8. STRATEGY & ACTION PLAN

The Action Plan below spells out detailed sets of action, jointly elaborated by the main stakeholders, which are meant to translate the strategies presented in the previous chapter into actual biodiversity protection on the ground. The underlying approach has been to design actions that are SMART, in other words Specific, Measurable, Achievable, Realistic and Time Bound. No systematic attempt has been made to define priorities between actions, locations and actors. However the sequence of actions as they are presented under the different strategies is broadly indicative of priorities agreed by the participants in the BSAP process.

I. Strategies & Actions for Conservation of Wild Flora and Habitats Diversity				
Strategy: Ensure conservation and sustainable management	nt of natural forests and indigenou	s tree & shrub spe	cies	
Actions	By whom	Where	When	Finance
Complete inventory & conduct thorough ecological research on distribution/status/conservation/propagation of indigenous trees & shrubs focusing on rare & threatened species like Juniper, Birch etc. (see Appendixes 2 & 3)	Forest Department, SKUAST FRL, WII	Whole of La- dakh (Leh & Kargil District)	Starting from spring/ mid-2003	No additional funds required
Identify key areas of natural wood/shrubland & incorporate them in Protected Areas & Community Conserved Areas	LAHDC/Forest, Wildlife Deptt/ SKUAST/WII/loc. communities	-do-	By 2003	-do-
1. Identify, list & map natural forests areas & transmit the information to LAHDC and other key stake holders (Wildlife Deptt, PWD, Armed Forces, loc. com. representatives)	Forest Department	-do-	First half of 2003	-do-
2. Investigate legal status of selected forest areas	LAHDC/Forest, Revenue Deptt.	-do-	-do-	-do-
3. Grant statutory protection to selected forest areas	LAHDC	-do-	-do-	-do-
Promote in situ conservation and natural regeneration	Forest Deptt. with local communities/NGOs' participation,	Leh, Nubra, Dras, Khaltse	Growing season 2003	To be determined
Declare Juniper as a protected tree, symbolic of Ladakh cold desert ecosystem	LAHDC, Forest Department	Ladakh (Leh & Kargil District)	Start immediately	No additio- nal funds
Promote ex- situ propagation	Forest Department		-do-	-do-
Establish arboretum & gene banks	Forest Deptt, FRL, SKUAST		Ongoing	-do-

Strategies & Actions	By whom	Where	When	Finance
Conduct awareness campaigns aimed at local communities	Forest & Wildlife Department,	Whole of	Start	No addi-
focusing on natural forest & indigenous tree protection.	SKUAST, Ladakh Buddhist	Ladakh	immediately	tional funds
Encourage social fencing. Specifically:	Association (LBA), Gompa			required
1. raise public awareness to discourage use of indigenous	Associations, LEDeG			
species of Juniper in festivals and pujas.				
2. explore alternative species that could be used for the				
purpose (Thuja orientalis, other Junipers) & conduct				
thorough impact studies prior to possible introduction.				
Strategy: Promote Conservation & Sustainable Use of Sea	Buckthorn through Improved Cook	rdination & Comm	unity/Women	Participation
Promote coordination between Sea Buckthorn (SBT) stake-	LAHDC/DC/Forest, Horticulture		To start	No additio-
holders & avoid role duplication. To this end constitute a	Deptt/SKUAST/FRL/ LEDeG		immediately	nal funds re-
Apex Body under the aegis of LAHDC	LEHO/LNP/WAL/Women Tses-			quired
	ta Lulu Soc./Village Committees			
Protect areas of naturally growing SBT	-do-		-do-	-do-
Further develop methods for sustainable use of Sea	Forest Deptt/Tsestalulu Soc./ Re-		To start	-do-
Buckthorn	search Inst/NGOs/village com.		immediately	
Establish nurseries & research/demonstration plots on	Forest Dept/FRL/SKUAST with		From 2003	Est. 2-3
scientific lines to study different varieties, yield pattern etc.	community/NGOs' participation		onwards	lakhs
Establish orchard plantation	Forest Deptt/FRL/LEDeG /Indus	Potential SBT	To start By	Est. 10
	Tsesta Lulu Society	growing areas	May 2003	lakhs
Design policy on SBT management: (ref Appx 14 & 15)	SBT Committee	Ladakh	Immediately	Not required
Ban current destructive harvesting methods and train	Indus Women Tsesta Lulu Soc./	SBT Growing	Ongoing,	No additio-
local communities, women in particular, in sustainable	LEDeG, other NGOs, Forest	Areas	step up	nal funds
harvesting, processing & economics of SBT	Deptt, FRL			
Constitute village level Sea Buckthorn management	LEDeG & Other NGOs,	Indus Valley/	Start	-do-
committees to oversee sustainable harvesting	Panchayati Raj Institutions	other SBT areas	Immediately	

Strategies & Actions	By whom	Where	When	Finance
Regulate & authorize SBT berry harvesting by local	LAHDC Forest & Wildlife	SBT Growing	First half of	No additio-
community organisations using non-destructive methods.	Departments	Areas	2003	nal funds
Develop modus operandi for harvesting/payment be-	Local Communities/Forest Deptt	-do-	-do-	-do-
tween local communities/Forest Deptt/Panchayat/ Industry	/ Panchayats/NGOs/ Industry			
• Promote R&D explore the range of products that can	LAHDC, FRL, Forest		-do-	To be
be prepared from SBT (jam/juice/pickle/wine/cosmetics	Department, LEDeG & other			determined
medicine etc.)	NGOs			
Promote technology transfer from Research Instit. to	FRL, SBT researchers from		Ongoing,	No additio-
loc. communities: "bring research results from lab to land".	Palampur University		step up	nal funds
• Encourage processing in Ladakh e.g. of juice/pulp, as	LAHDC/Forest Deptt., LEDeG,		-do-	-do-
is being currently done by Indus Tsesta Lulu Soc / Spiti	Indus Tsesta Lulu Society, Com-			
women cooperative society	munity Organisations.			
• Promote collaboration with countries, having develo-	Concerned NGOs, Forest		-do-	-do-
ped technologies for SBT processing (China/Germany/Ca-	Department, LAHDC, Ladakhi			
nada) & ready to provide assistance (Germany). Explore	& International NGOs			
possibility of sending interested Ladakhi for training.				
Establish effective marketing strategy and discourage	LAHDC/Forest Dept/Indus Tses-		-do-	-do-
monopoly	ta Lulu Soc/LEDeG/Com. Org			
Strategy: Promote conservation of medicinal plants and other	her flora with a focus on threatene	d habitats & speci	es	
Complete inventory, mapping & ecological surveys of	Forest & Wildlife Department,	Whole of	Ongoing	-do-
indigenous flora including medicinal plants focussing on	Ladakh Amchi & Astro Sabha	Ladakh	(WII, FRL),	
threatened species & habitats. Identify key areas for plant	(LAAS), WII, FRL		step up from	
habitat protection (in situ conservation)			2003	
Create High Altitude Medicinal plants Conservatories	Local Communities, LAAS,	Suru/Kardung	2003-04	Est. 15 lakh
(HAMC) and Community Conserved Areas. Develop	Forest and Wildlife Departments	La, other areas		for Kardung
community based conservation & management plans. (see	FRL,WII,	to be identified		La HAMC
also Appendix 16, Conservation of medicinal plants)				

