshouldbespreadovertheentirearea.Everyyearfive-sixearthenwaterpondswillbeconstructedinthesanctuary.Thesiteof proposed water ponds should be identified carefully after visiting/inspecting the area by DFO/ACF with clear objectives. The design will beaccordingtothe siteavailable on thespot. The costofeachstructurewillbeasperthe estimateandshallvary fromsitetosite.

ProtectionandmaintenanceofPhysicalFeatures:

Allthephysicalfeatureslikecaves,dens,cliffs;deadanddrybusheswouldbeprotectedandkeptassuch,asthesefeaturesareusedbywildanimals.They areusedby manybirds,insectsand smallmammals as resting,nesting, roostingandperchingpurpose.

Understanding andmanaging people-wildlifeconflicts

Itwillfocusontheeffectiveconservationmodels,especiallyusinglocalsupportaswellasspreadingawarenessaboutwildlifeandenvironmental conservation.

HelpinginconservationplanningandimplementationBycreatingawarenessprogrammesdirectedatschool,childrenandyouthandalsolocalcapacity ,planning andimplementation ofconservationworks .

5.2.6 NTFPCollection*(asperPRAexercises)*

S. No	Name ofNTFP (Local)	Collection time(Months)	No.ofHHsengaged -approx.	Averagecollection/Season/HH/year	Quantum collectedinaseason/ year	Quantum sold in aseason/ year (Rs)	Sale value inRs./kg	FromSub-Committee Area - yes/no	Majorproblems
1	Arnebia or ratanjot (50%),								Species becoming Extinct,wildanimalattacks
2	Codonopsis sp. (18%),								Wildanimalsattack

3	Gentiana sp. (9%)								Availabilityreducing
4	Dactylorhizas p.orsalaam panja(5%)								AbundanceReducing
5	Pedicularis(4 %)								AbundanceReducing
6	Leontopodiu m (6%)								

- NoCollectionofNTFPby primaryusers.
- RattanJotJangli Pyaz usedfor self-consumptiononly.

5.2.7 FuelsCollection/Consumption(asperPRAexercises)

S. No	Type of fueluse d	No ofHHsin volved	Unit	Average HHConsumpt ion /Year	AnnualCo nsumption /year	Sources	Cost involved,i fany	MajorProblems
1	**LPG**	16	No.	6	96	Govt.	940.00/per cylinder	Carriage ofkazato Sumling
2	**Fuel wood**	16	Cubic Kg.	6 months	625 kg/HH/M	Forest&Pvt. Land	680/-per 1000kg	Carriage of kaza to Sumling

5.2.8 Fuels/Fuelwood Deficiency(asper PRAexercises)

Fuels deficiency	% HHs with fuelsdeficien cy	Duration (Months)	Coping strategies
Low	--	---	--
Medium	---	--	---
High	16	Nov-March	DependuponForestcorporationforfuelwood.Plantin gofFodderplantsinforest&OwnLand,if possible.

- LPGispartiallyusedforcookingonlyin16HHs.FurtherForestDepartmentprovidesfuelwoodatsubsidizedrates(Rs.680/-perquintal)toallhouseholdsuptomaximum1000kgperhousehold.Apartfromitvillagercollectwoodyplantsfuelwoodofdifferentplantspecies i.e. Carganasp,Lonicerasp.Salix sp.Constituteoverhalfof thecollectionsfromthepasturesforfuelwood.apartfrom wood,peoplealsocollect considerablequantities of cattle,yak andequid dung for fuel.
- Duringsummer,rainyandautumnseason fuelwoodconsumptionislesscomparedtowinter.Beforewinterfuelwoodisstoredbyeachhouseholdforuseduringwinter.
- Averagefuelwoodconsumptionis625Kgper HHper month perfamilyin winterseason fromOcttoMarch.

5.2.9*FodderCollection/Consumption*(asperPRAexercises)

S. No	Typeoffodderused	No of HHs involved	Unit	Average HHConsumption/Year	AnnualConsumption/year	Sources	Costinvolved, ifany	MajorProblems
1	Green Fodder,Green Grass, DryGrassfrom pastureland	16	Kg.	8quital /800kg	18quintal	Forest,Pvt. Land	no	Fodder brought from far off forestsQualityfodder notavailableReducinglandholdingsdu etofamilydivision
						Forest,Pvt. Land	No	
						Forest,Pvt. Land	No	

2	Agricultureresidues from Agricultualfield		Kg.	10quital /1000kg		Pvt.Land	No	Less veterinaryfacilities ITKofrearinganimalsnotsuitableforhybrid animals.

*5.2.10*Fodder Deficiency*(as per PRA exercises)*

Fodder deficiency	% HHswithfodder deficiency	Duration (Months)	Copingstrategies
Low			
Medium	16	Oct-March	Fodder(tuddi)purchedfrommarkattherateRs.600per 50kgfromKazamarket.PlantingofFodderplantsinforest&OwnLand ,
High	-	-	-

MajorProblemswiththefoddercollection/Consumption isthatfodderisbroughtfromresiduesoftheircropssuchaspeas.

After September sheep and Yaks are sent to open pastures for free grazing till the snow occurs .In winters they take their domestic cattlesback to the houses. Average animal holding is 10 animal (7 cows, 1 donkey,1 yakgoat/sheep). Fodder species used aremainly agriculturalresiduessuchas barley,peas are givenasfodder.

- PeoplepreferHighvaluecash cropsandarenot growing traditionalcropswhichareresultinginless fodderavailability.
- Green and dried grass are obtained from Pastures in Summer. Pastures are closed by the possessor from 15 June to the end of October,inOctober grass cuttingis done andthereafter area is openedforall villagers for grazing in winter.

While extraction of species for fodder dependingupon the rangeland feature and livestock composition . on an average twenty three specieswere listed as importantfor fodderexcludingthe cultivatedones, and among these *Trigonella sp. Cicer sp. , Aconogonum sp, Festuca sp. ,Geranium,Cousinia thomsonii,Lindelofia stylosa, Leymussecalinus,Rumex*, ect.Constituted the bulk collected frompastures.

*5.2.11*TimberCollection/Consumption *(asperPRAexercises)*

S. No	TypeofTimberuse	No ofHHsd emand /year	Unit	Average HHconsumption /Year	AnnualConsumption /year	Currentsourceofcollection/purchase	Costinvolved,ifany	MajorProblems
1	Agriculturalequipment, House construction/repair, Furniture	10-12	KG/quintal	700kg /7 quintal	700kg	Timber distribution,purchase fromimported wood depots,sale depots		There is no forest they have topaycarriageforfuelwoodthey purchasefromdepot.

*5.2.12*TimberDeficiency*(as per PRA exercises)*

Timber deficiency	% HHs with Timberdeficiency	Duration (Months)	Copingstrategies
Low			
Medium	100%	Throughout the year	Illegalpurchase, illegalfelling,purchasefrom HPSFCLTD.
High			

Many woody species of plants are used for construction of traditional mud brick houses. Thelarger boles forthe roof are usually obtainedfrom outside or local poplar and willow plantations. The multi-layered roof is lined with bushes and other plants, especially along the edges.Many of these serve as protection against erosion and seepage due to water flow and snow melt, but also serve as emergency fodder and fuelon occasions. Potentilla, Hippophae tibetana etc. In some areas such as *Astragalus candolleanus, Caragana brevifolia, Lonicera spinosa, Salix,Potentillasp.andHyppophae sp.*arealso extracted in significantquantities forconstructionofhouses.

5.2.13 ForestManagementPractice*(AsPerPRAExercise)*

Key activities	Traditional practices	Current practices
Nurserydevelopment	Natural regeneration was assistedbyprotecting trees.	Nonurseryraisingpracticeofforestryspp.
PlantationManagement	Naturally growingsppare protected Singling if saplings growing naturallyShrubremoval	Naturally growing spp. are protected.Singlingifseedlings Shrubremoval

	Plantsgrown in sacred places	Plantsgrown insacredplaces
Forestprotection	Someforestsprotected assacredplaces,plantbestseedlingsintheseForests. Peopleweredirectlylinkedwithforestsforfuelwood,fodder, timber.	Someforestsprotectedassacredplaces,plantbest seedlings intheseForests. Introductionofchil,monoculturespp.
Development activities	Gram SudharSabha Monasterycommittee activelyparticipate	Gram SudharSabha Monasterycommittee activelyparticipate.
Livelihoodactivities	NA	NA
Illegal Activities	Encroachment	Reduced due to FD actions.Actionistakenagainstdefa ulters

Sub-Committee will be involved in Forestry plantations, soil conservation works, maintenance, and fire protection works.Trainingformaintainingaccountsand recordswould begivenby project**.**

5.2.14 ForestProtectionPractices*(AsPer PRAPractice)*

Forest disturbances	**Traditionalpractices**	**Currentpractices**
Forestfire	Noforest fire	
Landslide	Nolandslide	

Flood	No flood	
Hunting	Hunting/poachingwasprevalent prior toWLPA 1972	Completely banned/controlled
Illegal activities	Hunting	Nosuchactivitynoticed
Bio-diversitycons ervation	Extto a few amchi orlocal Tibetan medicine practitioner families ineach village. This practice is decline in this area with the advent ofmodernmedicine.	Howevertheextractionfromsomeareacontinuesthese day , much of which appears to be commericialfor serving outside markets. Arnbia or rattanjotis themostimpotantcollection(50%)followedbycodonopi ssp.(18%)Gentianasp.(9%)andDactylorhizasp. Or salaam panja(5%). OutersiderPeopleextractmedicinalplantsatearly stage, resulting into extinction of many spp.due tolackofKnowledge.

- Sub-Committeewillparticipatein drystonecheckdam construction,brushwoodcheckdamsandbioengineeringworks.
- Takepart inNTFPconservationworks.

5.3 WaterResourcesDetail

Water resources	No.	Availability of water (Months)	Different uses	Current status	Maintained by whom	Problems	Opportunities
Spitiriver	01	6	Drinking Water	WaterAvailable	ByVillagers	OpenSource	AfternewconstructionavailabilityofDrinkingWaterwillbeIncreasedandApproximately18HHwill beBenefited.
Glacier water	01	6	Livestock,WildAnimal	Soil Erosion	Villagers & IPH Deptt.	Roofofwater tank needs	Check Dams

WateravailabilityfromspitiriverispresentonlyinSummers.ThenaturalSourcesaremaximumOpensources.AfternewconstructionandMaint.ofthesesources ,thesewillbemaintainedforVillagers, LivestockandWildlife also.

5.4 AgricultureResources

5.4.1 CultivableLandUsePattern

	Cultivableland	Irrigated land	Rainfedland	Cultivable wasteland	Total
Area(ha)	**15.61**	**0**	**15.61**	**14.2**	**368.6**
% Area(ha)	**3**	**0**	**3**	**3.8**	**100%**

Asperthesecondaryrecordsanareaof15.61hac.isundercultivation.Thereisnoirrigatedlandintheward.Therefore,wholecultivablelandisunderrainfed & cultivablewasteland.

5.4.2LandHoldingPattern

Category	Number ofHHs	% HHs
LandlessHHs	-	-
Absenteefarmer	-	-
Small&Marginalfarmers(1-5bigha)	**12**	**75**
Medium/ large Farmer(6- 15 Bigha)	**4**	**25**

Nolandless

75% of the farmers belong to small & marginal category25% of farmers are medium farmers.Thereare no Landless andabsenteefarmers.

5.4.3CroppingPattern

MajorCrops	No Of Farmers engaged	Irrigated/Rainfed	Unit ofYield	Average Crop Yield	District/State averageYield	% Deficit Yield	Reasons, if lowYield	PerceivedSolutions to improve cropyield
Barley	16	Rainfed	Qtl/hac	14.45	16.72 qtl/ha	2.75	Lack of irrigationNouse ofHYYLess use of FYMPoor cropmanageme nt	Provision ofirrigation Provide good qualityseeds Soil TestingNutrienta ddition accordingly
GreenPeas	16	Rainfed	Qtl/hac	65	76.6qtl/ha	11.6	Unbalanceduseoffer tilisers ShortageoflabourLo wuse ofFYMPowdery mildew disease Highseedrate Low germination	Sameas above

Potato	16	Rainfed	Qtl/hac	75	86.88 qtl/ha	11.88	Unbalanceduseof	High yieldingvarities

							fertilizers Untimely application of inputsLack of plantprotectionmeasuresDifferences infertilityof soil LowuseofFYM Local seed	

- 16HHsinthe Sub-Committeeareinvolvedin Cashcropscultivation(Barley, pea,potato,).
- Allcropsgrownunderrainfedconditions.
- Averageyieldofcrops isasper primarystakeholder'sinformation.
- Stateaverageyieldofcropsisasper secondarysource(CSKKVPalampur)website.
- Theaverageyieldofcropsgrownislesscomparedtothedistrictaveragebecausethecultivationpracticesaretotallydependentonrains.
- Villagelevel averageproduction isas pervillagers viewpoint.

