MINISTRY OF NATURE PROTECTION OF TURKMENISTAN

TURKMENISTAN

THIRD NATIONAL REPORT

IMPLEMENTATION OF THE UN CONVENTION ON BIOLOGICAL DIVERSITY

ASHGABAT - 2006

CONTENTS

A. REPORTING PARTY

Contracting Party	Turkmenistan
NATIONAL FOCAL POINT	
Full name of the institution	Ministry of Nature Protection of Turkmenistan
Name and title of contact officer	Jumamurad Saparmuradov, Deputy-Head of the National Institute of Deserts, Flora and Fauna at the Ministry of Nature Protection of Turkmenistan; National Contact Person (NCP) on the Convention on Biological Diversity
Mailing address	Bitarap Turkmenistan Str., 15, Ashgabat, Turkmenistan, 744000
Telephone	(993 12) 39 64 95/ 01 02
Fax	(993 12) 39 01 02 or 35 37 16
E-mail	saparmuradov@mail.ru ; sjuma@untuk.org
CONTACT OFFICER FOR NATIONAL REPORT (IF DIFFERENT FROM ABOVE)	
Full name of the institution	
Name and title of contact officer	
Mailing address	
Telephone	
Fax	
E-mail	
SUBMISSION	
Signature of officer responsible for submitting national report	
Date of submission	

Information on the preparation of the report

Box I.

Please provide information on the preparation of this report, including information on stakeholders involved and material used as a basis for the report.
Ministry of Nature Protection of Turkmenistan and its subdivisions, including: - Flora and Fauna Protection Department ft the MNP; - Environment Protection Department at the MNP; National Institute of Deserts, Flora and Fauna athe MNP;

Ecological Monitoring Center at the National Institute of Deserts, Flora and Fauna;
Hazar State Reserve;
Syunt-Hasardag State Reserve;
Kopetdag State Reserve;
Badkhyz State Reserve;
Repetek State Biospheric Reserve;
Koitendag State Reserve;
Amudarya State Reserve;
Kaplankyr State Reserve;
Forestry Seed Farming and Nature Park Protection Service;
Caspecocontrol;

Ministry of Agriculture of Turkmenistan and its subdivisions:

- Plant Protection Service;
- Flora State Quarantine Service;
- State Seed Farming And Grade Testing Service;
- Scientific Research Institute of Farming;
- Makhtumkuli (Garygaly) scientific production Center of Plant Genetic Resources;
- Etrek Scientific Center of Sub-tropical Cultures;
- Scientific Research Institute of Grain Crops of "Turkmengallaonumleri" Association;
- Association on Veterinary service of Animals and Birds at "Turkmenmallary" Cattle-breeding Association;
- Scientific Research Institute of Cattle Breeding and Veterinary Science;
- State Horse Breeding Association "Turkmenatlary";

State Enterprise on the Caspian Sea Issues under the President of Turkmenistan;
Ministry of Education of Turkmenistan:

- Turkmen State University after Makhtumkuli;
- Turkmen Agriculture University after S.A. Niyazov;

State Fishery Committe:

- State Fish Protection Department;

Ministry of Health and Medical Industry:

- State Sanitary and Epidemiological Inspection;
- National Institute of Raw Drug Materials;
- Turkmendermansenagat Association;

State Customs Service;
Caspian Environmental Programme;
Public Organization for Environment Protection of Turkmenistan;
Turkmen Hunters and Fishermen Union;
National Falco Association;

Emerol Ltd. company (Ireland); Scientific Production Association "RIF"; IMC Consulting, "Sustainable Development of the Caspian Sea Communities"; Scientific Information Center of the Interstate Sustainable Development Commission (SIC ISDC); WWF Representation in Turkmenistan; National Action Programme on Desertification Combat (NAPDC); National Action Plan on Initial Activities to Reduce Greenhouse Gas Emissions.

B. PRIORITY SETTING, TARGETS AND OBSTACLES

Box II.

Please provide an overview of the status and trends of various components of biological diversity in your country based on the information and data available.

Socio-economic situation of the country in general establishes maintaining environment to meet the requirements of the Convention on Biological Diversity. From 2002 up to 2006 Turkmenistan was under the process of implementing the Biodiversity Strategy and Action Plan (BSAP, 2002), which being a government document was approved by the State Commission on ensuring commitments of Turkmenistan under UN environmental Conventions and Programmes, but not approved by the Head of the State and was not adopted as guidelines to be implemented by the national economy sectors. Surplus expenditures to maintain biodiversity and potential were not included into the country budget. Some activities were implemented with support of international donors and governmental financing. Lack of the BSAP Implementation Management and Administration Coordination Group (CG) complicated the issue of collecting information on main biodiversity components for assessment and monitoring of the process of the Convention on Biodiversity implementation by the country.