Strategies & Actions	By whom	Where	When	Finance
Formulate and introduce regulations governing collection	LAHDC, Forest & Wildlife	Whole of	Start	No additio-
of wild flora including medicinal plants by researchers &	Departments, LAAS, Research	Ladakh	Immediately	nal funds
Amchis. Apply new J&K Wildlife Act provisions prohibit-	Institutions			
ting free plant collection for herbarium & other purposes.				
Develop extensive cultivation programme by involving	Forest Deptt / LAHDC/ NGOs	Ladakh	From 2003	-do-
farmers and providing marketing facilities.			onwards	
Establish gene banks in research farms and institutions &	FRL/ SKUAST/ Forest		Ongoing	-do-
promote ex-situ propagation	Department			
II STRATEGY & ACTIONS FOR CONSERVATION OF INDIGE	NOUS CROP VARIETIES			
Draw up a long term strategy towards conservation of indig	genous land varieties of cereals, veg	getable, fruit crops	& their wild r	elatives
Conduct surveys on status, distribution and characteristics	ICAR/FRL/SKUAST/LAHDC/	Whole of La-	2003-04	No additio-
of Ladakh cereal crops, vegetables, fruit & their wild rela-	Agri., Horti. Deptt/LEDeG/ LE-	dhak (Leh &		nal funds
tives with a clear focus on indigenous species and varieties.	HO/ Community Organisations	Kargil Districts		required
Promote in situ conservation of local agricultural and horti-	-do-	-do-	-do-	To be
cultural varieties through provision of support to farmers.				determined
Promote <i>ex-situ</i> conservation: establish gene banks, propa-	-do-	-do-	-do-	To be
gate in research farms, conduct adaptive research. Collect				determined
seeds of all indigenous varieties & undertake sowing and				
germination after a 3-4 year period to ascertain viability.				
Establish nurseries/develop orchard cultivation to propa-	Horticulture, Forest Deptt./	Fruit growing	To start in	-do-
gate indigenous fruit varieties, apricot in particular	FRL/NGOs	areas of Ladakh	2003	
Conduct thorough study and Environmental Impact	MoEF/ICAR/FRL/ LAHDC	Whole of	From 2003	No additio-
Assessment (EIA) prior to any introduction of exotic	Forest/Agriculture/Horticulture,	Ladakh	onwards	nal funds
varieties or breeds	Sheep, Animal Husbandry Deptt	1	1	required
Document & protect indigenous knowledge of loc crop va-	ICAR/FRL/SKUAST/ LAHDC,	-do-	-do-	-do-
rieties/wild plants use and build up community awareness	Agriculture, Horticulture Deptt,			
of need to conserve them through NGO & Research Inst.	LEDeG/LEHO/other NGOs/lo-			
support. Promote marketing of local varieties.	cal communities & their org.			

Strategies & Actions	By whom	Where	When	Finance
Identify nodal agencies to carry out work mentioned above (See also Appendix 17. Protection of local cereal varieties)	SKUAST/FRL/Agriculture/Horti culture Deptt/NGOs	Ladakh	To start immediately	No additio- nal funds
III STRATEGY: RESEARCH RANGELAND FLORISTIC DIVER	SITY AND PROMOTE ITS CONSERV	ATION & SUSTAIN	ABLE MANAGE	MENT
Conduct studies of floristic composition, productivity, status, distribution, carrying capacity & sustainable management of pasture land.	ICAR/WII/SKUAST/Sheep,Ani mal Husb./Agric.Deptt/ ICIMOD loc. communities' participation	Ladakh range- lands with focus on Chang Tang	2003-04	No additio- nal funds required
Document/protect local pasture use systems e.g. grazing reserves managed by loc.communities/monasteries/gompas	Same as above plus LAHDC	-do-	-do-	-do-
Establish additional grassland reserves/PAs & CCAs to conserve best natural grasslands and as a means to balance pasture use by livestock and wildlife conservation	LAHDC / WII / IUCN/ Local Communities & their Organisations	-do-	-do-	To be determined
Complete review of pasture ownership in the Chang Tang & promote security of tenure for Chang Pa nomads	LAHDC, Community Organisations, NGOs	-do-	-do-	No additio- nal funds
Explore and test improved pasture management measures such as:		-do-	2003-07	To be determined
 conservation & propagation of native forage species ensuring fodder availability / encouraging storage of fodder by nomads for winter use pasture development through irrigation Examine possibility of lengthening summer pasture periods so as to reduce stress on winter pastures 	LAHDC, Sheep & Animal Husbandry, Agriculture Deptt, Local Communities & their Organisations	-do-	-do-	-do-
IV STRATEGY: STUDY LOCAL DOMESTIC BREEDS DIVERS	ITY & PROMOTE ITS CONSERVATION	ON		
Conduct regional survey on status and distribution of local breeds of domesticated ungulates (sheep, goat, <i>Bovinae</i> , equine)	LAHDC/Sheep, Animal Husbandry Deptt/SKUAST/ Community Organisations, NGOs	Whole of Ladakh	2003-04	No additio- nal funds required