5.4.4ChallengesofCultivableLand

Majorchallenges	**Currentstrategiestodealwithchallenges**	**Usefulnessofthecurrentstrategies**
Poorsoilfertility	ApplicationofFYM Applicationofchemicalfertilizers	Moderatelyuseful
Soilerosion(low	Check dams requests to govt offices	Few are made and helpfull.
Soilerosion(medium)	Check dams requests to govt offices	Moderatelyuseful
Soilerosion(severe)	Nosevere soilerosion noticed	
Low landproductivity	Applicationof FYM Application of chemical FertilizersUseofHybridseeds	Moderatelyuseful
Lowmoisture retention	Grassmulching,FYMapplication,Dripirrigation practices	

Lackofirrigation	Making little tanks to store water.	Usefull.
Other-specify		

5.5 Livestock

Resource5.5.1LivestockHoldin

gPattern

Type	**NumberofHHs involved**	**Average HH holding**	**No. of animals**	**Problems**	**Opportunities**
Cows	**16**	**3**	**60**	Thelackof cultivated fodder, useof low efficiencytoolsand harshcoldwinter makethetasks evenmoredifficult. Less milk production Lackofscientific	Potential area availableforfodder plantation Awarenesscampsby vet. Department Exposure visit to successfulareas.
yak	**16**	**1**	**30**		
Goats/Sheep	**16**	**3**	**48**		
Donkey /Mule	**16**	**1**	**20**		

				knowledge of	

				animal rearing	
Total	**16**	**8**	**158**	-	-

5.5.2ProductionofMainLivestock

Type	**Product**	**Unitofproduction**	**Averageyield/production**	**District average**	**% deficit yield**	**Reasons for lowyield/production**	
Cows	Milk	Kg	4.0 kg	**3.9**	0.1	LackofAwarenessDeficiency of NutritionStallFeeding	Livestockdevelopmentthrough breed improvement,training, management and veterinary services
Crossbreed	Milk	0	3.4	**2.4**	1.0		
Goats/Sheep			3.0	1.5	1.5	Qualityof Fodder & Grasses	

6 LivelihoodStrategies

6.1ExistingLivelihoodStrategies

Sourceoflivelihood	NumberofHH dependentas		Major constraints/challenges
	Primary source	Secondary source	
Agriculture	**16**	**0**	Problem of erosion due to serious Topographical and climatic factors and all abioticPressure Maximum area is rain fed; therefore the adoption rate of improved technologiesandinputsby thefarmers isless as comparedtoirrigated land. SmallandscatteredLandHolding offarmers Occurrenceofnaturalcalamitieslikedrought,Cloudbursts,hailstorm,heavysnowfall, storms, unusual rise in temperature are quite frequent causing losses tocrops. Squeezing of agriculture Lands because of ancestral property division.Low risk bearing capacity and poor purchasing power of the farmers.Lowproductivity ofcrops. IncreasingPopulationofstrayanimals andwildanimals.
Forestry	**16**		No forestOpeng razing

			Big pressure onpasture land,new seedlingforfodderand Fuelwood

			Encroachment
Livestock/Animal Husbandry	**16**	**0**	Shortage of feeds and Fodder during dry season.Traditionalmethodoffeeding. Scatteredandlowlandholding. Pooranimalproductivityi.e.lowmilkProduction,largenumberofnon-descripttype animal,lackof breeding bull, Poorextensionservice . Wildlifeattacks. Lackofinterest ofnewgeneration
Wagelabour	**16**		Work is noteasily available
Service/Job		**2**	ShortageofJobs,lackof quality educationor skilled
Carpenters	**2**	**-**	Its wage work dependsuponpeoplerequirement.

6. 2Livelihoods-ActivityCalendar

Seasonal Activities& Climatic events	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
Wage Labour												
Agri/Horticulture												
Grass/Fodder												
Rains												
Snow/winter												
Frost												
Irrigation												
Fuelwood												
Legends												
	FullyOccupied(fullmonth)											
	Partially Occupied											

LivelihoodActivityCalendarshowsthatvillagersarebusythroughouttheyear.However,theworkpressureduringSnowfall/winterislesscomparedto other seasons. So,thevillagersare available duringNovembertoFebruary months for Micro planning /meeting.

6.3 FoodDeficiency*(relatesto nutrition)*

Food deficiency	% HHswith fooddeficiency	Duration (Months)	Copingstrategies
Low	N A		
Medium	**N A**	-	-
High	**NA**	-	-

As suchthereisno fooddeficiency.

6.4 IncomeDeficiency

Income deficiency	% HHs with income deficiency	Duration (Months)	Copingstrategies
Low	**NA**		
Medium	**NA**		
High	**NA**		

Over all there are no income deficiencies. Drudgery load is high; man and women are busy in working in Agriculture, Animal husbandry insummersesonwhereasin winter seasonthey are involved inhandloom,handicraftpractices forsustenancelivelihood.

6.5 PotentialLivelihoodStrategies

Sourceoflivelihood	Majorconstraints/challenges	Keystrategies
Greenhouse-vegetablecultivation/nurseryraising	Purchasesaplingsfromopenmarket, Nonavailabilityofirrigationwaterinsummer	Vegetable nursery raising by interest group.Dripirrigation,glacierwaterharvesting
Handloom	Oldlooms,Marketing	SwitchfromTraditionaloldloomstoMordenhandloom
Weaving	Marketing problem	Trainingwithtools&exposure
Cutting&tailoring	Noexposureandtrainingtowomen	Trainingwithtools& exposure
CollectionofNTFP	LackofknowledgeofmoreNTFPandtheirprotection	IfProjectgivesTraining aboutitthenit willbe fruitfulforwomen.Theycanincreasetheirincome.

7. InstitutionalAnalysis

7.1 ExistingCommunityBasedOrganisation

CBOs	Age ofCBO (Year)	Formal/ Informal	Registered (Yes/No)	Objectives	Membership	Keyactivities	Credibility ofCBO	External linkages	Usefulfor the project
Sub-Committee BMC	12/10/2020	Formal	Yes	Project/Forest Objective		Participation inJICA Project	Newly Formed	Yettobees tablished	Yes
Mahila Mandal/SHG	NA								
Kisham Mnadal	NA								
YuvakMandal	NA								

All above mentioned committees/ groups would be of immense help to Project and their involvement would be helpful in implementation ofproject activities.Representatives of thesecommittees willbeincludedinBMCSub-Committeesasnominated members

7.2 Preferences for External Linkages (Government institution working under sub-committeearea)

Name ofExternalIntuition(EI)	ImportanceoftheEIs	RelationshipwithEIs	PreferencetoassociatewithEIs
GramPanchayat	Government schemes forfamilies RoadsconnectivitythroughPMGSY Generalhousemeeting	Very helpful inintroducing newschemes Villagedevelopment	**2**
ForestDepartment	Creating awareness forprotecting forests/ natural resources.	Cordial relations. Forestguard,Bo keeps on visitingvillages	**1**
Veterinary	Healthbenefitsforanimals	Notverygood relationship	**4**
Health	Basichealthfacilities Healthcampaigns	Health/Asha workers are very interactive	**5**
Education	BasicknowledgeonClimatechangeandimportanceof forests	Veryhelpful	**5**
Agriculture	Provisionof newvarieties, Awarenesscampaigns	Formal relationship withthedepartment	**4**
Horticulture	AwarenessCampsProvision of new verities of Fruit PlantsAwarenesscampaigns	Formal relationship withthe department	**4**
Jal Shakti	Very important for watersupplyandirrigation	Relationwithfitter only, needsimprov	**3**

		ement	

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8. Problem Analysis and Solutions

8.1 Analysed Problems and Scientific Solutions

S. No	Problems identified	Justificationofproblems identified	Rootcause analysis	Recommendedsolutions
1	Highcommunitypressurenearbyf onorestland	100%oftheHHsdependsupon forestlandforfuelwoodand75%forfodder.Timberisabasicneedofall households.	Depleting supply offodder and fuelwoodfromtheforestland.	Plantingfodder&grassspecies Planting fuelwood treesPlantingtimber species
2	Increasing soilerosion&moisture loss	Soilerosionisalongcontour lineSoil Erosionisofmediumgrade	Medium level soil erosion due to glaciers	Contour trenchingDry Stone check damMasonrycheckdams Check walls
3	Lackirrig ofationcoverage	100%percentcultivablelandbutscarcityofwater	Water resources includeglacial waterusedfordrinking,domesticandwildlife use	Constructionofwaterharvestingstructuresatshilapeak
4	Lowcropyield	AverageyieldofPeaandvegetables is less	Poor soil fertility Lackofinformationoncropproductiontechnology	Organizing farmers'camps IPM,INMatBMCSub-committee levelLinkages for increasedinformation,knowledge& technology

6	Low income	Around49%(19HH) of fall in poorBPL category	AllHHsaresmall&marginalfarmers Low income from	Promoting entreprnurshipSkilldevelopment Promoting income

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			agriculture &livestock Lackofemployment opportunities Lack of feasible & viable business opportunities Low level of entrepreneurship	generation activities throughSHGs/CIGs Facilitatingclusterbased micro enterprises development and marketing Upgradinghandloomand cash crop cultivation
CommunityDevelopmentNeed&Priorities				
7	Wastage of overflow of drinkingwater near resources	Water flow at the contourlineof glacier water	In absence of proper maintenanceby the community institutionsandline department	Construction/repairof waterharvesting structure/Tanks

8.2 PerceivedProblemsandSolutions

SNo	**KeyStakeholders**	**Key problemsidentified bystakeholders**	**No ofHHs and/or area affected**	**Criticalcauses ofthepro blems**	**Perceived solutions**	**Prioritization of problems**
1	**Women**	MahilaMandal,fuelandfodderavailabilityatfaroffplaces,lackof Income	16	Lack of Awareness	Formationof MM Capacitybuilding programme	FormationofMManditsregistration,IGAactivities, Handloom,cash

		Generationactivities(IGA).			s,plantingfuel,fodderspeciesifpossible.	cropspromotionPlantingfuel,fodder,timberspp., Ifpossible.
2	**Wage-labour**	Lackofwagethroughouttheyear	16	Less landholdingsLack oftraining	May begivenwagework inprojectactivitiestrainingforIGA with tools	Wage in plantationwork,Traininginropeweavingetc.carpentry,withtoolsprovision.
3	**Farmer**	1. Rain fedagriculture 2. Lack of awareness of agriculturalschemes	16	1 Lack ofirrigationfacility andless landholdings2Agriculturestaff lessvisit	Glacierwaterharvesting, awarenesscamps by Agriculturedeptt.	1. Excessusingwaterharvestingbyconstructingwaterharvestingstructure 2. Awareness camps onIntegratednutrientmanagement,Integrated pestmanagementand Agriculture deptt. Scheme etc.

4	**Landless**	**NA**				

8.3ImplementationActivities/Interventions

Important issues	Priority Rank	Specific activities as per the agreed solutions	Benefitting HHs
Participatoryforestmanagement			
Fuelwood and fodder collectionfrom far off areas.	**1**	*Rosamacrophylla(wildrose),speciesof Hippophae,Myricaria,Salixflabellaris,S. hastate,S.lindeleyana,Juniperusrecurva, Ribes orientale, R.alpestre, Loniceraspinosa (Thapp),L.obovata,L.rupicola,Capparis spinosa, Caragana brevifolia (Trama). Rhododendron lepidotum, Colutea nepalensis,Ephedragerardiana,Clematis vernayii,Cotoneastermicrophyllaetc.The scrubandspinycushionsareformedbythe speciesofCaragana,Astragalus,Artemisia, Cousinia,Saussurea,LoniceraandArnebia. Herbaceouselementisdominatedbythe speciesofAstragalus,Chesneya,Oxtropis, Cicer,Lindelophia,Allium,Rumex,Nepeta, Heracleum, Chenopodium, Artemisia, Lactuca,Gentiana,Gentianella,Hyssopus, Pedicularis, Rheum, Aquilaria, Caltha, Taraxacum,Plantagos,Aconitum,Thymus, Delphinium, Lepidium, Crepis, Mentha, Geranium,Bergenia,Senecio andMertensia*	Whole community
Lessfodder,fueltreesin village nearbyprivate area.	**1**	*Willows, Poplars, Chharma, Bhojpatra, Trama,Thapp, Sia (Wild rose) Umboo (Myricaria),Junipers,Ribesetc.*	Whole community
Soil&water conservation			

Soil erosion andlandslidenearContour line	**5**	Check walls, Check damsGabionwirestructures Bioengineeringworks.	Wholecommunity
Water pondconstruction, Bouri repair	**2**	Renovation of existing water bodies,Constructionof pond,WHS etc.	Wholecommunity
CommunityDevelopment			
MahilaMandalBhawan	**6**	ConstructionofMahilaMandalBhawan	Whole community
Livelihoodimprovement			
LackofIGA(Incomegeneration activities) forwomen and other younggenerationatsub-committeelevel	**3**	**Asindividualactivities**CuttingandTailoringtraiingneeded. **As Group activity** Handloom/ Ropeweaving,and herbstraining needed.	16 beneficiaries
Miscellaneousactivitiesforconvergence			
Foot path construction to hamlets	**7**	Betteraccessibilitytocommunities.	Whole community
Fuelwood,FodderPlants andMedicinalplants	**1**	Will supplement in day to day local requirements.	Whole community
Farming Camp	**4**	Willeducatevillagersinlatestscientific knowledgeandexchange ideas.	Whole community
Foot path construction to hamlets	**7**	Betteraccessibilitytocommunities.	Whole community

8.4 SWOTAnalysisSub-committee

Strength	Weakness
Young& energetic groups Clearvisiontoenvironment&climatechange Equal partition of all groupsGenderequality Positiveresponse Water available for IrrigationCash Crop FertiliseLand	NoSHGisformed Limitedknowledgeofthe project Lack of Awareness (Agriculture, Horticulture &Livestock) Cold Desert areaDeficiencyofFodder Lack of coordinate with line departmentLackofAwareness regardingHygiene Shortspanforwork
Opportunity	**Threats**
Willingnesstolearnandexecute Highlyqualifiedteamconnectedwithadvanced communication technologyWider networking with differentagencies&governmentdepartments.Cash Crop Organize Farming CampsWell connectedto road Highly scopeforecotourism	Community inference in decision making processTimeconstraintsduring summer Short time span due to cold desert regionGrazing

8.5 Settingthe objectivesfor Development fortheprojectduration

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ObjectivesforForestryDevelopment

- Protectionandconservationofforest Land
- Propagationforestshrubspecies
- Enhancedvegetativegrowth
- Enhancedforestcover
- Overallwatersheddevelopmentbyintroductionofmoisturereretention works, soilprotectionworks

Objectivesforvillage/communityDevelopment

- Sustainablelivelihood
- Reductionofpressureonforest resources
- Asset generation
- Convergence of various departments for overall development of the
- areaWomenempowerment

9. CommunityBasedBiodiversity ManagementPlan

9.0 Whatis Biodiversity?

Biodiversity **isthefoundationof** ecosystemservices **towhichhuman** well-being **isintimatelylinked.** No feature of Earth is more complex, dynamic, and varied than the layer of living organismsthat occupy its surfaces and its seas, and no feature is experiencing more dramatic change at thehands of humans than this extraordinary, singularly unique feature of Earth. This layer of livingorganisms—the biosphere—through the collective metabolic activities of its innumerable plants,animals,andmicrobesphysicallyandchemicallyunitestheatmosphere,geosphere,andhydrosphere into one environmental system within which millions of species, including humans,havethrived.Breathableair,potablewater,fertilesoils,productivelands,bountifulseas,theequitable climate of Earth's recent history, and other ecosystem services are manifestations of theworkingsoflife.Itfollows thatlarge-scalehumaninfluencesoverthisbiotahavetremendousimpactson humanwell-being.Italso followsthatthenatureof these impacts,goodorbad, iswithin the power ofhumans to influence.

Forest biological diversity is abroadterm thatrefers to all life forms found within forested areasandtheecologicalrolestheyperform.Inbiologicallydiverse forests,thiscomplexityallowsorganisms to adapt to continually changing environmental conditions and to maintain ecosystemfunctions.

Forests are critical habitats for biodiversity and they are also essential for the provision of a widerange of ecosystem services that are important to human well-being. There is increasing evidencethat biodiversity contributesto forest ecosystemfunctioningandtheprovisionofecosystemservices.