The overall aim of the National BSAP is *to conserve, restore and sustainably use biological diversity of Turkmenistan for present and future generations.* Twelve national target objectives were determined, which allowed the country to identify the global aim laid down for 2010 in accordance with the decisions adopted by the Convention Conference of the Parties and Secretariat. Monitoring guidelines are aimed at assessing activities laid out by the BSAP and implemented by the end of 2005. The BSAP activities are target objectives of specific programmes on sectoral level. The BSAP actions are distributed within 14 strategic components and each component reflects the relevant Article of the Convention on Biological Diversity.

The issues on global taxonomic initiatives, invasive species, access to use of genetic resources, etc are not reflected in the BSAP to full extent. The initiatives on establishing informational field on GMO products are not developed in the country as.

The Ministry of Nature Protection of Turkmenistan is the key institution in charge of the country environmental policy. The State Commission on Ensuring Implementation of the UN Environmental Conventions and Programmes (SC) and Interstate Sustainable Development Commission (ISDC) are operational mechanism for implementing the Turkmenistan commitments under the UN environmental conventions and programmes. Integrated environment assessment considers biodiversity as one of its indicators. Unfortunately, ways of integration for conservation species diversity in the sectors of economy are not considered in the review *"Sustainable Development of Turkmenistan, Rio+10"* (2002).

The territory of Turkmenistan (*491, 2 thousand square kilometers, without the Caspian sector)* is a center of forming, a zone of overlapping of natural habitats of 7 064 plant species and 12 693 animals, different in ecology, origin and relation to bio-geographical complexes. More than 80% of the territory is occupied by the biggest Karakum desert and nearly 10% is mountains.

By 01.07.2006 the total area of all SPA categories is 1916,02 thousand hectares or nearly 4% of the whole country: reserves – 40,9%, sanctuaries – 55,3%, protected zone – 3,5%, nature monuments - 0,1%. Currently the categories of "national park" and "protected territories on resource management" are absent in the country. Scientific departments of opera-

tional reserves and sanctuaries are research centers that conduct long-term year- round research monitoring of nature ecosystems in three provinces: the Turan *(Repetek, Amudarya and Kaplankyr reserves)*, the Montane Central Asian *(Koytendag reserve*) and the Kopetdago-Horasane *(Syunt-Hasardag and Kopetdag reserves*). Ecosystems under protection are *Badkhyz reserve*, which is at the juncture of the Karakum desert, Kopedago-Horasan mountains and Parapamiz submountain, and *Khazar reserve*, where typically dry desert at the Caspian Sea contacts with the Caspian sea basin.

The Second Edition of the Red Data Book of Turkmenistan (1999) contains 109 plant species and 152 animals, including 107 vertebrates, some of them are under threat of extinction. Up to 80-85% of all biodiversity are gathered on the protected territories, including 102 fauna species included into the National Red Book and 20 ones into the IUCN Red List.

The country scientific potential on biodiversity – ecologists, botanists, zoologists and foresters – includes 264 specialists with significant lack of personnel in general management on efficient introduction and use of nature resources and monitoring on the protected areas (SPA).

Priority Setting

1. Please indicate, by marking an "**X**" in the appropriate column below, the level of priority your country accords to the implementation of various articles, provisions and relevant programmes of the work of the Convention.

Article/Provision/Programme of Work	Level of Priority		
	High	Medium	Low
a) Article 5 – Cooperation	?		
b) Article 6 - General measures for conservation and sustainable use	?		
c) Article 7 - Identification and monitoring		?	
d) Article 8 – *In-situ* conservation	?		
e) Article 8(h) - Alien species		?	
f) Article 8(j) - Traditional knowledge and related provisions		?	
g) Article 9 – *Ex-situ* conservation		?	
h) Article 10 – Sustainable use of components of biological diversity		?	
i) Article 11 - Incentive measures			?
j) Article 12 - Research and training		?	
k) Article 13 - Public education and awareness		?	
l) Article 14 - Impact assessment and minimizing adverse impacts		?	
m) Article 15 - Access to genetic resources			?
n) Article 16 - Access to and transfer of technology			?
o) Article 17 - Exchange of information		?	
p) Article 18 – Scientific and technical cooperation		?	
q) Article 19 - Handling of biotechnology and distribution of its benefits			?
r) Article 20 - Financial resources			?
s) Article 21 - Financial mechanism			?
t) Agricultural biodiversity		?	

u) Forest biodiversity	?		
v) Inland water biodiversity		?	
w) Marine and coastal biodiversity		?	
x) Dryland and subhumid land biodiversity		?	
y) Mountain biodiversity	?		