Strategies & Actions	By whom	Where	When	Finance
Promote protection & improvement of indigenous breeds,	LAHDC, Sheep, Animal	Whole of	2003-07	To be
e.g. pashmina producing changra goats through:	Husbandry Departments,	Ladakh with a		determined
• <i>in-situ</i> conservation and avoidance of introduction of	SKUAST, community	special focus on		
exotic inheritance in flocks/herds	organisations	the Chang Tang		
• establishment of sperm banks, genetic up-gradation				
through selective breeding and propagation of germ plasm				
at village level.				
• ram/buck exchange programs to minimize in-breeding				
(See also Appx 11. Protection of local breeds)				
Optimize local breeds production & monitor population	- do -	- do -	- do -	No additio-
changes				nal funds
Document and protect indigenous livestock management	-do-	Whole of	-do-	-do-
systems and local knowledge of disease treatment		Ladakh		
Strengthen/reintroduce the community management system	Sheep & Goat, Animal Hus-	Ladakh	Start	To be
of livestock rearing ("Rarzy-Barzy") to make best use of	bandry Departments, local	(excluding	immediately	determined
pastures in summer	communities, NGOs	ChangTang)		
Establish livestock crisis management team at district level	-do-	Ladakh	2003-04	To be
as a precautionary measure to combat natural calamities				determined
Encourage exchanges with regions comparable to Ladakh	LAHDC / MoT / MoEF	Ladakh/ Tibet/	2003-07	-do-
(Tibet, Inner Mongolia), to share experiences, study con-	Ministry of Agriculture	Inner Mongolia		
servation & integrated management of indigenous breeds.				
Control feral dog population as a means to protect young	LAHDC/Armed Forces/Ladakh	Ladakh	2003-07	No additio-
livestock and wildlife which may fall prey to them espe-	Society for Prevention of Cruelty			nal funds
cially in areas close to armed forces establishments.	to Animals (LSPCA)/Sheep,			required
Promote humane & non poisonous means of control such	Animal Husbandry Departments,			
as sterilisation, removal from biodiversity areas etc.	Notified Area Committee (NAC)			
Establish a shelter for stray ungulates in Leh under the	LAHDC	Leh	2003-04	To be
Animal Welfare Board, GOI				determined

Strategies & Actions	By whom	Where	When	Finance	
Institute a programme of domestic equine care and protection through the newly established Ladakh Society for the Prevention of Cruelty to Animals (LSPCA) (see Appx.17)	Ladakh Society for the prevention of Cruelty to Animals (LSPCA)	Leh	2003-04	To be determined	
Strengthen diagnostic laboratory at District HQ to control spread of contagious diseases among livestock & wildlife	LAHDC	Leh, Kargil	-do-	-do-	
Spend earmarked funds on livestock welfare rather than on large staff contingent which may need down sizing	LAHDC/Animal, Sheep & Goat Husbandry Departments		2003-07	No additio- nal funds	
Promote value addition of livestock products and reduction / elimination of middlemen's role to benefit actual livestock rearers to the maximum extent (see also Appx, 19)	LAHDC/Sheep & Animal Husbandry Deptt/Sheep Co- operatives/LEDeG/LEHO	Ladakh (particularly the ChangTang)	2003-05	-do-	
V STRATEGIES & ACTIONS FOR CONSERVATION OF NATURAL HABITATS & WILD FAUNA DIVERSITY					
Conduct detailed studies on status and distribution of wild fauna focussing on threatened species and habitats.	WII/Wildlife Deptt/SLC/WWF with participation of loc. com.	Ladakh, Trans- Himal. region	2003-2005	No additio- nal funds	
Conduct impact studies focusing on major threats to wildlife including competition from livestock grazing, tourism & infrastructure development and other human uses	WII/Wildlife/Tourism Deptt/ SLC/WWF with participation of local communities /Armed Forces (14 Corps eco cells)	PAs & biodiversity rich areas	2003-2005	No additio- nal funds required	
Strategy: Enhance wildlife & habitat protection					
Promote local wildlife stewardship through awareness raising, capacity building & recruitment of local villagers as "Wildlife Stewards" (See Appendix 12)	SLC/WWF/LEDeG/WII/ Wildlife & Education Departments, local community organisations.	Whole of Ladakh	Ongoing, to be stepped up	-do-	
Alleviate grazing pressure on wildlife habitats & reduce local dependency on livestock through promotion of alternative livelihoods (community based tourism (CBT), horticulture, handicraft etc.)	LEDeG, ,WWF, SLC, WII, local communities, Tourism Department	Nubra/T.Moriri Markha/other areas incl. Kargil District to be identified	-do-	-do-	

Strategies & Actions	By whom	Where	When	Finance
Control wild flora collection, ban forest destruction/wild-life poaching & strictly enforce Wildlife Protection Act: • conduct awareness campaign concerning wild biodiversity legislation, targeting tour operators, tourists, local communities, Govt. Departments, the Armed Forces & the general public • acquisition by Wildlife Deptt of appropriate enforcement equipment (communication kits, weapons etc.)	Wildlife & Forest Departments. Police, Armed Forces, NGOs with direct involvement of local communities	Whole of Ladakh	Start immediately	To be determined
Enforce total ban, in all biodiversity rich areas/PAs, on detrimental activities. This to include biota & artefact collection, "off road" driving, vehicle rallies, shooting, boating, low over flights, road construction and any other major infrastructure development.	DC/Wildlife, Forest Tourism Deptt/Tour operators/Police/ Armed Forces/Home, Defence Ministries/Community Org.	All PAs and biodiversity rich areas	Start immediately	No additio- nal funds required
Remove, alter or relocate obtrusive structures such as concrete fences in wetlands, permanent armed forces establishments (e.g. ITBP base on Tso Moriri shore) away from biodiversity rich areas/PAs in order to prevent disturbance and allow free movement of wildlife.	Wildlife Department., Armed Forces	All PAs and biodiversity rich areas	Start immediately	No additio- nal funds required
Protect wildlife breeding grounds & combat feral dogs meace in the vicinity of Armed Forces establishments & human settlements	Armed Forces, ITBP, local NGOs, NAC, LSPCA	-do-	Start by April 2003	-do-
Apply/develop environmental codes of conduct banning detrimental activities for Armed Forces & DDA	Armed Forces, ITBP, PWD, other development agencies	PAs & biodiversity areas	To start immediately	-do-
Delineate all PAs and areas of biodiversity. Transmit the information including maps to the Armed Forces, ITBP, CPWD, and other developmental Agencies	Wildlife & Forest Departments, WII in consultation with local communities	Whole of Ladakh	Maps to be transmitted 1st half 2003	-do-