9.1 WhatisCommunityBasedBiodiversityManagement (CBM)?

Community-based biodiversity management (CBM) is a participatory approach to empower localstakeholders as well as the local institutions for managing biodiversity for social, economic, andenvironmental benefits to communities as well as to the general public. This approach, usuallydeveloped by the in-situ conservation approaches and it is focused on community level issues,enhancing the capacity of communities to analyze livelihood assets, problems, and to seek andimplement solutions with respect to use and conservation of genetic resources of local biodiversity.It recognizes and supports local institutions and communities as legitimate and crucial actors in thenationalplantgeneticresourcesystem,anditsroleinthewidercontextofbiodiversityanddevelopment. Communities are empowered to exercise their rights and secure access and controlovertheirgeneticresources.Theapproachiscommunity-centered,strengthenslocaldecisionmaking process and emphasizes local governance in the conservation and utilization of communitybiodiversity resources.

Documenting spatial patterns in biodiversity **is difficult because taxonomic, functional, trophic,genetic,andotherdimensionsofbiodiversityhavebeenrelativelypoorlyquantified.**

Evenknowledge of taxonomic diversity, the best known dimension of biodiversity, is incomplete andstrongly biased toward the species level, mega-fauna, temperate systems, and components used bypeople.Thisresultsinsignificantgapsinknowledge,especiallyregardingthestatusoftropical/temperate systems, marine and freshwater biota, plants, invertebrates, microorganisms,and subterranean biota. For these reasons, estimates of the total number of species on Earth rangefrom 5 million to 30 million. Irrespective of actual global species richness, however, it is clear thatthe 1.7–2 million species that have been formally identified represent only a small portion of totalspeciesrichness. More-completebioticinventoriesarebadlyneeded tocorrectforthisdeficiency.

9.2 CommunitybasedBiodiversityManagement Plan(CBMP)

CommunitybasedBiodiversityManagementPlanisadecentralisedprocesswherethelocalcommunity is in the centre stage that monitors the resources around it, its use and plans for itssustainabilityfor longterm benefitsforall succeeding generations.

Thus communitybasedbiodiversitymanagementplan hastwofacets asmentionedbelow:

- Communitybasedbiodiversity monitoring
- Communitybasedbiodiversitymanagementplanning

9.2.1 CommunitybasedBiodiversityMonitoring

Qualitative biodiversitymonitoring:

Communitybasedbiodiversitymonitoringcanbeundertakenthroughbothqualitativeandquantitative approaches. Qualitative monitoring simply depicts the community perceptions on theavailability of resources and its use over a said time period. It is cost-effective and should be usedforsubstantiatingmore affirmativeapproachesof biodiversitymonitoring.

So far, under the PIHPFEM&L project intervening geographies, Himachal Pradesh State BiodiversityBoard has undertaken the application of Peoples Biodiversity Register Exercises in selected 120GramPanchayats[1].The People'sBiodiversityRegister (PBR)isadesignedtoolfortheformalmaintenanceofthelocalknowledgewithpropervalidation.PBRisarec ordofknowledge,perception and attitude of people about natural resources, plants and animals, their utilization andconservation in a village or a Panchayat. PBR is also proposed as a mechanism to create awarenessamong the people about the condition of plants and animals and their conservation and sustainableutilization. This mechanism can bring the people to participate in development planning whichwouldbeecologically sustainable andsocially justifiable.

People'sBiodiversityRegisterisatoolforcollectinganddocumentingbiodiversitydata.Localcommunities need to be encouraged and trained to be the principal participants in this process.Whencommunitiesmaintaintheirregisters,itwillfostergreaterconservationofthisnatural

[1] *PreparatorySurveyonHimachalPradeshForestEcosystemsManagementandLivelihoodProjectinIndia,DraftFinalReport,February,2018.*

resource base. Despite the provisions within the Biological Diversity Act, 2002, which grants duerightstocommunities,ithasnotbeen fullytranslatedintopractice.

Further analysis ofPBRspreparedinHimachalPradeshhasfollowingdeficiencies:

- Most ofthePBRsarenot completedfortheprojectareas ofPIHPFEM&L
- Whatsoeverpreparedarestillindraftstageanditwouldtakeatleastmorethan6monthsto get completed.
- InmostofthePBRs, thespecies recorded arefoundwith "Nothreats"togreaterextents
- Some formats areunfilled eitherfullyor partially
- Someformatsarevaguelyorbroadlyfilledupanddoesnotsatisfythespecificneedoftheformatsit is meantfor
- ThoughmanyspeciesareoccurringinthetargetedGramPanchayats,manymorespeciesareleft andnot includedin thePBRs
- NoparticipatoryprocessesareadoptedduringpreparationofPBRsanditisfoundtobetheresponse record ofsomeindividuals,notcommunity*per se*
- Somespeciesarerecordedas"rare"or"declining".Butfieldleveldialoguesonthebiodiversityrevea ls otherwise.

Thusitisequallypertinenttoquantifythelocalforestbiodiversitythroughasimple,scientificand participatory manner to substantiate the qualitative indicators on local forest biodiversity.This is done through the Participatory Vegetation Monitoring where the villagers collect simplequantifiable figures forbetter decisionmakinginforestbiodiversity management.

Quantitativebiodiversitymonitoring:Participatory ForestMonitoring

Participatory forest monitoring (PFM) is an ongoing process where local forest users systematicallyrecord information abouttheir forest, reflect on it and take management action in response towhattheylearn.ParticipatoryForestMonitoring(PFM)forcommunitybasedForestManagement

supports the Village Forest Development Committees (VFDCs) in Himachal Pradesh for planning andmanagingtheirforests.ThePFMwasplannedtodevelopparticipatorymonitoringofforestresources at local community level which envisages involving local institutions (VFDCs) and otherstakeholder groups such as HPFD[2] staffs, Project staffs[3], NGO[4]s if any, youth clubs, Eco Clubs etc inidentification of resources, planning for utilization and regeneration of resources, and adaptivemanagementofforests.ThebasicobjectivesofPFMistodeveloppeoplecentricmonitoringsyste m, in which local people should have better understanding of resources around, followed byassessingthe status and planningforsustainable useofthem**.**

ProcessofParticipatoryForestMonitoring:

PreparationofResourceMap:

SinceBiodiversitymonitoringisasegmentofMicroplanpreparedthroughparticipatoryruralappraisalwhi chalsointegratedthesocialandresourcemapping.Theresourcemappingalsoincludedtheforestmapping withnomenclaturesofdifferentzoneswithincommunityforests.These forest patches act as different strata for sampling. Sampling of forest vegetation was donethroughsampleplotsof differenttypesofplantforms.

Samplingofforestvegetation:

Ecological data collection of PFM is basically to understand the change in vegetation status due toprotection and management of the forests by the community. The various parameters that can beaddressedarestandingbiomass,biomassgrowthrates,harvestabletimbervolume,speciesdiversity,sp eciesdensity,regenerationstatusofherb,shrubandtreespecies,andlevelofdisturbancebyway ofillegal felling,pestand diseases and survival rates.

[2] *HimachalPradeshForestDepartment*

[3]*ProjectforImprovement ofHimachalPradeshForestEcosystemsManagement& Livelihoods(JICAsupported)*

[4]*NonGovernmentOrganisations*

Shrubs: Shrub plots include perennial shrub species but with height above 1.5 m. Shrub plots arenormallysmallerinsizethantreeplots,butthenumbercouldbeatleastdoublethatoftreeplotsto account for the likely heterogeneity of shrubs and younger trees. Shrub plots are located insidethe tree plots, at the rate of two per tree plot. Shrub plot number can be two per tree quadrat andthesizecanbe5 m X 5m.

Herbsandgrass: Annualherbsespeciallyofmedicinalpropertyandgrassbiomassproductioncanbe estimated by laying quadrats. Normally, herb layer plots will be of size 1 X 1 m and the number isat least double that of shrub plots. Parameters to be recorded include; species name, number ofplants and number of herbs / grasses destroyed or disturbed due to natural and anthropogenicreasons.

9.2.2 DataonqualitativeandquantitativedataonCommunitybasedBiodiversityMonitoringwithinSumling BMC Sub-Committeezone

Qualitativedata

Based on the PBR information following status on flora and fauna could be traced. These statuses offloraandfauna arementionedinfollowingtable–9.2.2below:

Table–9.2.2: Issues identifiedbasedon PeoplesBiodiversityRegister[5]

Sl No	Majoritem	Sub-items	Nameoftheitemwith scientificnames	Issues
	Agro-biodiversity	**Agriculture (Cropdiversity)**	Barley	Present
			Pea	Present
			Potato	Present
	Wildbiodiversity	**Trees,shrubs,herbs,climbers,tubers, grasses etc**		
			Abelia triflora	Present
			Loniceraangustifolia	Present
			Andrachnecordifolia	Present
			Loniceraasperifolia	Present
			Astragaluscandollianus	Present
			Lonicerabracteata	Present
			Astragalusrhizanthus	Present
			Loniceradiscolor *Berberisaristata*	Present

[5]SUB-STATESITEBIODIVERSITYSTRATEGYANDACTIONPLAN(LAHAUL&SPITIANDKINNAUR)TRIBALDEVELOPMENT DEPARTMENT, H.P. SECRETARIAT, SHIMLA-2 & STATE COUNCIL FOR SCIENCE TECHNOLOGY ANDENVIRONMENT, 34 SDACOMPLEX, KASUMPTI,SHIMLA–9

			Loniceragovaniana	Present
			Berberisceratophylla	Present
			Loniceraheterophylla	Present
			Berberis chitria	Present
			Lonicerahispida	Present
			Berberis concinna	Present
			Lonicerahypoleuca	Present
			Berberis jaeschkeana	Present
			Lonicera myrtillus	Present
			Berberiskunawurensis	Present
			Loniceraobovata	Present
			Berberis lycium	Present
			Liniceraparvifolia	Present
			Berberispachyacantha	Present
			Lonicieraquinquelocularis	Present
			Berberispetiolaris	Present
			Lonicieraspinosa	Present
			Berberisumbellata	Present
			Lonicierawebbiana	Present
			Bosiaamherstiana	Present
			Myricariaelegana	Present
			Buddleiapaniculata	Present
			Myricariagermanica	Present
			Capparishimalyensis	Present
			Myrsineafricana	Present
			Capparisspinosa	Present
			Osbeckiastellata	Present
			Caraganabrevispina	Present
			Periplocacalophylla	Present

			Caraganagerardiana	Present
			Plectranthusrugosus	Present
			Caraganaversicolor	Present
			Potentillafruticosa	Present
				Present
			Colutea multiflora	Present
			Prinsepiautilis	Present
			Coluteanepalensis	Present
			Prunusjacquemontii	Present
			Cotneasteracuminata	Present
			Rhamnuaprostrata	Present
			Cotneaster rosea	Present
			Rhamnuspurpurens	Present
			Cotneasterthamsoni	Present
			Rhamnustriqueter	Present
			Cotoneasterbacillaris	Present
			Rhamnusvirgatus	Present
			Cotoneasterduthieanus	Present
			Rhododendronanthopogon	Present
			Cotoneasterfalconeri	Present
			Rhododendron campanulatum	Present
			Cotoneastergilgitensis	Present
			Rhododendronlepidotum	Present
			Cotoneastermicrophylla	Present
			Rhuscotinus	Present
			Cotoneasternummularia	Present
			Rhuspunjabensis	Present
			Cotoneasterobovatus	Present

			Ribesglaciale	Present
			otoneasterobtusus	Present
			Ribesgrassularia	Present
			Cotoneasterpruinosus	Present
			Ribesnigrum	Present
			Crataegussonarica	Present
			Ribesorientale	Present
			Daphnemucronata	Present
			Ribes ribrum	Present
			Desmodiumconcinum	Present
			Rosabrunonii	Present
			Desmodiumfloribundum	Present
			Rosaeglanteria	Present
			Desmodiumnatans	Present
			Rosamacrophlla	Present
			Desmodiumoxphyllum	Present
			Rosaminor	Present
			Desmodiumpodocarpum	Present
			Rosawebbiana	Present
			Desmodiumpseudo–triquestrum	Present
			Rubusbiflorus	Present
			Desmodium tilaefolium	Present
			Rubusbiflorus	Present
			Deutziacorymbosa	Present
			Rubusellipticus	Present
			Deutziastaminea	Present
			Rubuslasiocarpus	Present
			Elaeagnusparfiflora	Present

			Rubuspurpureus	Present
			Elaeagnusumbellata	Present
			Sabiacampanula	Present
			Elsholziapolystachya	Present
			Salixhastata	Present
			Ephedragerardiana	Present
			Salixlindleyana	Present
			Euonymusechinatus	Present
			Salixoxycarpa	Present
			Euonymusfimbriatus	Present
			Salixpycnostachya	Present
			Euonymusmonbeigii	Present
			Skimmialaureola	Present
			Euonymustingens	Present
			Sorbariatementosa	Present
			Ficus foveolata	Present
			Sorbusaccupania	Present
			Gaultheriatrichophylla	Present
			Sorbuslanata	Present
			Hamiltoniasuaveolens	Present
			Sorbusursina	Present
			Hippophaerhamnoides	Present
			Spireacanescens	Present
			Hippopaesalicifolia	Present
			Spireasorbiflolia	Present
			Hippopaetibetana	Present
			Staphyleaemodi	Present
			Hydroangea anomala	Present
			Strobilanthesalatus	Present

			Hypericumcernuum	Present
			Strobilanthes atropurpurens	Present
			Hypericumpatulum	Present
			Strobilanthesdalhousianus	Present
			Incarvilleaarguta	Present
			Strobilanthesglutinosus	Present
			Indigoferagerardiana	Present
			Strobilantheswallichii	Present
			Indigoferaheterantha	Present
			Symplocoscrataegoides	Present
			Inulacappa	Present
			Syringaemodi	Present
			Inulacuspidata	Present
			Tamaricariaelegans	Present
			Jasminumhumile	Present
			Verbascumtraipses	Present
			Jasminumofficinale	Present
			Viburnumcotinifolium	Present
			Juniperuspseudo-sabina	Present
			Viburnumnervosum	Present
			Juniperusrecurva	Present
			Viburnumstellulatum	Present
			.Leptodermislanceolata	Present
			Viscumalbum(Epiphyteon trees)	Present
			Lespedezaeriocarpa	Present
			Wickstromia canescens	Present
			Loniceraalpigen	Present
	Medicinal	**Medicinal**		