Challenges and Obstacles to Implementation

2. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the provisions of the Articles of the Convention (5, 6,7, 8, 8h, 8j, 9, 10, 11,12, 13, 14, 15,16, 17, 18, 19 and 20)

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Articles																	
	5	6	7	8	8h	8j	9	10	11	12	13	14	15	16	17	18	19	20
a) Lack of political will and support	2	1			3	3				2	2				2			
b) Limited public participation and stakeholder involvement	1	2			3	3				2	2				3			
c) Lack of mainstreaming and integration of biodiversity issues into other sectors	1	1			3	3				!	!				!			
d) Lack of precautionary and proactive measures	0	2			3	3				2	2				2			
e) Inadequate capacity to act, caused by	1	1			3	3				3	2				2			

institutional weakness																		
f) Lack of transfer of technology and expertise	2	2			3	3				2	2				2			
g) Loss of traditional knowledge	2	2			3	3				3	2				2			
h) Lack of adequate scientific research capacities to support all the objectives	1	1			3	3				2	2				2			
i) Lack of accessible knowledge and information	1	1			3	3				2	2				2			
j) Lack of public education and awareness at all levels	1	1			3	3				2	2				2			
k) Existing scientific and traditional knowledge not fully utilized	3	3			3	3				2	2				2			
l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	2				3	3				3	3				3			
m) Lack of financial, human, technical resources	1				3	3				3	2				3			

n) Lack of economic incentive measures	2				3	3				3	3				3			
o) Lack of benefit-sharing	2				3	3				2	3				3			
p) Lack of synergies at national and international levels	1				3	3				2	1				2			
q) Lack of horizontal cooperation among stakeholders	2				3	3				!	!				!			
r) Lack of effective partnerships	2				3	3				!	!				!			
s) Lack of engagement of scientific community	1				3	3				2	2				2			
t) Lack of appropriate policies and laws	1				3	3				1	2				1			
u) Poverty	0									0	0				0			
v) Population pressure	0				3	3				!	!				!			
w) Unsustainable consumption and production patterns	2				3	3				2	2				2			
x) Lack of capacities for local communities	1				3	3				2	2				2			
y) Lack of knowledge and practice of ecosystem-based approaches to managem	1				3	3				2	2				2			

ent																		
z) Weak law enforcement capacity					3	3				1	1				2			
aa) Natural disasters and environmental change	1				3	3				!	!				!			
bb) Others (please specify)					3	3												

2010 Target

The Conference of the Parties, in decision VII/30, annex II, decided to establish a provisional framework for goals and targets in order to clarify the 2010 global target adopted by decision VI/26, help assess the progress towards the target, and promote coherence among the programmes of work of the Convention. Parties and Governments are invited to develop their own targets with this flexible framework. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box III.

Goal 1	**Promote the conservation of the biological diversity of ecosystems, habitats and biomes.**
Target 1.1	**At least ten percent of each of the world's ecological regions effectively conserved**

I) National target: Has a national target been established corresponding to the global target above?

No	
Yes, the same as the global target	?
Yes, one or more specific national targets have been established	

Please provide details below.

National target –

Increase network of protected areas up to 6% by 2008 and provide their efficient management.

The global target is incorporated in the BSAP strategic component ? . *"In-situ conservation"*.

Main targets of the programme activities

? .1. I*mprove management of protected areas*;

? .4. C*reation of new National Parks.*

By now (2006) the total area of all categories of SPAs of Turkmenistan is nearly 4% of the country's territory. Activities Programme for each existing reserve is considered at the sectoral level of the Ministry of Nature Protection, therefore the importance of maintaining communities and ecosystems both inside and outside the protected areas is stressed.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been

established, please indicate here, and give further details in the box(es).			
Programme of work	**Yes**	**No**	**Details**
a) Agricultural		?	National target has not been established
b) Inland water	?		? .1.1. To review effectiveness of existing protected area management (*Amudarya reserve*) and develop integrated and coordinated management policy; ? .1.9. To provide technical assistance and equipment to Amadarya reserve
c) Marine and coastal	?		? .1.4. To provide technical assistance and equipment to Hazar reserve
d) Dry and subhumid land	?		? .1.1. To review effectiveness of existing protected area management (*Repetek reserve)* and develop integrated and coordinated management policy ? .1.3. To provide technical assistance and equipment to *Repetek reserve* ? .1.5. To provide technical assistance and equipment to *Badkhyz reserve* ? .1.8. To provide technical assistance and equipment to *Kaplankyr reserve*
e) Forest		?	National target has not been established
f) Mountain	?		? .1.1. To review effectiveness of existing protected area management *(Syunt-Hasardag reserve*) and develop integrated and coordinated management policy; ? .1.6. To provide technical assistance and equipment to *Kopetdag reserve* ? .1.7. To provide technical assistance and equipment to *Syunt-Hasardag reserve* ? .1.10. To provide technical assistance and equipment to *Koytendag reserve* ? .4.1. To develop package of supporting documents on the establishment of National Parks; ? .4.2. To develop proposals on organization and development of Sumbar National Park (south-western Kopetdag).