Strategies & Actions	By whom	Where	When	Finance
Develop approaches for Community Conserved Areas (CCA) to protect habitats of threatened species such as the Tibetan Gazelle, Tibetan Antelope, Wild Yak etc. This to include cessation/strict control of grazing/biomass extraction. in prime habitats. Examine the case of Bharal CCA in Kibber Wildlife Sanctuary as an example.(see Anon. 2000)	WII, Local Communities & their Organisations, Wildlife Department, WWF, SLC, LEDeG,	Key habitats of endangered spe- cies	From 2003 onwards	To be determined
Strategy: Minimize human – wildlife conflicts				
Conduct population censuses of wild & domesticated ungulates. Study respective habitat use & diets and possible competition between them. Formulate management recommendations. In particular:	WII/Wildlife,Sheep, Animal Husbandry Deptt/ SLC /WWF in collaboration with Loc. Com., Armed Forces (border areas)	Wild ungulates' habitats: Chang Tang & other parts of Ladakh	From 2003 onwards	To be determined
• Conduct census of Tibetan kiang (<i>Equus kiang</i>) population in the spring/fall when Kiangs tend to congregate in and near wetlands, valley bottoms etc.	-do-	Chang Tang	From spring /fall 2003	-do-
• Study impact of livestock grazing on smaller wild fauna such as birds, mammals, reptiles & invertebrates	WII/Wildlife Department/ SLC/WWF	-do- + other ma- jor rangelands	From 2003	-do-
Reduce livestock losses by making livestock corrals predator proof & training herders to improve day-time guarding & animal husbandry practices. Focus intervention on predator prone areas (Markha/Zanskar/other areas to be identified., see Appendix 12)	SLC, WWF, Wildlife Department, local community organisations	Ongoing (Markha, SLC) step up in Zanskar & other areas	Ongoing, to be stepped up	-do-
Indirectly compensate local people for unavoidable losses of livestock to predators by promoting alternative livelihoods & training in new skills (handicraft, horticulture, and community based tourism (CBT).	SLC, WWF, LEDeG & other NGOs, local community organisations	Ongoing (Mar- kha, SLC). Ex- tend to other parts of Ladakh	Ongoing, step up	-do-

Strategies & Actions	By whom	Where	When	Finance
Review policies concerning compensation paid for wildlife depredation with the view of simplifying and increasing compensation packages for livestock losses. Specifically:	Wildlife Department	Leh & Kargil Districts	1 st half of 2003	No funds required
• Conduct periodic reviews of compensation structure. Increase compensation to 50-75% of actual livestock value. Determine budget required based on yearly compensation /arrears disbursed in past years & proposed % increase.	- do -	-do-	Regular review	To be determined
• Examine the possibility of levying compensation/fines in case of killing of wildlife	Wildlife Department	Leh & Kargil Districts	From 2003	No additio- nal funds required
Strategy: Strengthen management capabilities for conservation				
Strengthen conservation management capability of local communities, local organisations & youths in biodiversity rich areas, through awareness and training campaigns	NGOs (WWF, SLC, LEDeG & others), Wildlife Department	Whole of Ladakh	Ongoing	No additio- nal funds required
Enhance Wildlife Deptt. capabilities through training, in- frastructure support (incl. provision of communication, transport & other equipments), additional staff deployment and development of PAs management plans	State & District administration, Wildlife Dept, WII, with NGO support (WWF, SLC, others)	Whole of Ladakh	From 2003 onwards	To be determined
Promote creation of a <i>Wetland Management Authority</i> under the chairmanship of the Wildlife Warden with membership of all main stakeholders, to oversee wetland conservation and wise use in Ladakh. Make a proposal to this effect to MoEF	LAHDC/DC/Wildlife Deptt./ WWF/WII. Members to include the above plus: Forest, Tourism Deptt/community Organisations NGOs/ Armed Forces/ TAAL	Wetlands of Ladakh	To start immediately	No additio- nal funds required

Strategy: Upgrade the conservation status of biodiversity rich areas & ensure community participation in management				
Actions	By whom	Where	When	Finance
Delineate PAs, CCAs & biodiversity rich areas (wetland/natural forest & grassland/grazing reserves etc.). Transmit the information including maps to concerned stakeholders (local communities/authorities/Armed Forces/NGOs etc.)	Wildlife & Forest Departments, Local Communities, WII, SLC, WWF	PA/CCAs & Biodiversity rich areas	To start immediately	No additio- nal funds required
Rationalise PA boundaries to include key habitats of threatened species, based on up to date distribution and abundance data. Secure protection of vital corridors for wildlife dispersion/migration such as Upper Indus Valley	WII, Wildlife & Forest Deptt, WWF, SLC in collabora-tion with Local Communities and their Organisations	-do-	To start in spring/mid 2003	No addition- nal funds required
Promote adoption of flexible PA categories like Man & Biosphere Reserve, allowing graded protection and sustainable use in consonance with existing human use.	Wildlife Deptt/WII/ WWF/SLC in collaboration with loc. communities and their organisations	PA/CCAs & Biodiversity rich areas	To start immediately	No additio- nal funds required
Closely associate local communities in selecting, delineating & managing PAs. Encourage expansion of community conserved areas (CCA) like grazing reserves & continued protection of sacred trees (e.g. Birch = "Stakpa", Juniper = "Shukpa" or "Twoashind").	Wildlife Department, Local Communities, WII, NGOs (WWF, SLC etc.)	-do-	-do-	-do-
Lobby with GOI and international organisations, to protect Ladakh biodiversity areas of global conservation value (Chang Tang Wetlands, Hemis NP, Karakorum WS) under international conventions like <i>Ramsar</i> (one site, Tso Moriri lake already declared), <i>World Heritage Site</i> (proposal under preparation by WWF & UNESCO) and inter-national PA category like <i>Man & Biosphere Reserve</i> . This is to bring international recognition of the natural/cultural significance of the region & provide additional resources for its protection.	LAHDC, Wildlife/Forest Departments, National & International NGOs, (WWF, SLC, IUCN, UNESCO), WII	PAs & key biodiversity rich areas	Ongoing (WWF, WII) Step up	-do-