		Plants		
			Allium carolinianum	Present
			A. jaquemontii	Present
			Arnebia euchroma	Present
			Achillea millefolium	Present
			Artemisia brevifolia	Present
			Bergenia stracheyi	Present
			Betula jaquemontii	Present
			Carumcarvi	Present
			Corydalis govaniana	Present
			Dactylorrhiza hatagirea	Present
			Ephedra gerardiana	Present
			Gentiana Kurroo	Present
			Gentanella moorcroftiana	Present
			Colchicumluteum	Present
			Hyoscyamusniger	Present
			Heracleum condicans	Present

			Hyssopus officinalis	Present
			Juniperus communis	Present
			Juniperus macropoda	Present
			Malva rotundifolia	Present
			Onoma hipidum	Present
			Taraxacum officinale	Present
	Wildanimals	**Mammals, birds,reptiles,amphibian,insects, others)**		
			Ibex(Capraibex siberica)	Present
			Snow Leopard (Pantheraunica)	Present
			Himalayan Blue Sheep(Pseudois nahyaur)	Present
			Tibetian Wolf (Cannislapus)	Present
			Red Fox(Vulpus valpus)	Present
			Wooly Hare	Present

			HimalayanChough(Phyrhocorax gracumus)	Present
	Birds		*Snow Pigeon (Columbia rupestris)*	Present
			Snow cock (Tetragallus himalyensis)	Present
			Vulture (Nephron persnopterus)	Present
			Ducks (Avthva ferina)	Present
			Murgabi (Anas crecca)	Present
			Himalayancrow (Corvus tibeteana)	Present
			Picca(Ochotona rovlei)	Present
			Raven (Corvus corax)	Present
			Golden Eagle (Aquila chrysaetos)	Present
			Griffan (Gyps himalayansis)	Present
			Red Start	Present

			(Phoenicurus orchruros)	
			HoopeChakor(Alpalectoris chakor)	Present
			DoveHimalayan Finches(Cardueliscardduelis)	Present

9.2.3 ResultsonqualitativeandquantitativedataonCommunitybasedBiodiversityMonitoringwithinSumling BMC Sub-Committeezone

Qualitativedata

Analysis of the PBR and corresponding above table reveals that there are 3 majorAgriculture croptypes namely Pea, Barley, andPotato ofplants needs conservation attention.Other then it, 149wildplantsbiodiversityincludetheShrubs,herbs,climber,tuber,andgrassesarerecordedsimilarly, there are 7 species of wild animal and 13 species of birds are present within BMC Sub-Committee areas.

Thesemanagementscopesontheseplantsandanimalsdiscussedwiththevillagersincluding BMC sub-committee members, women members (who are the prime forest users) andpublic in general for their perception and options on their improvement of the populations. Theidentifiedscopes of population increasehavebeen describedintable–9.2.2 below.

Quantitativedata

- The patches are very lessinspeciesdiversity.

- Thedensityoftreesoftreedominanceisalsoverylessandquitelessthantheusualprescribed density
- Treesareverysparselydistributed.
- Anthropogenic pressures on trees are almost absent. This could be a fact as a result of lesserinterest of the community on the forest patches and better vigil of Himachal Pradesh ForestDepartment.
- The age-structure of the trees are very sporadic and it would ultimately loss of a standardpopulationafter some yearsdue to inadequateregeneration throughseedlings.
- Theshrub and herb species arerepresentedwellduetoopencanopy.
- Thecanopyof thevegetationrepresentspredominantlyopen category.
- Naturallyspeciesaredeficientofsuccessfulestablishmentsandhenceneedexternalsupport.

9.2.4 PlanningonCommunitybasedBiodiversityManagementwithinSumlingBMCSub-Committeezone

GapPlantationwithreferencetoParticipatoryVegetationMonitoring:

Plantationof degradedpatches with appropriates multiple treespecies:

- Plantationofmultiplespeciesisa need
- Afforestation/Enrichmentplantationunderdifferentschemesneedstobeexecutedonpriority basis. It would advisable to plant at least 500 saplings / ha model with reference todifferent landrelated casualties.
- Plantationandmaintenanceoftheplantedspeciesisabsolutelyessentialsincenaturalregeneratio nisinadequate.
- Shrub species within the tree spacing may be planted with economically important shrubspecies.

One Potential intervention area /treatment plot and soil conservation works have been identifiedduring Micro planning exercises by technical staff (FGD and feedback from Block Officer and Rangeofficer).Theactivitiestobecarriedoutstandsdiscussedwithvillagersindetailduring PRA

exercises. Theselected plantation plots /patches areeither openareas orare blank, which wouldbe planted with multipurpose trees varying from 200-500 trees per hectare. Being on the southernand southern eastern aspect species selection of plan table species, stock health, and pit size needsto be kept in mind. For soil conservation works estimate will be prepared by FTU and field staffbefore implementation.

Dataand maponinterventionAreas/Treatmentplots

Cost norms applied for calculation are as per Forest Department approved norms. Plants, pit sizesare accordingly to models prescribed and approved by Forest Department and Project guidelines.The forests have been visited by teamagain andagain and as per the site conditions treatmentplots have been prescribed. The nalla treatment, soil conservation works are applicable in this SubCommittee area. Local ghazis are quite well maintained one plot with patch sowing has also beenprescribed.Fencing part has been critically analysedkeeping inview local conditions as well asbioticpressure andaccordinglyprescribed. Total7Hac communitylandhave been identified.

Table2: Plotwisedetailsof Sub-Committee

S. No	Plot name	Plot No	Area	Latitude longitude	PFM mode	FD mode
1	**GCL Sumlingdham**	**1**	7	32º 17’54” 77 º58’41”	**Yes**	**---**

<u>BiodiversityManagementwithreferencetoPeoples’BiodiversityRegister(PBR):</u>

The vulnerable species as identified under the PBR Exercises were discussed with the BMC Sub-Committee members and possible management strategies were explored. (Reference: ***SUB-STATESITEBIODIVERSITYSTRATEGYANDACTIONPLAN(LAHAUL&SPITIANDKINNAUR)TRIBALDEVELOPMENTDEPARTMENT,H.P.SECRETARIAT,SHIMLA-2&STATECOUNCILFORSCIENCETECHNOLOGYANDENVIRONMENT,34SDACOMPLEX, KASUMPTI, SHIMLA–9)***

S. No.	Categories	Nameoftheitemwith scientificnames	Status asper PBR	Management prescribedby theBMC Sub-Committee members
	Agriculture (Cropdiversity)	Pea	Present	Provisioning ofseeds fromgovernment sources
		Barley	Present	Provisioning ofseeds fromgovernment sources
		Potato	Present	Provisioning ofseeds fromgovernment sources
	Horticulture	NA	NA	
	Medicinal Plants			
		*Alliumcarolinianum/*Laot, Jangli,Lahasum/ Konche,Pharna	Past – MoreNow– Less	Protection offorest patchesthroughcommunity participation

				Protection offorests from

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				forest fires Prohibition offorests fromgrazingpressures
		A. jaquemontii/ Khamet,Ratanjot	Past – MoreNow– Less	Protection offorest patchesthroughcommunity participation Protection offorests fromforest fires Prohibition offorests fromgrazingpressures
		*Arnebiaeuchroma/*Khamet, Ratanjot	Past – MoreNow– Less	Protection offorest patchesthroughcommunity participation Protection offorests fromforest fires Prohibition offorests

				from

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				grazing pressures
		Achilleamillefolium/ Gandana,Millfoil/	Past – MoreNow– Less	Protection offorest patchesthroughcommunity participation
		*Artemisiabrevifolia/*Nurcha, Seinki	Past – MoreNow– Less	Protection offorests fromforest fires
		Bergeniastracheyi/ Gatikpa, Pashandbhed	Past – MoreNow– Less	Prohibition offorests fromgrazing pressures
		*Juniperuscommunis/*Hauber,Dhuppi	Past – MoreNow– Less	Protection offorest patchesthroughcommunity participation Protection offorests fromforest fires Prohibition offorests fromgrazingpressures
		Taraxacum/Khurmang Dandelion	Past– More Now–normal	No declining is seeninthis

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				forestarea
	Trees, shrubs,herbs,climbers,tubers,grasses etc			
		Rosa macrophylla (wildrose),	Past– MoreNow– normal	Provisioning ofnurseries *In-situ* cultivation Provisioning ofwater sourcesforitspropagation
		Hippophae	Past– MoreNow– normal	Provisioning ofnurseries
		Myricaria	Past– More Now–Less	*In-situ* cultivation
		Salixflabellaris	Past – MoreNow– Less	Provisioning ofnurseries
		Juniperusrecurva	Past – MoreNow– Less	Provisioning ofwater sourcesforits propagation

		Ribesorientale	Past – MoreNow– Less	Provisioning ofwater sourcesforits propagation

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		Coluteanepalensis	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation
		Ephedragerardiana	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation
		Cotoneastermicrophylla	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation Provisioning ofwater sourcesforitspropagation
		Caragana brevifolia(Trama).	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation Provisioning ofwater sourcesforitspropagation
		Caragana	Past – MoreNow– Less	Provisioning ofnurseries *In-situ*

				cultivation Provisioning ofwater sourcesforitspropagation
		Astragalus,	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation
		Artemisia	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation Provisioning ofwater sourcesforitspropagation
		Cousinia	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation
		Hyoscyamusniger	Past – MoreNow– Less	Provisioning ofnurseries *In-situ* cultivation Provisioning ofwater sources

				forits propagation
	Mammals,birds, reptiles,amphibian,insects, others)			
		Ibex(Capraibexs iberica)	Past – PlentyNow– Rare	Preventionof hunting Strongcommunityparticipationin protection
		Snow Leopard (Pantheraunica)	Past – PlentyNow– Plenty	Prevention ofhunting
		Himalayan Blue Sheep(Pseudoisnahyaur)	Past – PlentyNow– Plenty	Strongprotectionrequired in thewild
		Tibetian Wolf (Cannislapus)	Past – PlentyNow– Rare	Strongcommunityparticipationin protection
		Red Fox (Vulpusvalpus)	*Past – PlentyNow– Rare*	Prevention ofhunting
		Wooly Hare	*Past–Plenty Now–Rare*	Strong protection

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				requiredin thewild
		HimalayanChough(Phyrhocorax gracumus)	*Past – PlentyNow– Rare*	Strongcommunityparticipationin protection
	Birds	*Snow Pigeon (Columbia rupestris)*	*Past – PlentyNow– Plenty*	Protectionin the wild isrequired
		Snow cock (Tetragallus himalyensis)	*Past – PlentyNow– Plenty*	Protectionin the wild isrequired
		Vulture(Nephron persnopterus)	*Past–Plenty*	Protectionin the wild isrequired
		Ducks (Avthva ferina)	*Now–Rare*	Protectionin the wild isrequired
		Murgabi (Anas crecca)	*Past–Plenty*	Protectionin the wild isrequired
		Himalayancrow (Corvustibeteana)	*Past – PlentyNow– Plenty*	Protectionin the wild isrequired
		Picca (Ochotonarovlei)	*Past – PlentyNow– Plenty*	Protectionin the wild isrequired
		Raven (Corvus corax)	Past–Plenty Now–Plenty	Protectionin thewildis

				required
		Golden Eagle (Aquilachry saetos)	Past– Plenty	Protectionin the wild isrequired
		Griffan (Gyps himalayansis)	Now– Rare	Protection inthewildis required
		Red Start (Phoenicurus orchruros)	Past– Plenty	Protectionin the wild isrequired
		Chakor(Alpa lectoris chakor)	Past– Plenty	Protection inthewildis required
		Himalayan Finches(Ca rduelis cardduelis)	Past– Plenty	Protection inthe wild isrequired

Managementstrategiesmatrix:

GapplantationthroughAR/ANR (data collectedthroughparticipatoryforest monitoring)	**Flora management withreference toPBR**	**Faunal management withreference toPBR**
Plantation of degraded landsthroughAR/ANR *Minimum:* TB Plantation @ 500 plants/haANRPlanting@ 200Plants/ha	*Agriculture:* Supply of agriculture seeds byGovernment of HimachalPradesh on: • Barley(*Hordeum vulgare*) –totalof125kg	*Wildlifeprotection:* Thoughspecies wisemanagement practices couldnot be gained from thecommunity members, broadandholistic protection

	per/Ha Pea(*PisumSativum*)total of100.58kg/ha • Potato (*Solanumtuberoru m*20kg/Ha	modalities were prescribed asbelow: • Preventionofhunting • Strong protectionrequiredi nthewild • Strong communitypartici pationinprotectio n This can be achieved throughcommunitymobilisati onandtheirparticipationinsafe guardingthe wildlife.
Desirable:	Provisioning of: • *Populus cilata* and*Juniper sp*.plantation canbe practiced • Cultivation ofSeabuckthorn, Rattan JotandJugliPyaz	

9.4ApprovalofCBMPandotheractivitiesbyGeneralHouse:-

Sanction/Approval of CBMP bytheBio-diversitySub-Committee:

General house meeting of Sub-Committee Sumling were organized in Sumling on 10th October,2021.ThemeetingwasattendedbySub-Committeemembers.(Listattachedinproceedingregister).Followingissues were discussedanddecision taken:

Micro planning team RFO WL Range Kaza, BO and Forest Guard discussed in detail the variousinterventions as incorporated in the draft CBMP of Sub-Committee Sumling Forests. Members fromhamlets (Sumling,Langcha, Komic)expressed that area near habitations as well as areas which fallwithin the grazing zone of migratory graziers needs fencing. The members were assured that thevulnerable points will be taken care of and barbed wire fencing will be recommended so that therewill be least grazing incidences in the plantation areas. Themembers assured that they will notleave their domestic cattle for grazing in open without attendant which may cause damage to theseedlings in the closed areas. Plots identified were discussed in detail and assigned to two usergroups. Inaddition, the participants suggested itemised conservation measures to be takenforeachspecies.

Work to be executed in PFM mode and in FD mode was discussed and finalized. All Plantationsplanted by Sub-Committee will be protected by Sub-Committee. Technical works, Masonry/Gabioncheck dams, water harvesting structures, will be built by FD. Bioengineering structures, Dry stoneCheckDams on smallstreams, Masonrypondsetc.will bedone by Villagers.

Pic–6: Meetingof theGeneral House on theconsensus building

9. 5MemorandumofUnderstanding(MoU):

Memorandum of understanding (English version) translated in Hindi / local language was read andexplained to all present. The issue of community contributionwas discussed in detail and thecommunitymembers suggestedtheir contributioninfollowingforms:

Pic–7: Meetingof theGeneral House on theconsensus building

- Alltheusergroupmembersagreedthattheywillcontributetheir Sub-Committeemembershipbeneficiaryshare intothe Sub-Committeeaccount.

- All members agreed for their contribution in project activities, and decided to contributemembership fee of Rs. 200. This has to be paid only once. The amount will be kept in Sub-Committee account and can be used as community share for doing any other developmentworkwithotherdepartmentsorwithproject,ifSub-Committeemembersdesireso,otherwisetheycanuseitafterprojectcompletion.Thisisimportant becausevillagersshould feel sense of ownership in works and further, they have to maintain and protectforestarea/assetsfor several yearsevenaftercompletionof project.

- The Micro Plan was finally approved by the General House of BMC Sub-Committee on dated10th. October, 2021 (Details written in proceeding register) and amended further on 12stOctober 2021.

- TheMoUwasalsosignedbythepresidentofSubCommitteeandDFOWLKazaondated12.11.2021(Signed MoUannexedas Annexure-X)

9. 6ProjectSupporttothebeneficiary(SubCommittee) forImplementation ofMicroplan

Thevillage levelorganizationwill be beneficiary of PIHPFEM&L projectfor:

- **Financialsupport**
- **Implementationofthe approvedmicro-plan**
- **Labourwages**forFencing,pitdigging,carriages,planting,weeding,mulchingofplantsexcludingth e communitycontribution.
- **Otherworks**asperapprovedmicroplan(*ALLWAGESARETOBEPAIDBYTHESub-Committeeby CHEQUEORBY BANKTRANSFER.NO CASH TRANSACTIONSPERMITTED).*
- **CDAs:** The Community Development Activities as identified by the Sub-Committee and inconformitywiththeProjectguidelineswillbedecidedandimplementedbytheSub-Committeethroughaconsultativeprocess.
- **Maintenance:**
  Beatingupoperations,weedingmulchinginMPplantationsforyears.Maintenanceoffencefor5 years.
- **Stock andmaterial:**
  Stock:qualitynurseryraisedplants
  Materiale.g.B.wire, U.nails,fenceposts, Tar/blackJapanetc.

- **StationaryofSubCommittee**

  Stationary to Sub-Committee, including stamps, stamppad,two registers, receipt book,carbon papers, paper pin, resolution pads, pen, pencil, Darrie, chairs, table, Almirah etc. torunthe officeeffectively.

9.7 PlantationActivitiesIdentified:

Sr.NO	Activity	BenefitingHHs	Areatobecovered(Ha)						
				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
1(a)	**ANR with gap planting (Fuel and FodderPlantation@200 tall plants/ha Tall block plantation @500 tall – plants/hasuch as**Introduction of *Populus cilaita*suitable grasses and legumes in CommandAreas for improving soil fertility *Geranium,AconogonumCaraganaLoniceraSalixHippophae,GentianaArnebia,Pedicularis Arnebia euchroma,Gentiana Caragana brevifolia,Loniceraspinosa,Salix,Hippophae tibetana*inprojectcommandareasandprivatelands.	16		7					
	TOTAL	**16**		**7(Ha)**					

9.7.1 RequirementofPlantingMaterials

Year	NumberofSampling Required(NewPlantation)										
	Geraniumsp.	Cicer Sp.	Aconogonumsp.	Caraganasp.	LoniceraSp.	Salix Sp.	HippophaeSp.	GentianaSp.	Arnebia Sp.	*Populus cilaita*.	Source of Planting Material
2022-23	2600	1300	900	880	1400	1180	760	780	780	780	nursery
Total	2600	1300	900	880	1400	1180	760	780	780	780	
Year	NumberofSamplingRequired(Maintenance)										
											Source of Planting Material
2023-24	0	0	0	0	0	0	0	0	0	0	nursery
2024-25	780	280	270	264	420	354	228	234	234	234	
2025-26	520	260	180	176	280	236	152	156	152	152	
2026-27	280	195	135	132	210	177	114	117	114	114	
2027-28	260	130	90	88	140	118	76	78	76	76	
Total	2210	1105	765	748	1190	1003	646	663	576	576	

9.7.2 ForestProtection/Silviculture/MaintenanceoperationforthePlantation

Years	Activitiestobetaken upSite/ModelWise		Responsibility	
	Sumling		Project	Sub-Committee
2022-23	ANR Planting @200Plants/Ha.	TB Planting Fuel,Fodder andWild Fruit Plantation @500NormalPlants	Yes	Yes
2024-25	Maint.	Maint.	Yes	Yes
2025-26	Maint.	Maint.	Yes	Yes
2026-27	Maint.	Maint.	Yes	Yes
2027-28	Maint.	Maint.	Yes	Yes

9.7.3 PlantationActivityunder PFMMode

Years	Activitiestobetaken upSite/ModelWise		Responsibility	
	Sumling		Project	Sub-Committee
2022-23	ANR Planting @200Plants/Ha.	TB Planting Fuel,Fodder andmedicinalplants Plantation @500 NormalPlants	Yes	Yes
2023-24	Maint.	Maint.	Yes	Yes
2024-25	Maint.	Maint.	Yes	Yes
2025-26	Maint.	Maint.	Yes	Yes
2026-27	Maint.	Maint.	Yes	Yes
2027-28	Maint.	Maint.	Yes	Yes

9.8 SoilandWater Conservation

9.8.1 SoilandWaterConservationWorks(Proposed)

S No	Land	TypeofSWC work	Nameofthe site	Unitof work	Quantum ofwork	HHs beneficiaries	Responsibility		
							Project	Sub-Committee	Convergence
1	Sumlingwardcommunity Land/forest land	Dry StoneC/ dams	River dam	No.	8	16	Yes	Yes	
			Glacial peak contour	No.	9	16	Yes	Yes	
			Sumling villagec ontour	No.	8	**16**	Yes	Yes	

9.8.2 (B) SoilandWaterConservationworks(YearwisePhysicalTarget)

S No.	Land	Type of SWC work	Nameofthe site	Unitof work	Quantum ofwork	HHs beneficiaries	Physicaltargetfor SWCactivities						
							2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
1	**Sanctuary Area**	DryStone C/dams	River da	No	8	20	0	4	4	0	0	0	0
			Glacial peak contour	No	9	8	0	5	4	0	0	0	0
			Sumling village contour	No	8	---	0	4	4	0	0	0	0

9.9PhysicalandFinancial Plan (CBMP)

9.9.1 ProposedPhysicalandFinancialPlan

S. No	Proposedactivities	Unit	Total		2022-23		2023-24		2024-25		2025-26		2026-27		2027-28	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1																
a)	TBplanting@500normalplants	Ha	6	335181	6	335181	0	0	0	0	0	0	0	0	0	0
b)	ANRPlanting200plants /Ha)	Ha	1	30725	1	30725	0	0	0	0	0	0	0	0	0	0
A	**Total(NewPlantation)**		**7**	**366006**	**0**	**366006**		**0**	**0**	**0**		**0**		**0**		**0**
2																
a)	TBPlanting@ 500normalplants			Maintenance												
i)	1st.YearMaint.(6250/Ha.)	Ha	6	37500	0	0	6	37500	0	0	0	0	0	0	0	0
ii)	2nd.YearMaint.(4250/Ha.)	Ha	6	25500	0	0	0	0	6	25500	0	0	0	0	0	0
iii)	3rd.YearMaint.(3200/Ha.)	Ha	6	19200	0	0	0	0	0	0	6	19200	0	0	0	0
iv)	4th.YearMaint.(2200/Ha.)	Ha	6	13200	0	0	0	0	0	0	0	0	6	13200	0	0

v)	5th.Year Maint.(2200/Ha.)	Ha	6	13200	0	0	0	0	0	0	0	0	0	0	6	13200
	SubTotal			**474606**	**0**	**366006**	**0**	**37500**	**0**	**25500**	**0**	**19200**	**0**	**0**	**0**	**13200**
S. No	**Proposedactivities**	**Unit**	**Total**		**2022-23**		**2023-24**		**2024-25**		**2025-26**		**2026-27**		**2027-28**	
			Phy	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**
c)	**ANRplanting200plants/Ha)**			**Maintenance**												
i)	1st. Year Maint.(4600/Ha.)	Ha	1	4600	0	0	1	4600	0	0	0	0	0	0	0	0
ii)	2nd.YearMaint.(3100/Ha.)	Ha	1	3100	0	0	0	0	1	3100	0	0	0	0	0	0
iii)	3rd.YearMaint.(2400/Ha.)	Ha	1	2400	0	0	0	0	0	0	1	2400	0	0	0	0
iv)	4th.YearMaint.(1650/Ha.)	Ha	1	1650	0	0	0	0	0	0	0	0	1	1650	0	0
v)	5th.YearMaint. (1650/Ha.)	Ha	1	1650	0	0	0	0	0	0	0	0	0	0	1	1650
	SubTotal			**13400**	**0**	**0**	**0**	**4600**	**0**	**3100**	**0**	**2400**	**0**	**1650**	**0**	**1650**
B	**Total(Maintenance)**			**488006**		**366006**		**42100**		**28600**		**21600**		**14850**		**14850**
S. No	**Proposedactivities**	**Unit**	**Total**		**2022-23**		**2023-24**		**2024-25**		**2025-26**		**19800**			
			Phy	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**
4	**SMCTrenching**															

a)	SMC works(Preparationofstaggered GradonialTrenches1mx0.3mx0.3m)500trenches/Ha @ 12375 /Ha	Ha	**6**	**74250**	**6**	**74250**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
D	**TotalSMC**			**74250**		**74250**		**0**		**0**		**0**		**0**		**0**
	Total(A+B+C+D)			**562256**		**440256**		**42100**		**28600**		**21600**		**14850**		**14850**
S. No	**Proposedactivities**	**Unit**	**Total**		**2022-23**		**2023-24**		**2024-25**		**2025-26**		**2026-27**		**2027-28**	
			Phy	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**	**Phy**	**Fin**
5																
a)	**Soil & WaterConservation(CBMP)** Drystonecheckdams	No.	5	100000	0	0	5	100000	0	0	0	0	0	0	0	0
E	**Total(S&WC)**			**100000**		**0**		**100000**		**0**		**0**		**0**		**0**
6	**WildLife Habitat Improvement**															
a)	Cons.Of WaterPond	No.	6	180000	2	60000	2	60000	2	60000	0	0	0	0	0	0
b)	Maint.OfWater Pond	No.	4	40000	0	0	2	20000	2	20000	0	0	0	0	0	0
F	**Total(Wildlife Habitat Improvement**			**220000**		**60000**		**80000**		**80000**		**0**		**0**		**0**
	GrandTotal(A+B+C+D+E+F)			**882256**		**500256**		**235900**		**108600**		**21600**		**21600**		**21600**

9.9.2 AnnualWorkPlanCBMPForThe2020-21year wise

ProposedActivity	Benefitting HH	Unit ofWork	Quantum OfWork	Unit cost(Rs)	Proposed Budget	FinancialSource		
						Project	Convergence	Comm. Contribution
TBPlanting@500 normal Plants	16	Ha	6	55863	335181	Project		Management
ANR Planting@200 Plants	16	Ha	1	30725	30725	Project		Management
Sub-Total					366006			
Soil&Water Conservation								
DryStone Checkwall	12	No	1	20000	20000			
Sub-Total					20000			
Habitat Improvement								
Construction Of WaterPonds		No	2	30000	60000			
Sub-Total					60000			
Total					**446006**			

10 CommunityDevelopmentandLivelihoodImprovementPlan(CD&LIP)

Table 10.1-CommunityDevelopmentActivities

S. No	Activity	Purposeof theactivity	HHs to be benefitted	Community contribution(%)
1	Glacial water harvesting structure	Only relayonthis watersource	Wholecommunity	10%
2	Glacial Pond foragriculture	Duetoclimatechange,scarcity like situation insummerseason	Whole community	10%
3	Solar installation	Lackofproper supplyofelectricity	Whole community	10%
4	Solidfencingalongwithsolar fencing	Animal like yak, cow use to enterthecropfieldandresultsindestructionofcrop,whilesolarfencingisneededtopreventinfluxofanimalsuchasblue sheep,hare ,goatandsheep.	WholeCommunity	10%

5	Groundwaterhandpump	Mustbeinstalled,mostlytheygetglacialwaterinparticularseason,watercrisiscanbeovercomebyhandpumpin summer season	WholeCommunity	10%

Table 10.2-LivelihoodImprovementActivities&Plan

S. No	Activity	Purposeof theactivity	HHstobebenefitted	Communitycontribution(%)
1	Threemonthsearlyvariety seede.g.Pea	Oftentheyfaceclimatefluctuation; most of the cropgetssparedleadstohuge economic loss.	16	10%
2	CarpetMaking,yakwool rope making	Inwinteroutdooractivitiesareaboutnull,theywantsustained winterseasonin makingsuchitemshelpingin	16	10%

		boosting livelihood		
3	Introduce Koda(*Fagopyrumesculentum*)	Lackwater,toavoidsoildegenerationduetomonoculture,withnutrition value	16	10%
4	Modifiedpolyhouse	Foroffseasonvegetable,oldstructurepolyhousesarenot durable	16	10%

UnderCommunityDevelopmentworks

Activities

1. **Glacial water harvesting structure:** As the whole population of this particular planning site/ ward have only one source of water i.eglacial water, which they use for domestic purposes, drinking, irrigation, cattle uses etc. And most importantly this source do notstay for every season .Often they face water crisis and they lack other sources as well in Sumling village. So glacial water harvestingstructurewoulddefinitelyhelpineradicationofthis primary issue.

Table 10.3- Showingestimated amountfor water tank

S.no.	Particulars of work	Length	Breadth	Depth	Volume	Rate Rs.	Amount Rs.
	Tank	10	10	10	$1000ft^3$ 28000/lit	8Rs /Lit	224000/-
	Numberoftank 3						224000x3= 672,000/-
	20% hikein totalamount forcarriageofrawmaterialincolddesert area						
	Thisconstructionwork can bedoneunder theMGNREGA						

2. **Glacial Pond for Agriculture:** The climate change has definitely made the fast melting of glaciers, in summers they get sufficientwater for their agricultural activities along with their domestic activities but later in other season it gets worst to have water .So theparticularpond foragricultureuseinthisward isneeded.

Table10.4-Summaryofestimatetoconstructpond.

S.no.	Particulars ofwork	No.	Length	Breadth	Depth	Volume	Rate Rs.	Amount Rs.
	Pond	1	20m	20m	1m	$400m^3$ 4laclit	8Rs/lit	32Lac
	20% hikein totalamount forcarriageofrawmaterialincolddesert area							
	Theconstruction of pond canalsobedoneunder theMGNEGAand withhelpof AgricultureDepartmentunderirrigationschemewithsubsidy							

SolarInstallation: Asweknowthepresentwardissituatedontheheightof3700mThewarddonothavepropersupplyofelectricity ,whichmakesthebarrierfortheworkinghabitsofpeopleincludingtheiroutdooractivities,childreneducation,peopleworkinginfields etc. Solar installation can be the immediate solution of the irregular power supply. People opting for grid connected rooftop solarpanels/powerplantarebeinggiven70percentsubsidy,andsurpluspowerwouldbefurthersoldtoHPSEBLattherateofrupeesfiveperunit,w hichwouldalsoaddtotheincomeoftheindividual,besidesusingfreesolarpower.