VI STRATEGIES & ACTIONS FOR MINIMIZING THE IMPACT	OF INFRASTRUCTURE DEVELOP	MENT ON BIO — D	IVERSITY	
Strategy: Minimize the impact of road construction & other				
Actions	By whom	Where	When	Finance
Develop clear policies to strictly limit & control infrastructure development in PAs, other biodiversity rich areas like natural grasslands & shrubland, wetlands and agricultural lands. Such policy is to include the following: (see also Appx. 20: Impact of infrastructure development)	LAHDC, PWD, HIMANK/ GREF, Road Development Organisation (RDO)		Start immediately	No additional funds required
Wherever road construction, infrastructure developments are planned in PAs/biodiversity areas/agricultural land:				
 examine alternate alignments, routes, sites/options to totally avoid such eco-sensitive areas in case no alternative routes/sites exist: 	HIMANK/GREF, PWD, private contractors, (RDO)	PAs & Biodiversity	To start immediately	No additional funds
Obtain prior permission from Forest /Wildlife Departments	HIMANK/CPWD/private contractors/RDO	PAs & Biodiversity	To start immediately	No additio- nal funds
• Strictly follow the guidelines of J&K Forest Conservation Act/MoEF. Specifically, conduct Environmental Impact Assessments (EIA) to identify the likely effects of planned work on biodiversity & develop/implement mitigation measures to eliminate/minimise adverse impact (see also Appendix 21).	HIMANK/PWD/private contractors/RDO/Wildlife, Forest Departments	PAs & Biodiversity areas	To start immediately	No additio- nal funds required
• Ensure that restoration costs are inbuilt in the project	PWD/ HIMANK/ Private contractors, RDO	- do -	from 2003	to be inbuilt in project
Develop/implement regulations & awareness campaigns concerning the exploitation of biological resources such as herbs/medicinal plants/bushes/trees & other bio mass products used as fuel & in building construction.	LAHDC, Forest & Wildlife Departments, PWD, HIMANK, Private Contractors, Panchayats	Whole of Ladakh	To start immediately	No additional funds required

Strategies & Actions	By whom	Where	When	Finance
Specifically protect natural forests & other vegetation on	LAHDC, Forest & Wildlife	Whole of	To start	No
road sides. Enforce ban on bio-mass extraction (tree/bush cutting/wildlife poaching) during construction. Make it man-	Departments, PWD, HIMANK, Private	Ladakh	immediately	additional funds
datory for contractors to provide fuel to their workers. For example, the road about to be built between the Indus Valley and Zanskar will traverse uninhabited areas containing pockets of wild forests including Juniper. Declare these areas as protected before road construction. To this end:	Contractors, Panchayats			required
1. Follow the steps mentioned under I, p.1 <i>Conservation of Natural Forests</i> (mapping/legal status investigation/statutory protection/transmission of information to stakeholders.	LAHDC/ Forest & Revenue Departments/Panchayats/Local Community Organisations	Natural forest areas, biodiversity	First half of 2003	-do-
2. Hand over to Forest Dept. for protection & management in collaboration with local communities.	LAHDC	Natural forests	-do-	Not required
3. Prohibit tree/bush cutting in any infrastructure development. Where absolutely unavoidable, compensate by undertaking plantation of twice to four times the numbers of trees/area deforested. Plantation will be done by the Forest Department & the cost born by the concerned agencies /contractors & reimbursed to the Deptt. before work starts.	Forest, Revenue Departments,, CPWD, HIMANK, Private Contractors, Panchayats.	Whole of Ladakh	From 2003 onwards	Born by concerned agencies/ contractors
Implement awareness programmes for contractors and development agencies during winter focusing on regulations for bio-mass extraction (new J&K Wildlife Act) & the need to prohibit wildlife poaching, tree & bush cutting etc. throughout the construction process	LEDeG & other concerned NGOs with support of Forest & Wildlife Departments	Whole Of Ladakh	First half of 2003	No additio- nal funds required
Request BRO to restore work areas once black-topping work is over. Undertake protective measures during road building to stabilize slopes/provide culverts where required	LAHDC/DC, BRO, PWD, HIMANK	On all roads	Ongoing, step up	-do-

Strategies & Actions	By whom	Where	When	Finance
Prohibit or minimise any alteration to the natural state of streams, surface waters, springs & wetlands	LAHDC/PWD/PHE/Irrigation Deptt/Churpon (resp. for local irrigation channels in villages)	Whole of Ladakh	From 2003	No additio- nal funds required
Strategy: Control new building constructions & minimize the	heir impact on the natural and cult	tural landscapes		
Prohibit private constructions in eco-fragile & bio-diverse areas like lake shores/wetlands/grassland/natural forests	LAHDC/Panchayats/Village Communities	Whole of Ladakh	From 2003	No additio- nal funds
Develop a policy to control and limit private house construction, especially isolated houses, in irrigated areas, PAs and other biodiversity rich areas. Specifically: (See also Appendix 20):	LAHDC, PWD, Agriculture, Wildlife & Forest Departments HIMANK	Agricultural lands/PAs/biodi versity areas	To start immediately	No additio- nal funds required
• Encourage rebuilding of ancestral houses in clusters, building of colonies/plots outside village irrigated areas	LAHDC/ Agriculture Deptt. Panchayats/ NGOs	Agricultural lands	-do-	-do-
• Conduct survey in each village to ascertain reduction in agricultural land over the past 30 years. Establish an action plan to make up for loss of agricultural land.	Revenue & Agriculture Departments	Whole of Ladakh	-do-	No addition- nal funds required
• Establish stone/sand/aggregates quarries away from villages, in such a way that hill slopes are not destabilised	LAHDC/ PWD/ HIMANK/LEDeG	-do-	To start immediately	-do-
Prepare brief guidelines & Do's & Don'ts for house/other building construction, based on climate, solar energy & Ladakh traditional architecture. Conduct a workshop to this end & widely circulate the results to development agencies, Armed Forces, Research Instit, private contractors etc	Construction Dept (PWD)./LEDeG /Secmol	-do-	First half of 2003	-do-
Follow PWD guidelines for building construction applied in Leh, in other parts of Ladakh, especially for military cantonments, generally alien to the traditional architecture style. Request the Armed Forces to submit construction plans to district administration for clearance.	Armed Forces (14 th Corps) are committed to respect local ar- chitecture style. Similar com- mitment to be obtained from Pa- ra-military Forces (ITBP, ITBF)	Whole of Ladakh	Ongoing, to be systema- tically applied	-do-