Solid fencing along with solar fencing: The farmers of this village claimed that mostly the yak and cows use to enter the fields andresultsin destruction ofcropswhilesolarfencingis needed to preventinflux of animalsuchasbluesheep,hare, goatandsheep.

Table10.5-Showingestimateforinstalling fencing

S.No.	Particularsof work/ Models	Protected Area/acre	Perimeter for fencing/ meter	Unit Cost/Rs	Cost per Running meter/Rs
	Model1	1	300	161907/-	540
	Model2	2.5	500	210793/-	422
	Model3	5	700	259679/-	371
	Model4	10	1000	407716/-	408
	Model5	20	1400	505489/-	361

The average cost per running meter of 7 rows fence comes to be Rs.286/Meter. This practice will be implemented by the DeputyDirector through Project Implementing Agency (PIA) in the development block i.e Subject Matter Specialist .In Tribal district, the DistrictAgriculture Officer, Keylong & Assistant Project Officer,Kaza of Lahaul & Spiti Districtwill act as Project Sanctioning Authority as well asProjectImplementationAgencies(PIA's).ThePIAsshallberesponsiblefor identificationandselectionofthe potentialbeneficiaries.

As Project assistance @80% is availableforindividual farmers and85% for a group of three or morefarmers for installation &Commissioning of Solar Electric Powered Fencing Systems in the Farmer's Fields on the actual work done by the Firm/Company .Projectassistanceshallbereleasedtothebeneficiariesdirectlyorthroughbank,incasethefarmeravailloan.Theassistanceforthe

installation of Solar Electric Powered Fencing can be released to the company after obtaining satisfactory report from core team andfarmers/ a group of farmers. The payments shall be worked out on actual work done and its measurement basis in view of prevailingsiteneedandrequirementduly verified by the Core Teamconcerned.

Ground water hand pump: As it has already mentioned that the present village mostly face the water crisis and glacial water seepage isfor sure present there .So installation of ground water hand pumps can overcome the water scarcity even in winters as well as in otherseasons too.

Hand pumps to individual beneficiaries shall be installed on 75%costs. The 75% cost shall be paid by the beneficiary and balance 25%percent shall be paid the department .The 75 % costs shall be paid by the beneficiary in advance in the prescribedmode of the concernExecutive Engineer (IPH)division .

The estimate for installation of hand pump shall be got prepared through the department ,75% ofthe total estimated cost forinstallation of hand pump shall be borne by the beneficiary and balance 25% shall be borne by the department. Priority should be givento the places where there is no potable water source/ tail end of schemes and there is scarcity ofwater due to topographicalconstraintsand erratic water supply.

LivelihoodImprovementActivities& Plan

- **Three months early variety seed e.g Pea:** As they have monoculture for agriculture productivity followed by few months i.e from April tothe September month .The farmers told if they get early snowfall which makes transportation blocked their crops get spared and they gethuge loss .So if they have early varieties of seeds such as of Peas they can make it harvest as soon as to get snowfall .And somehowmonoculturecan beavoided. The required seedsthey canget from AgriculturedepartmentofHimachal Pradesh.Where itcan besubsidizedfor farmers.

- **CarpetMaking,yakwoolropemaking:**ThecommunitytraditionallymakesthecarpetofYakwoolandalsotheropes.Ifthepeoplemakeit on large scale and get it to be commercialized Its surely going to make the people benefitted.As theydonot require any raw material forthisactivity ,itwould fitbetter with livelihood upliftcomponentwithoutmuch money.
- As the most of households rears the Yak so the availability of raw material i.e yak wool isthere for practices of carpet and yak wool ropemaking.
- **IntroduceKoda (*Fagopyrum esculentum*):** Thevillage grows only the Barley ,Peas ,Potato .As per the geographical and climaticconditions Introduction ofKoda (*Fagopyrum esculentum*)can be experimented as this is served as staple food and being rich in aminoacids.This canbealsocommercialized asother foodcrops.

  The requirement of the koda crop seeds can be fulfilled by the agriculture department as the seeds can be provide at suitable subsidy orprices forthe farmers.

Modified Poly house: For off season vegetable growth the modified poly houses can be durable and effective .As few farmers have triedgrowing squashes, carrots, tomatoes, cucumber, cabbage and coriander etc. The only issue with the old poly houses infrastructure is thatthese dome shaped don't go with heavy snowfall for long duration .While the roof topped like poly houses are more compatible than domeshapedone. Therooftopped onemustbewiththe CoveringofPoly ethylenesheetforlongduration.

HimachalGovt80-85%subsidy.StateGovernmentgetsapproximately50%subsidyfromCentralGovt.inreturn.Guidelinesforimplementing the Mukhya Mantri Greenhouse Renovation Scheme (MMGRS) through Deptt. of Horticulture, H.P. 1. Under this scheme,70% assistance for the replacement of poly sheet subject maximum to Rs. 44.80/- per sq. mtr. as back-ended subsidy would be available tothe individual beneficiaries (i.e. Farmers) who are engaged in greenhouse cultivation of high value flowers and vegetable crops.cost Rs 900-1200/- persquaremeter.

SummaryofHumanCapacityBuilding

Apart from the ecosystem services, the site also boosts of strong women groups who try to microfinance their agriculture needs for exampleseeds for sowing with the help of Self-Help Groups (SHGs).However more capacity building is needed within the project as well as additionalsupport from BDO , Rural development , Tourism Department ,NABARD agencies etc. SHG meetings also provide a gender specific platform todiscussotherissuesrelated toresourcesas mostly womenare primeusrsof fodderand waterfortheir households.

Table10.6:SHGLivelihood Improvement:TrainingBudget(twoworkshopsayear)

S. No.	Particulars	No. Of Group	No of Person	Rate Rs.	Amt. Rs.
1	Refreshment/lunch	10	15	160	22500
	Stationary	10	15	30	4500
	Resource person(Honorarium& Travel)	2	4	2500	20000
	Banner&Photography	2	2	250	1000
	Totalforoneworkshop				48000/-

	Grand Total for 4 Workshops				**1,92,000/-**

MonitoringandEvaluation (M&E)Framework

A participatory framework is established to monitor the efforts made by the stakeholders, the flow of Ecosystem services and related forestmanagement goal.Theparticipatoryframeworkwill be segregated intwo sections as given below:

- Monitoring and Evaluation by the Forest Department (in-house/outsourced infrastructure support): This system will timely evaluatevegetationand other relatedecosystemserviceflowthroughGIS –basedmap ofJFM areas,withvillage boundaries.
- ParticipatoryUnit: Thiswillbeinstrumental in providinggroundtruthingofvegetationgrowthandrelatedimprovementoftheecosystem service flow appropriate protection measures in a frequency of every two years .This will also assess the commensurateimprovement in livelihood through socio- economic survey .The participatory unit will do the monitoring and evaluation based onclearlyagreedprotocol on rights and responsibilities of all stakeholders parties.

Monitoring andEvaluationPlanwithIndicatorsareprovidedinTable1.35

Table10.7:MonitoringandEvaluationPlan

S.No.	FES	Measurest o be Monitored	Baseline value	Target Value	Indicator	Means of Verification	responsibility

	Waterincreaseofwatersupply	Availability of water flow andsesonalityespeciallyduringSummer	ND	Sufficient wateravailabilityduringsummer	Cropsdon't dry due tolackirrigationwaterduring Summer	RecordkeepingbyMonitoringteam	MonitoringTeam of VillageCommittee
	Fuel & Fodderssupply	All the blanksarefullystockedaiwthplantation	Noplantation	Atlist10%increasein fodder & fuel	Conitnedavailabilityoffuel&fodder	Recordkeepingofthe numberofheadloadsof fuel & fodder	

Table10.8-AnnualWork PlanCBMPFor The2021-22year wise

Proposed Activity	Benefitting HH	Unit of Work	Unit cost (Rs)	Proposed Budget	FinancialSource ProjectConvergence Comm.Contribution
Glacialwaterharvesting tank	16	3	224000+20% carriage 44800	2,68800/-	UnderMGNREGA
Glacial Pond for Agriculture	16	1	32 lac+ 6,40000/-	38,40000/-	UnderMGNREGA
Solarinstallation	16	1		98000/-	FromHimUrja70%Subsidy
Solidfencing& Solar fencing	16	1	286/meter	1400x286 554400/-	80%subsidyonsolar fencing

Ground water handpump	16	1			25% subsidy
SHG Livelihood Improvement: Training Budget	16		192000/-	192000/-	JICA withhelpofRDDept&Tourism
Three months earlyvarietyseed e.g.Pea IntroduceKoda	16		1500/-max. x28	117000	Agriculture Deptt.60%subsidy
Conservation of RatanJot, JangliPyaz,	16				Forest Deptt.&HPSBiodiversityBoard,JICA
Modifiedpolyhouse,Minimum 25 square meter	16		900-1200 /- per square meter 15HH	30,0000	FromAgricultureDeptt.70%subsidy10%beneficiaries,20% JICA
Total					

10.9proposedphysical&financial IncomeGenerationActivities (IGA)

Sr.No.	Proposed Activities	Total	Finance Contribution	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
1.	**SHG LivelihoodImprovement:Training Budget(CarpetMaking,yak wool rope making)**	192000/-	JICAwithhelpofRDDept & Tourism	96000/-	96000/-	0	0	0	0
2.	Three months earlyvarietyseede.g.PeaIntroduce Koda	1500/-max. x 28	Agriculture Deptt.60% subsidy	58500/-	58500/-	0	0	0	0
3.	*Populus cilata*and *Junipersp*.plantation		ForestDeptt. &HPSBiodiversity Board	0 \	0	0	0	0	0

	canbe								

---

	practiced								
4.	Modified poly house,Minimum25 squaremeter	900-1200 /-persquareme ter15HH	FromAgricultureDeptt.70% subsidy 10% beneficiaries, 20%JICA	300000/- 20%JICA (60000/)-	300000/	300000/	0	0	0

11 ConvergenceswithExternalAgencies

ActivitiestobecarriedoutwiththeSupportofOtherDepartments/Projects/SchemesCommunityInfrastructuredevelopment,basichumanneeds,agriculture and horticulture(through Convergence)

11.1 Activities identifiedforConvergence

S.No	Activities	HHs tobe benefitted	Department/Agencyforconvergence
1	**RepairofMahilaMandal**	**16**	**Panchayat/Block**
2	**FootPath**	**16**	**Panchayat/Block**
3	**Drain**	**16**	**Panchayat/Block**
4	**Training/FarmingCamp**	**16**	**Agri/Horti/AnimalHusbandry**
5	**Silage(Demonstrationsbasis)**	**16**	**A/HexposureVisit**
6	**Medicinalplants**	**16**	**Forest/HorticultureDepartment**
7	**TrainingonEco-TourismActivities**	**10**	**Forest /TourismDepartments**

11.2 PhysicalandFinancialPlanfor Convergence Activities

	Activitiesidentifiedfor convergence															
S. No	Proposedactivities	Unit	Total		2022-23		2023-24		2024-25		2025-26		2026-27		2027-28	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	DryStoneCheckDam	No.	5	100000	0	0	3	60000	0	0	2	40000	0	0	0	0
2	DryStoneC/Wall	No.	1	15000	0	0	1	15000	0	0	0	0	0	0	0	0
	TotalConvergenceActivity			**115000**				**75000**				**40000**				

12 ImplementationStrategies

12.1implementationguidelineson componentsand sub-components

Participatoryforest management

Soil&waterconservation/landslidecontrolmeasures

Communitydevelopment andlivelihoodimprovementwithgendermainstreaming

12.3 Training andcapacitybuildingofcommunity institutions*(Sub-Committee,CIG,SHG)*

Institution	Areasoftraining/capacity building	Resource person/group	Locationsforexposure visits
Sub-Committee		Consultant	
ExecutiveCommittee	Proceeding writingAccountmaintainAssets created Role&responsibilityofEC	JICAStaff/ ForestDepartmentstaff/Consultant	Dehradun, Shimla,Kulu,Kangra

CIG	Proceeding Account maintainingValueaddit iontraining	Consultants	Local /Programmanagerruralfinancing
SHG	Group formation, Account maintaining,Proceeding writing, Banklinkages etc.	NABARD/Mastertrainer	

12.4 Yearwisedetail oftrainingandcapacitybuilding plan

S. No	Year& Month	Community institution	Subjectoftraining	NoofParticipants	Duration	Resource person/group
1	2022-2023	EC trainingExpos ure visitCIG SHG	Proceeding writingAccountmain taining Role&responsibilityofEC Gender	7-15 ECRepresentative	2days 5days	1.Master trainer, FDaccountants 2. Successfulprojectsinsideand outside state.
2	2022-2023	1.EC Training2.CI G	M&E/Social audit	3-5	2days	FTU-coordinators

		3. SHG				

3	2023-2024	1.EC Training2.CI G 3. SHG	Assets created	3-5	1day	FTU coordinators

Sr. No	ProposedActivities	Unit	Total		2022-23		2023-24		2024-25		2025-26		2026-27	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
TrainingandCapacityBuildingofCommunityInstitutions														
I	Sub-Committee(EC)Training													
a)	Proceedingaccount Maintain	No	2	0	1	0	0	0	1	0	0	0	0	0
b)	RoleResponsibility, Gender,Assets crated	No	3	0	1	0	1	0	1	0	0	0	0	0
c)	M&E and Social Audit	No	4	0	0	0	1	0	1	0	1	0	1	0
	Sub-Total		9	0	2	0	2	0	3	0	1	0	1	0
II	CIG Training													
a)	ProceedingWriting, AccountMaintaing	No	2	0	1	0	1	0	0	0	0	0	0	0
b)	Value addition	No	4	0	1	0	1	0	1	0	1	0	0	0
	Sub-Total		6	0	2	0	2	0	1	0	1	0	0	0