VII STRATEGIES & ACTIONS TO ENCOURAGE COMMUNITY BASED AND ECO-SENSITIVE FORMS OF TOURISM AS A MEANS TO MINIMISE THE INDUSTRY'S IMPACT ON BIODIVERSITY AND PROMOTE GREATER COMMUNITY CONTROL & EQUITABLE RETURNS TO LOCAL PEOPLE

Strategy: Minimise/prevent the adverse impact of tourism in Protected Areas and other biodiversity rich areas				
Actions	By whom	Where	When	Finance
Establish camp sites, new roads and other constructions at safe distance from protected, eco-fragile & bio-diverse areas such as shorelines, stream banks, wetlands, grazing reserves, natural forest areas etc.	LAHDC/DC/, Panchayats village organisations, Tourism, Wildlife & Forest Departments, Armed Forces	PAs & areas of biodiversity	Ongoing To be stepped up	No additio- nal funds required
Equip campsites which witness large users' concentration and are situated near human settlements (e.g. Korzok, T. Moriri, Markha Valley, Zanskar tourist spots) with appropriate sanitation facilities such as dry pit toilets, solar bathrooms, water taps, parking space for vehicles etc.	District Administration, Tourism Public Health Departments, village organisations, NGOs (WWF, SLC, LEDeG, etc), Travel Agents of Ladakh Association (TAAL)	Initiated by DG Tourism in Stok Kangri base camp, replicate in other tourist "hot spots"	Initiated, to be stepped up from 2003 onwards	To be determined
Ensure appropriate garbage management i.e. regular collection and disposal. To this end make it mandatory for tour groups to remove and take back with them non bio-degradable wastes such as plastics and metal tins to areas of origin (Leh, Manali etc.). Explore possibility of providing jute gunny bags to tour operators for the purpose. Specific:	DC, DG Tourism Department, Division/Block Administration, local organisations, TAAL ,Mountaineering Associations, NGOs	Main tourist destinations and trekking routes	Generalise & step up before be- ginning of 2003 tourist season	No additional funds required
• Introduce garbage control at entry/exit points of tourist vehicles to ensure that non-biodegradable & solid waste is effectively removed by tour groups from ecofragile areas. e.g.: Mahe Bridge / Chilling(Markha)	Wildlife, Forest & Tourism Departments	Check posts at Mahe / Chilling (Markha) & other exit points	from start of 2003 tourist season	No additional funds required
Encourage and generalize regular garbage clean up operations by TAAL, Tourism Department, Kashmir Mountaineers Association, Armed Forces etc.	TAAL, Tourism Department, Kashmir Mountaineers Association, Armed Forces, NGOs (LEDeG, WWF,SLC etc)	Main tourist destinations and trekking routes	Ongoing step up from 2003 onwards	-do-

Strategies & Actions	By whom	Where	When	Finance
Enforce total ban, in all biodiversity rich areas/ Protected Areas, on detrimental activities listed under V p.61 (Wildlife & Habitat protection)	DC/Wildlife/DG Tourism/Forest Deptt/TAAL/Police/Armed For- ces/community Org./ Panchayats	All PAs and biodiversity rich areas	To start immediately	No additio- nal funds required
• Specifically ban vehicle rallies (regularly organised in the Chang Tang in the past 3 years) in all PAs & biodiversity areas (e.g. Tso Moriri, Tso Kar, Hanley etc.)	DC, Wildlife, Forest & Tourism Departments	-do-	-do-	-do-
Strategy: Improve the management of pack animals engage	e <mark>d in trekking tourism.</mark> (also see An	nexure 2. Pack An	imals Managen	nent)
Form and train pony men associations to improve pack animal management and enhance local livelihoods	LEDeG/SLC/other NGOs/local communities/Tourism Deptt.	PAs/biodiversi- ty rich areas	Ongoing, step up	No additio- nal funds
Improve availability of pack animals at starting points of treks by forming local horse/mules pools	Pony men associations, local communities with NGO support (WWF, SLC, LEDeG etc.)	-do-	Ahead of 2003 tourist season	-do-
Organise Health camps and farriery/saddle making training camps for local horsemen	VDIO/Veterinary Corps of the Army/LEDeG/WWF/SLC local community Org./pony unions	All PAs and Biodiversity rich areas	Once a year starting from 2003	To be determined
Ban free grazing by pack animals from outside the region. Organise sale of feed & fodder at starting points of treks. Make purchase by trekking groups mandatory.	Wildlife/Forest/Tourism/Animal Husbandry Deptt/Com.Org./ loc. Councillor/pony men assoc.	All PAs and Biodiversity rich areas	Starting from 2003	To be determined
Strategy: Form, support and train community conserval biodiversity rich areas (see also Appendix 9.14)	tion cum eco-tourism organisatio	ons (e.g. Tso Mor	riri Conservati	ion Trust) in
Conduct environmental awareness campaigns for local community organisations, pony men, local tour staff (guides, cooks, helpers, etc.) focusing on the protection of flora, fauna & local culture, including bans on biota, artefact & antique collection and the need for sanitation/garbage disposal in treks and motorized tours.	Tourism & Wildlife Department WWF, SLC, LEDeG, other NGOs, WII	PAs & biodiversity rich areas (Chang Tang Wetlands, Hemis NP etc)	Already initiated to be stepped up from 2003	To be determined