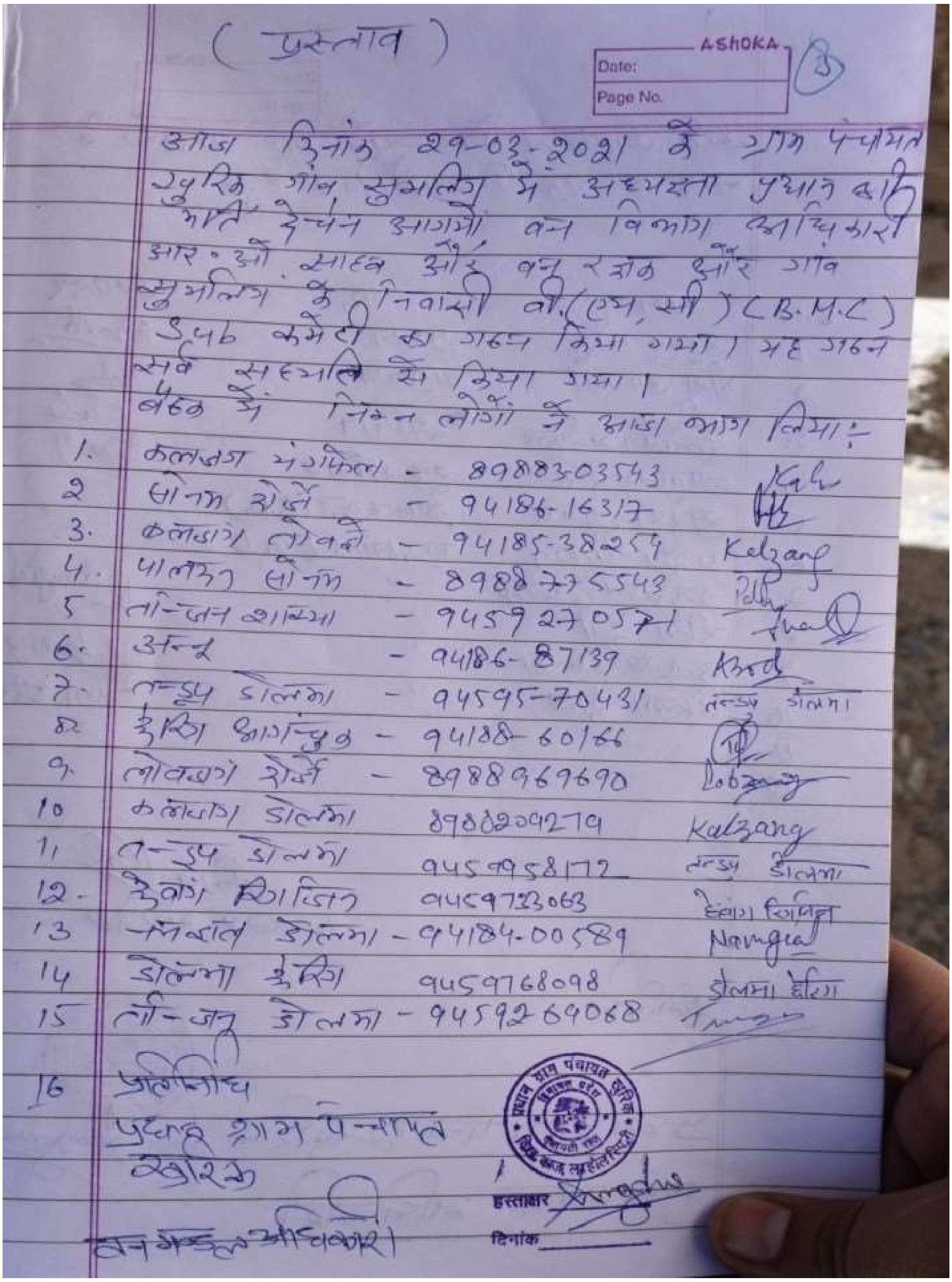
12.5 ProposedYearWise Training

III	**SHG**													
a)	**Group Formation, ProceedingWriting**	**No**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
b)	**AccountMaintaining,Bank Linkagesetc.**	**No**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Sub-Total	**No**	**4**		**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

12.6 Recordsto bemaintained bythecommunityinstitutions

S. No	Nameoftherecord/ register to bemaintained	Tobemaintainedbywhom	To beverifiedby whom
1	Membershipb register, ye laws, OTHER &RECORDS	President/MemberSecretaryVFDS	FTU Co-Officer/FTU ordinator
2	Proceeding register	MemberSecretaryVFDS/JointSecretary	FTUCo-ordinator
3	Cash account register &relatedbooks	Treasurer ,Secretary, joint Secretary,	FTU Officer FTUCo-ordinator
4.	Asset createdregister	President,Secretary	FTU/Projectrepresentatives.

ANNEXUREs



(प्रस्ताव)

ASHOKA
Date:
Page No. (3)

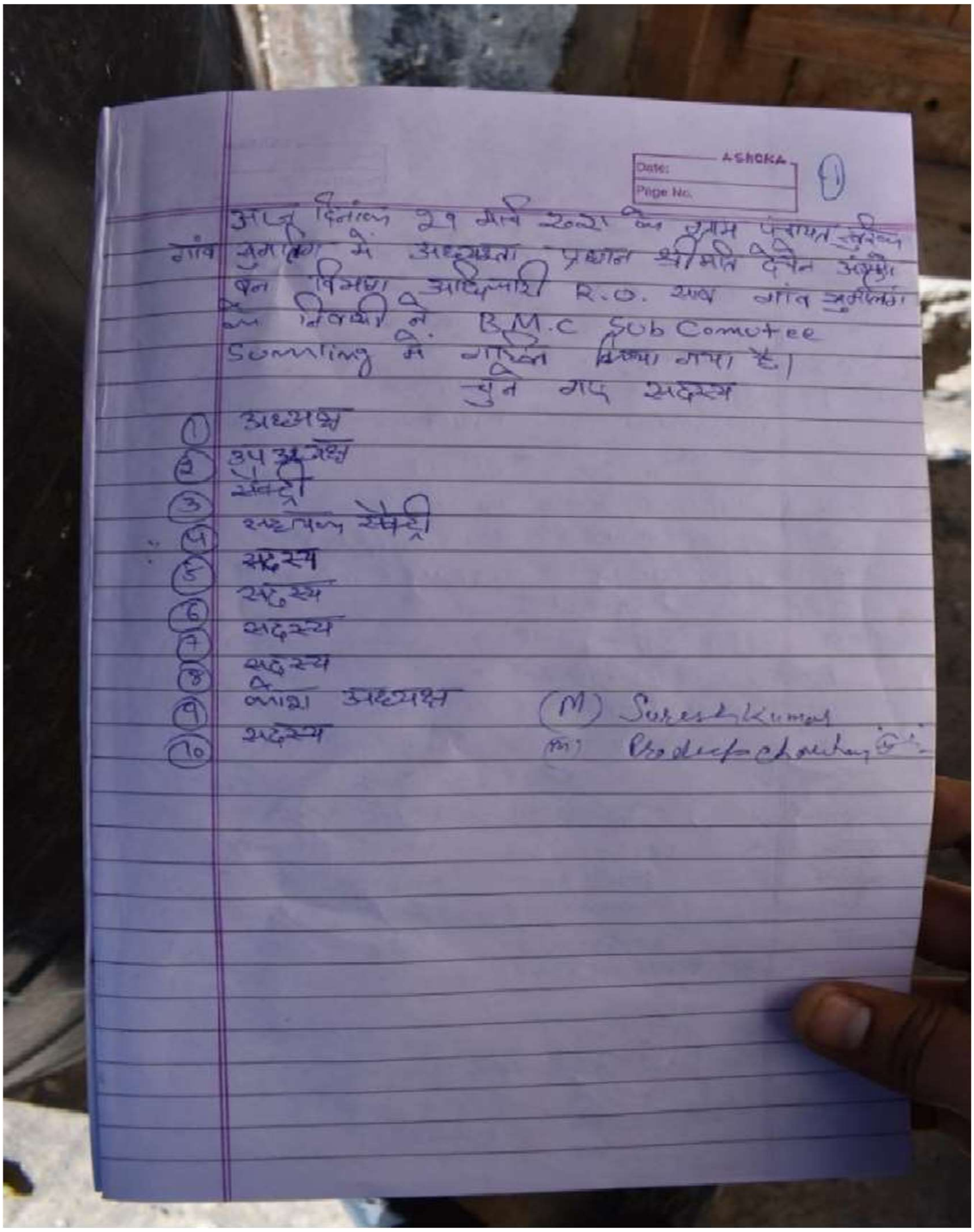
आज दिनांक 29-03-2021 को ग्राम पंचायत खुरिक गाँव सुमलिंग में अध्यक्षता प्रधान कार्ति छेरिंग आंगमो, वन विभाग अधिकारी आर.ओ. साहब और वन रक्षक और गाँव सुमलिंग के निवासी बी.(एम.सी) (B.M.C) Sub कमेटी का गठन किया गया। यह गठन सर्व सहमति से किया गया।
बैठक में निम्न लोगों ने भाग लिया:

1. कलजंग पंगफेल - 8988303543 — Kalz
2. सोनम दोर्जे - 94186-16317
3. कलजंग तोबगे - 94185-38254 — Kelzang
4. पालजुंग सोनम - 8988775543
5. तान्जिन शामिया - 9459270571
6. अनु - 94186-87139
7. तन्डुप डोलमा - 94595-70431 — तन्डुप डोलमा
8. छेरिंग आंगचुक - 94188-60166
9. लोबजंग दोर्जे - 8988969690 — Lobzang
10. कलजंग डोलमा 8988209279 — Kalzang
11. तन्डुप डोलमा 9459958172 — तन्डुप डोलमा
12. छेवांग रिग्जिन 9459473063 — छेवांग रिग्जिन
13. नमग्याल डोलमा - 94184-00589 — Namgial
14. डोलमा छेरिंग 9459768098 — डोलमा छेरिंग
15. तेन्जिन डोलमा - 9459264068
16. प्रतिनिधि प्रधान ग्राम पंचायत खुरिक

वन मण्डल अधिकारी

प्रधान ग्राम पंचायत खुरिक
हस्ताक्षर
दिनांक

Annexure-I



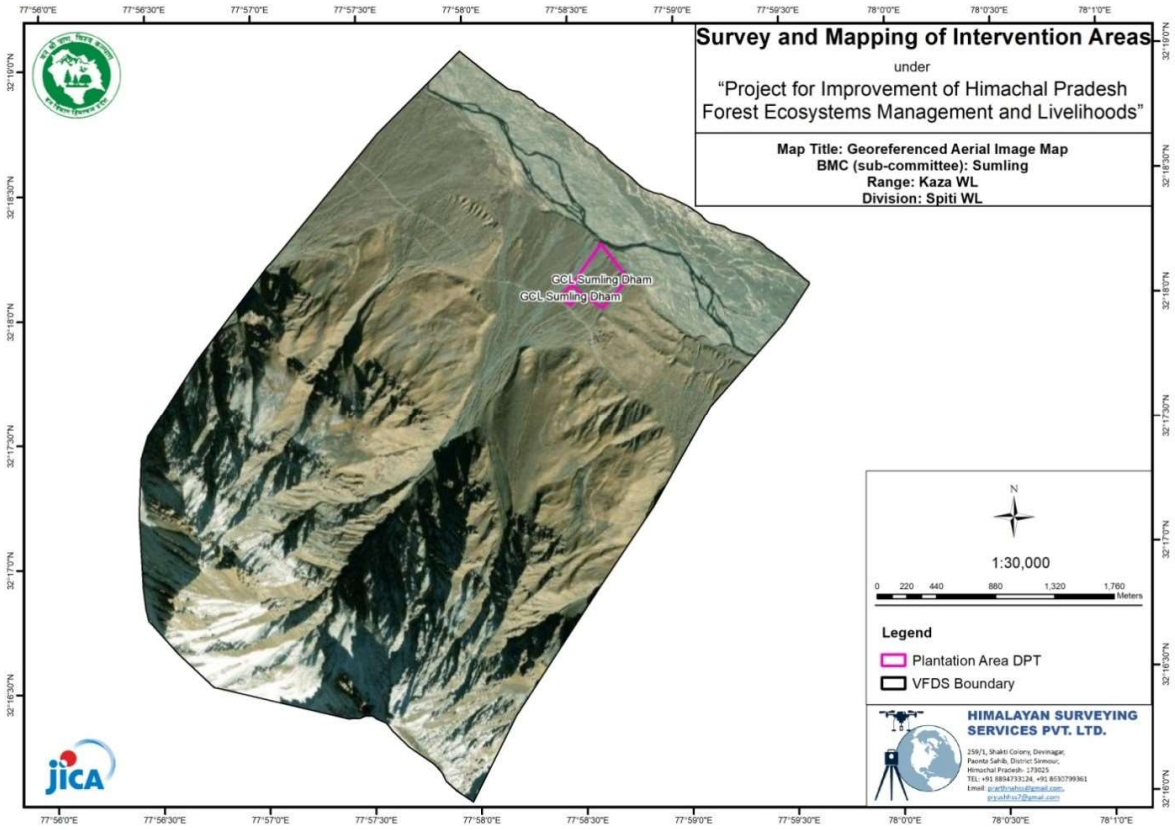
आज दिनांक 21 मार्च 2021 को ग्राम पंचायत सुमलिंग गांव सुमलिंग में अध्यक्षता प्रधान श्रीमति देचेन अंगमो वन विभाग अधिकारी R.O. एवं गांव सुमलिंग के निवासी ने B.M.C Sub Comotee Sumling में गठित किया गया है।