Strategy & Actions	By whom	Where	When	Finance
Develop capacity for nature tourism at community level to generate new employment opportunities for local people. Provide basic training in wildlife and flora identification/conservation & environmental friendly forms of tourism to local guides, youths and community organisations.	WWF, SLC, LEDeG, & other NGOs, WII, Tourism & Wildlife Departments	PAs & biodiversity rich areas (Chang Tang Wetlands, Hemis NP etc)	Already initiated to be stepped up from 2003	To be determined
Organise similar forms of training for tour guides and staff operating from the main tourist centres	Tourism Deptt/TAAL with collaboration of WWF/WII/others	Leh	step up from 2003	No additio- nal funds
Strategy: Promote Community Based Tourism (CBT) with	Enhanced Women's Role (see als	o Appendix 9.10 &	9.17	
Promote home stay facilities & locally run tented accommodation by helping local people, specially women, to link up with and avail of existing Government schemes & loans for the purpose	LAHDC, Tourism Department Banks, LEDeG, SLC, WWF,	started in Hemis NP, extend to other PAs/ biodiversity	step up from 2003 season onwards	No additional. funds required
Discourage building of hotels which make heavy demands on scarce natural resources, tend to concentrate income in the hands of owners from outside the region and may be- come major source of pollution. Similarly discourage tent hotel run by outsiders which do not benefit local people	LAHDC, DC, Local Community Organisations, TAAL, concerned NGOs (LEDeG, WWF, SLC etc.)	PAs & biodiversity areas opened to tourism	To be stepped up from 2003 season onwards	No additional. funds required
Provide solar bathrooms for campsites in tourism hot spots	LEDeG in collaboration with local communities	-do-	-do-	To be determined
Encourage linkages between local communities/village based conservation -ecotourism organisations and private entrepreneurs/tour operators	Tourism Department, TAAL, District & Block Administration, NGOs	PAs/bio-diver- sity areas	From 2003 onwards	No additio- nal funds required

Strategies & Actions	By whom	Where	When	Finance
Impart skills to local communities/women in particular, to enhance their capacity for income generation & capturing additional tourism revenue. Specifically provide training in:	LEDeG, SLC, Local Community Organisation e.g. Korzok Trust, Tourism Deptt.	See below	See below	To be determined
 Home stay management Camping site management Handicrafts Manufacture/sales Horticulture (local fruit and vegetable production) 	LEDeG, Health Inc. WWF & LEDeG LEDeG SLC	Ursi, Wanla Korzok Kaya, Korzok Hemis NP, Ri- zong Sanctuary	Ongoing from 2003 - do - Ongoing -do-	-do-
Strategy: Raise environmental/cultural awareness of Totaconduct (see also Appendix 9.17)	ur Operators / Tourists & promo	te implementation	of environme	ntal codes of
Develop/ensure enforcement of an environmental/cultural code of conduct by tour guides & operators so that eco/sustainable tourism guidelines are strictly followed:	LEDeG/Wildlife, Tourism, Forest Deptt//WII/WWF/SLC/ other concerned NGOs, TAAL/ Travel Agents, tour guides, local community representatives	Whole of Ladakh	From 2003 onwards	No additio- nal funds required
• Establish a comprehensive list of tour guides & travel agents operating in Ladakh indicating those who are interested in developing/applying such codes of conduct	DC's Office, Tourism Department, TAAL WWF, LEDeG, SLC, other concerned NGOs	-do-	1 st half of 2003	-do-
• Organise workshops with broad participation of the tourism industry & other major stakeholders to formulate environmental & cultural guidelines /Do's & Don'ts for tourists & tour operators.	LEDeG, Tourism, Wildlife, Forest Dept, WII, LEDeG, WWF, SLC, other concerned NGOs, TAAL, Tour operators & guides, local community representatives	Leh	1 st half of 2003	No additio- nal funds required

Strategies & Actions	By whom	Where	When	Finance
Widely distribute such guidelines and make them an integral part of restricted areas permits issued to tourists by printing them at the back of the permits.	DC, Tourism, Wildlife & Forest Department, WWF, SLC, Tour Operators and TAAL	Airport/DC of- fice, bus stands, check posts/tou- rist centres/tour agent offices	From 2003 tourist season onwards	No additio- nal funds required
Reach out a strong conservation message to tourists and other stake holders through direct interactions, posters, brochures, environmental guidelines, media campaign etc.	WWF, SLC, LEDeG, other NGOs, LAHDC, Tourism/ Wildlife/Forest Departments, WII, Media	-do-	-do-	No additional funds required
Develop information/interpretation centres on local fauna & flora/culture/environmental threats/eco-friendly forms of tourism etc. for the benefit of visitors & other stakeholders. Encourage creation of small field museums (e.g. one room in local houses/monasteries) by local communities.	Local community organisations, NGOs (WWF, LEDeG, SLC, NIRLAC, other), WII, Tourism, Wildlife & Forest Departments., LAHDC	Key locations in PAs, biodiversity areas, cultural sites, Leh town	From 2003 onwards	To be determined
Introduce eco-certification schemes for Ladakh tour operators & guides including development of eco-tours. (see also Appendix 9.18)	WWF, SLC, TAAL, Tourism Department	Ladakh including selected routes	Initiated by WWF	Being computed
Levy environmental tax on tourists/tour operators & create revolving fund for natural/cultural heritage protection	LAHDC/DC	To be determined	From 2003 onwards	No additio- nal funds
Use PAs entrance fees (Chang Tang Wildlife Sanctuary, Hemis National Park etc.) for actions/projects fostering biodiversity protection in collaboration with local communities.	Wildlife Department in collaboration with local communities & their organisations	-do-	-do-	-do-

Strategy: Promote awareness & education regarding the value of & need to conserve biodiversity & the cultural heritage of Ladakh					
Actions	By whom	Where	When	Finance	
Raise awareness among stakeholders and the general public of the value and need to protect the environment and the bio-cultural diversity of Ladakh. Use all suitable means to this end: posters, pamphlets, media, public hearings, seminars, workshops	NGOs (LEDeG, WWF, SLC, SECMOL, NIRLAC, LEHO, LNP, WAL etc.) LAHDC, Wildlife, Forest & Tourism Departments, Research Institutions (WII, FRL etc)	Whole of Ladakh	Ongoing, to be stepped up	To be determined	
Raise biodiversity conservation awareness of children, who are the future stewards of Ladakh natural and cultural heritage. To this end, introduce/strengthen environmental education in school curricula focussing on the wild & domesticated biodiversity of Ladakh, its ecosystems & cultural diversity	Education Department, schools, LEDeG, WWF, Health Inc., SECMOL,SLC, NIRLAC with support from Wildlife, /Forest, Agriculture,. Animal/Sheep Husbandry Departments.	Whole of Ladakh	Ongoing, to be stepped up	To be determined	
Extend conservation awareness programmes to Government Departments, District Development Agencies (DDA), whose activities have a direct impact on biodiversity. Emphasize the need to conserve natural resources (water, vegetation, wildlife), the critical importance of biodiversity areas (wetlands, natural forests, grasslands) in a high altitude desert and to plan developments away from them.	WWF, SLC, LEDeG, other NGOs, LAHDC, Wildlife & Forest, Tourism Public Work and Health Departments Research Institutions: WII, SKUAST, FRL	-do-	From 2003 onwards	No additional funds required	