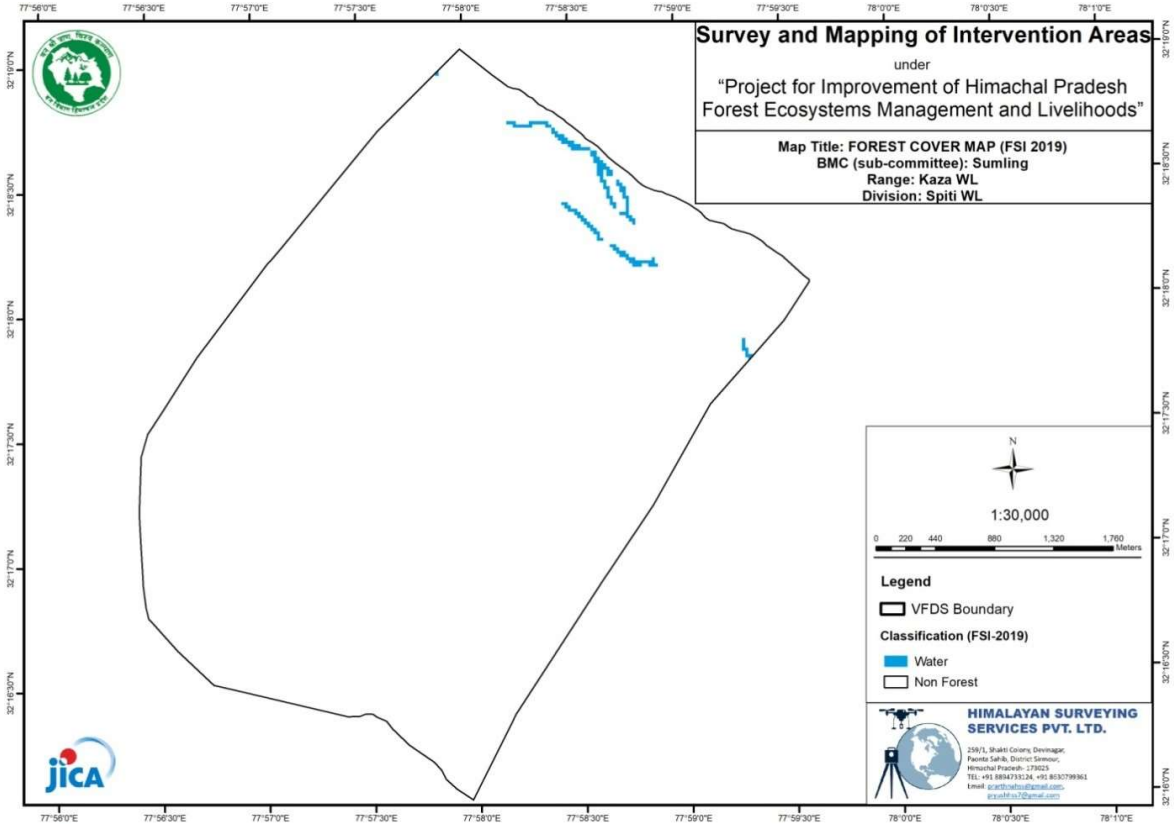
चुने गए सदस्य

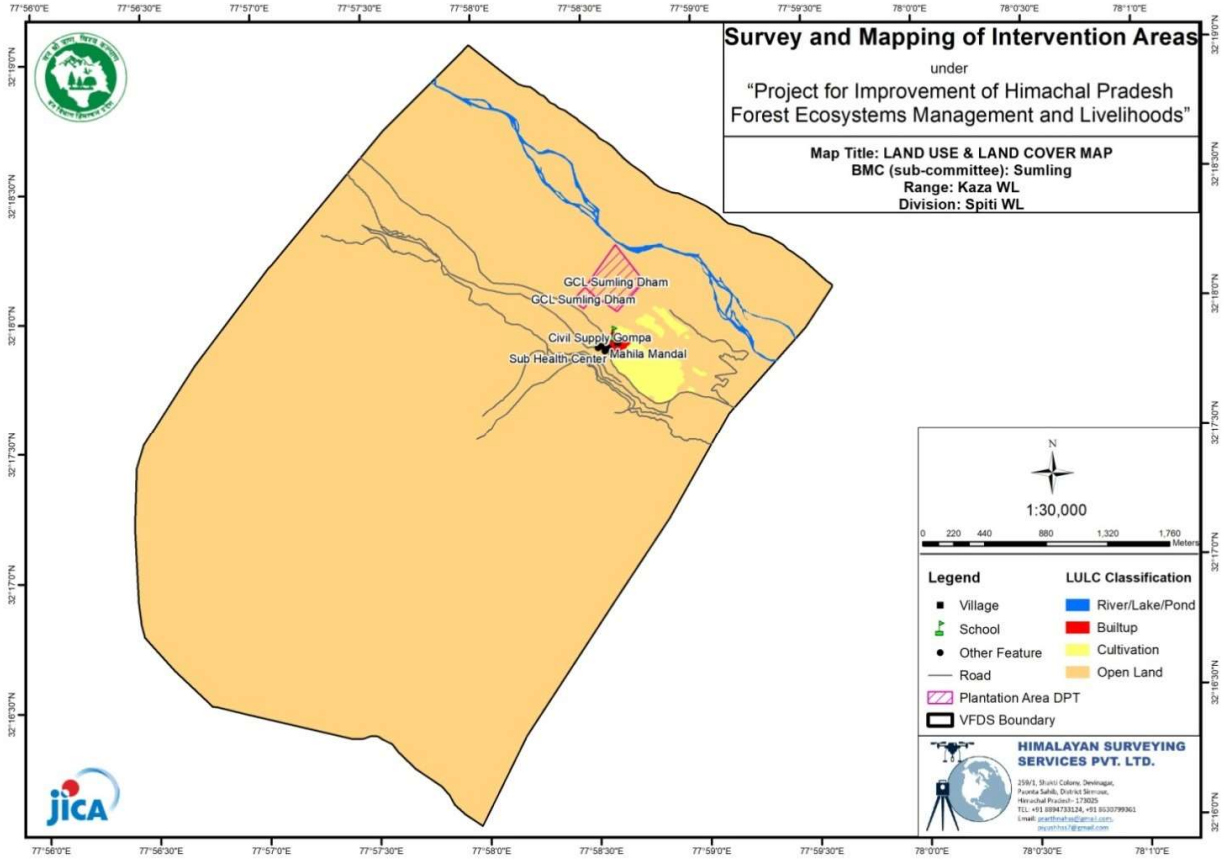
1. अध्यक्ष
2. उपाध्यक्ष
3. सेक्रेट्री
4. सहायक सेक्रेट्री
5. सदस्य
6. सदस्य
7. सदस्य
8. सदस्य
9. आशा अध्यक्ष
10. सदस्य

(M) Suresh Kumar

(M) Pradeep chauhan


Survey and Mapping of Intervention Areas
under
"Project for Improvement of Himachal Pradesh Forest Ecosystems Management and Livelihoods"
Map Title: Georeferenced Aerial Image Map
BMC (sub-committee): Sumling
Range: Kaza WL
Division: Spiti WL
CCL Sumling Dham
CCL Sumling Dham
N
1:30,000
0 220 440 880 1,320 1,760
Meters
Legend
Plantation Area DPT
VFDS Boundary
HIMALAYAN SURVEYING SERVICES PVT. LTD.
JICA

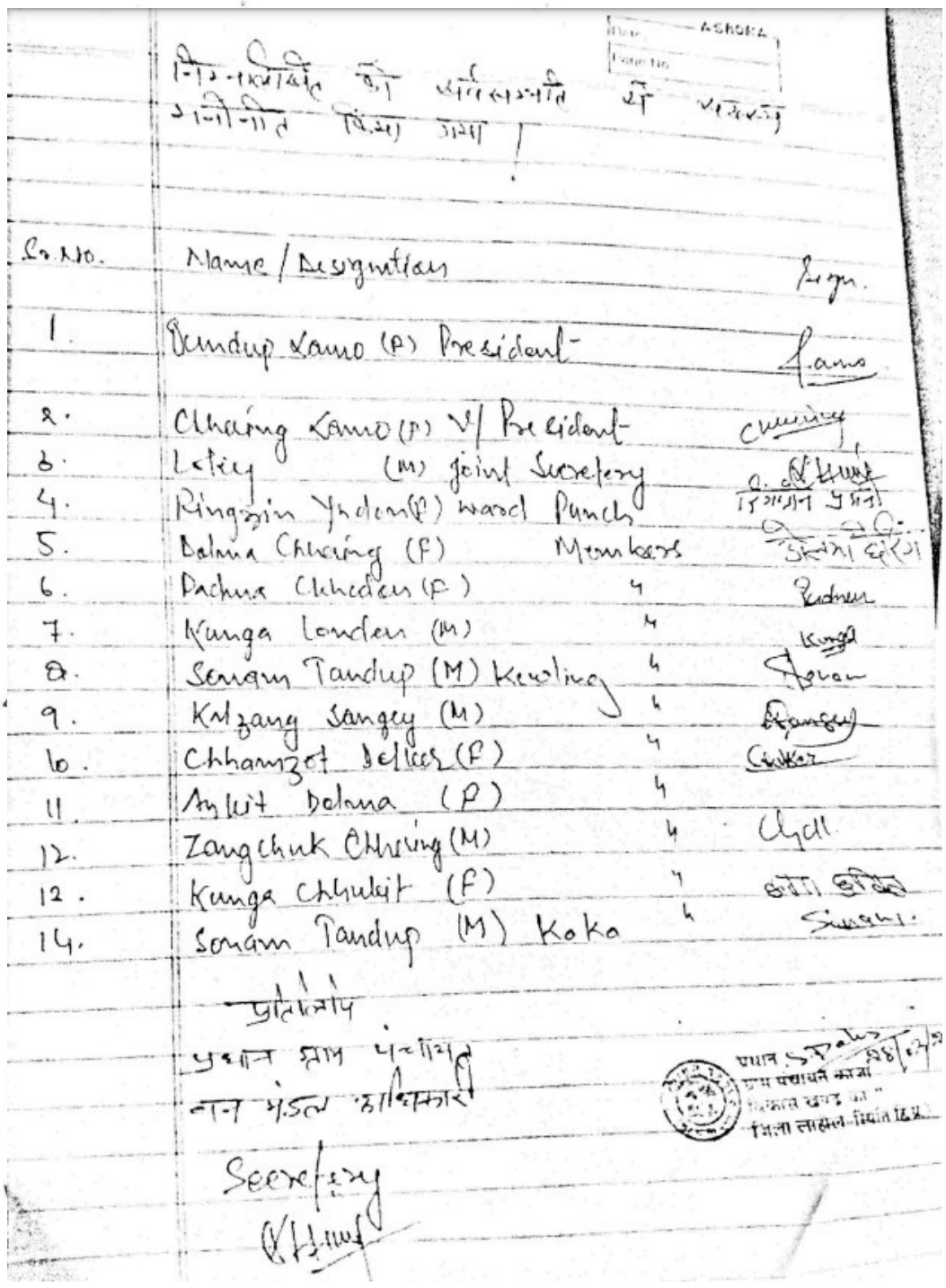

Survey and Mapping of Intervention Areas
under
"Project for Improvement of Himachal Pradesh Forest Ecosystems Management and Livelihoods"
Map Title: FOREST COVER MAP (FSI 2019)
BMC (sub-committee): Sumling
Range: Kaza WL
Division: Spiti WL
N
1:30,000
0 220 440 880 1,320 1,760 Meters
Legend
VFDS Boundary
Classification (FSI-2019)
Water
Non Forest
HIMALAYAN SURVEYING SERVICES PVT. LTD.
JICA


Survey and Mapping of Intervention Areas
under
"Project for Improvement of Himachal Pradesh Forest Ecosystems Management and Livelihoods"
Map Title: LAND USE & LAND COVER MAP
BMC (sub-committee): Sumling
Range: Kaza WL
Division: Spiti WL
GCL-Sumling Dham
GCL-Sumling-Dham
Civil Supply Gompa
Sub Health Center
Mahila Mandal
N
1:30,000
0 220 440 880 1,320 1,760
Meters
Legend
Village
School
Other Feature
Road
Plantation Area DPT
VFDS Boundary
LULC Classification
River/Lake/Pond
Builtup
Cultivation
Open Land
HIMALAYAN SURVEYING SERVICES PVT. LTD.
JICA

nnexure-IV

RegistrationofSocieties

MemorandumofUnderstanding



Sr.No.	Name / Designation	Sign.
1.	Rendup Lamo (F) President-	Lamo
2.	Chhaing Lamo (F) V/ President-	Chhaing
3.	Letey (M) joint Secretary	
4.	Ringzin Yuden(F) ward Punch	
5.	Dolma Chhaing (F) Members	
6.	Pachun Chhedon (F) "	Pachun
7.	Kunga Londen (M) "	Kunga
8.	Sonam Tandup (M) Kasling "	Sonam
9.	Kalzang Sangey (M) "	Sangey
10.	Chhamzot Bellies (F) "	Chhamzot
11.	Mukit Dolma (F) "	
12.	Zangchuk Chhaing (M) "	Chyd
12.	Kunga Chhukit (F) "	
14.	Sonam Tandup (M) Koka "	Sonam

Annexure-IX

AnnexureXIII

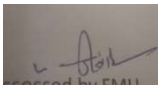
Micro Plan Assessment Criteria for Financing and Sanctioning

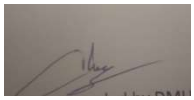
DMU: Wildlife Division SPITI FTU: Wildlife Range KAZA Beat: KAZA
GP: khurik BMC Sub-Committee: SUMLING

S.NO	Assessment Criteria	Achievement DD/MM/YY	Status at the time Appling for Approval
	Process Related		
1.	GP Level and Ward Level awareness done	10/10/21	DONE
2.	GP Consent/Ward Consent to work with Project Obtained	10/10/21	DONE
3.	BMC Sub-Committee Formed/Executive Committee Constituted	10/10/21	DONE
4.	BMC Sub-Committee Registered	03/06/22	DONE
5.	MOU Signed between DMU and BMC Sub-Committee for under taking micro-planning and implementation	21/11/22	DONE
6.	EC1st meeting held to explain their role And responsibilities	29/03/22	DONE
7.	BMC Sub-Committee account Opened	30/11/22	DONE
8.	Percent of households represented in micro-planning process(App.)	50-60%	DONE
9.	Percent of Women Participants involved in micro-planning process(App.)	60%	DONE
10.	Collected information crosschecked and Updated in Green Assembly	30/10/22	DONE
11.	Women, Poor, Youth and other	YES	DONE

	Communities were involved in micro- Planning process		
12.	BMC Sub-Committee involved in Information analysis and finalizing key emerging activities	YES	DONE
13.	MicroPlan (CBMP,CD&LIP) approved by BMC Sub- Committee in General Assembly And confirmed by executive committee	30/11/22	DONE
14.	Formats prescribed for MP(CBMC,CD&LIP) Used by social and technical staff	YES	
15.	Total amount of CBMP,CD & LIP and Convergence mentioned in Microplan	07	
16.	Days taken to complete MP(CBMP,CD&LIP)	3 MONTHS	DONE
17.	Microplan Submitted by FTU to DMU	10/11/22	DONE
18.	Microplan approved by the Head of DMU	21/11/22	DONE
	Output related		
19.	List of executive members attached	YES	DONE
20.	BMC Sub-Committee contribution is there	YES	DONE
21.	Are CBMP and CD & LIP activities in line With project objectives	YES	DONE
22.	Livelihood activities checked for initial technical feasibility and economic viability By micro planning team	YES	DONE
23.	Convergence activities included	YES	DONE
24.	BMC Sub-Committee training and capacity	YES	DONE

	Building aspect included		
25.	Costing of CBMP, CD &LIP checked by DMU	YES	DONE
26.	Microplan includes adversely affected households/group, if any	YES	DONE
27.	PRA tools, well being analysis, BMC sub-committee resolution ,maps of CBMP and Other documents are annexed	YES	DONE
28.	Sources of secondary information Mentioned microplan	YES	DONE





AssessedbyFMU RecommendedbyDMU ApprovedbyPMU