Strategy: Promote collaboration between the Armed Force (See also Annexure 3. to this Chapter: Collaboration between			for biodiversity	conservation
Step up awareness campaigns focussing on the direct contribution the Forces can make towards biodiversity conservation. This includes protective measures in the vicinity of base camps such as protecting wildlife breeding/feeding grounds, combating stray dog menace, conducting regular garbage clean up, helping to control illegal wildlife trade/poaching & enforcing bans on detrimental activities like "off track" driving, shooting, low over-flights and road construction in all PAs and biodiversity rich areas.	14 Corps including Eco-Cells, HIMANK, Ladakh Scouts, ITBP/F with technical support from Wildlife & Forest Departments, WII, WWF, LEDeG, SLC	Whole of Ladakh	Ongoing (WWF) To be stepped up	No additional funds required
Facilitate access to & participate in surveys organised by Wildlife Dept/WII/WWF/SLC in remote/border areas with regular military/paramilitary presence & prime habitats of some of Ladakh most threatened species (Tibetan Gazelle, Tibetan Antelope, Wild Yak, Black-Necked Crane).	14 Corps (Eco-Cells), HIMANK, Ladakh Scouts, ITBP/F	Areas already identified incl.: Hanley, Lal Pahiri, DBO, Hot Spring	To start June-July 2003	No additional funds required
Provide training in wildlife conservation/monitoring to interested members of the Armed Forces	WII	Border/bio-di- versity areas	Start mid- 2003	-do-
IX STRATEGIES & ACTIONS TO FOSTER PARTICIPATIVE KNOWLEDGE DISSEMINATION Strategy: Develop participative management frameworks for the strategy of the strategy of the strategy of the strategy.			HOLDERS &	BIODIVERSITY
Undertake an assessment of development practices, programmes, policies & institutions from ecological, equity, gender and community participation standpoints. Develop on this basis a management framework for biodiversity conservation	WWF/other concerned NGOs LAHDC/ WII/, local community organisations in consultation with Panchayats, GOs & Armed Forces.	Whole of Ladakh	From 2003	No additional funds required

Strategies & Actions	By whom	Where	When	Finance
Undertake assessments of different sectors in village con-	Wildlife, Forest Deptt./NGOs:	Specific locali-	From early	No additio-
texts (e.g. Korzok, Markha valley) & develop model mana-	WWF/LEDeG/SLC, other	ties in PAs/	2003	nal funds
gement frameworks from sound ecological, equity, gender	NGOS in consultation with	biodiversity		required
& community participation perspectives.	Panchayats/Com.Org.	areas		
Promote decentralisation & people's participation in poli-	NGOs, LAHDC, Community	Throughout	Ongoing,	No additio-
cy making by involving local communities at every stage	Organisations	Ladakh	step up	nal funds
Strategy: Promote coordination between biodiversity stake	holders			
Promote co-ordination between the main biodiversity stake	LAHDC, concerned Government	Whole of	To start	No
holders, in particular Government Agencies, to avoid	Agencies, Panchayats, Commu	Ladakh	immediately	additional
duplication and overlap. Establish strict and efficient	nity Organisations, NGOs,TAAL			funds
biodiversity protection enforcement. To this end:	Industry, Police & Armed Forces			required
• Examine a proposal to establish an expert Bio-diversi-	LAHDC, concerned	Ladakh	From 2003	No
ty Strategy Committee under the aegis of LAHDC, to de-	Government Departments, Local			additional
velop/monitor long term policies for Ladakh. Such	community representatives,			funds
committee would comprise of expert groups on	Research Institutions, NGOs			required
science/commerce /industry/legislation/education, training				
& enforcement (See Appendix 9.20).				
• Examine trans-boundary issues & promote in-	LAHDC/Wildlife/Animal, Sheep	Ladakh &	-do-	-do-
formation exchange on pasture management & bio-diver-	Husbandry Deptt, GOI, Local	Tibetan Chang		
sity conservation between Tibetan Chang Tang & Ladakh	Institutions/WWF/WII/ICIMOD	Tang		
Organise stakeholder meetings to formulate a	LAHDC/DC/Govt.Deptt/NGOs	Chang Tang	1st half of	-do-
strategy/integrated management plan for the Chang Tang	local community representatives		2003	
Elaborate & submit to J&K Government a proposal to in-	LAHDC with support from WII		2003	-do-
· · · · · · · · · · · · · · · · · · ·				
Elaborate & submit to J&K Government a proposal to incorporate biodiversity protection into LAHDC Act in conformity with the International Biodiversity Convention & Biological Biodiversity Bill recently passed in Parliament.	LAHDC with support from WII		2003	-do-

Actions	By whom	Where	When	Finance
Constitute a research cell within LAHDC and/or an NGO to function as repository of biodiversity & traditional knowledge research conducted in Ladakh. Inform researchers through pamphlets, posters etc. of their obligation under the terms of the convention to leave copy of their results before departing from Ladakh. Display this information at strategic locations like airport/tourist information centres, travel agencies, hotels	LAHDC, Research Institutions, NGOs e.g. NIRLAC, J&K Government.	Leh	2003-4	To be determined
Establish a comprehensive database on the Trans- Himalayan environment focussing on wild and domesticated biodiversity and indigenous knowledge systems.	WII, GB Pant Institute for Himalayan Environment and Development, SKUAST, FRL, WWF, LEDeG, Wildlife & Forest Departments	Whole of Ladakh	Ongoing, to be stepped up	No additio nal funds required
Conduct regular reviews to share research findings	WII, Other Research Institutions, LAHDC, NGOs	-do-	From 2003 onwards	-do-

ANNEXURE 1. LIST OF MAIN STAKEHOLDERS & PARTICIPANTS IN LADAKH BIODIVERSITY STRATEGY & ACTION PLAN (BSAP) PROCESS

STATE / SUB-STATE ADMINISTRATION

DIMIE! DOD DIMIE!	101111111111111111111111111111111111111		
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14 Corps Eco-Cells			
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