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	
Please provide details below.	

Biodiversity target has been incorporated into the National Environment Protection Action Plan of President of Turkmenistan Saparmurat Turkmenbashi (NEAP, 2002) and Biodiversity Strategy and Action Plan (BSAP). Moreover, biodiversity is one of the priorities of the Caspian Environment Programme (CEP), which entered the second stage of its implementation: *"Implementation of the Convention and Action Plan on the Caspian Sea environment protection"*. Biodiversity Protocol to the Framework Convention on the Caspian Sea marine environment is being developed.

In 2005 the Ministry of Nature Protection developed the project *"Perspective Plan for Development of the Specially Protected Areas (SPAs) Network of Turkmenistan"*. In accordance with the base line principles of establishment the territory of SPAs will be increased up to 6% by the end of 2008. The future of SPAs is development of advanced territories with different regime of conservation (constant and temporary), where zoning principle is combined with involvement of environment restoration stakeholders in Econet. The key element if conversation is a national park (probably, several parks); its opening will be preceeded by the process of harmonization the national legislature and development of ecological and economic mechanism for the protected area management.

Efficient conservation of the region will be achieved through implementation of UNDP project *"Improvement of the Protected Area Management System in Turkmenistan"* (2003-2006). The Programme key complex of activities (? .1.1.) includes five-year management plans of three reserves - Amudarya, Repetek and Syunt-Hasardag – which taking into account the specifics of each one will become the basis for methodology guidelines for the reserves. Development of package of supporting documents on the establishment of the National Park of Turkmenistan (? . 4.1.) is promoted. The first national park of the country in the valley of the Sumbar River in south-western Kopetdag is being developed (? .4.2.). The project outcomes will allow improving quality of the protected area management in all current reserves.

Electronic net and ecological database of all current reserves is supported in the framework of the abovementioned project. Technical and information support and software have been developed for integrated management of the protected areas to provide principal reporting from all subdivisions of the Ministry of Nature Protection (MNP), including database on flora and fauna species from the Red Book of Turkmenistan. Mary Department of the MNP received technical support from the international donor.

International projects of WWF have provided and provide logistical support to Badkhyz, Amudarya, Kopetdag and Syunt-Hasardag reserves.

IV) Please provide information on current status and trends in relation to this target.

The country implemented some definite BSAP planned activities on protected areas (*in-situ*) using its own funds and with support of international organizations. The country is on the way to environment management of SPAs, or rather to sustainable nature use focusing quality improvement of protected area management.

V) Please provide information on indicators used in relation to this target.

Protected territories area;

Self-regenerative (*including* natural and partially natural) and anthropogenic (strongly changed) areas in percentage to the total area.

VI) Please provide information on challenges in implementation of this target.

a) Concept of ecologo-economic mechanism for opening the National Park has not been elaborated;

b) no Coordination Group to manage and administrate the BSAP implementation process;
?) lack of financial, human and technical resources

VII) Please provide any other relevant information.

Further development of the nature protection policy will allow Turkmenistan to conciliate in practice two competitive forms of attitude to nature – *nature use* and *nature protection* establishing such system of habitat management that would enable not only to protect reserved places but promote land productivity as well as to restore areas impaired by the economic activities during the preceding years.

Box IV.

Target 1.2	**Areas of particular importance to biodiversity protected**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	x
c) Yes, one or more specific national targets have been established	

Please provide details below.

National target

Increase network of protected areas up to 6% by 2008 and provide their efficient management.

The global target is incorporated in the BSAP strategic component ? . *"In-situ conservation"*.

Main targets of the programme activities

? .2. Improve network of protected areas;

? .3. Creation and management of Balhan reserve;

? .5. Conservation, restoration and sustainable use of key ecosystems.

Feasibility for organization of a new Central-Karakum reserve is currently under the process of development. The idea on its establishment occurred after publication of the BSAP and, therefore, it was not included in the Strategy document.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		?	National target has not been established
b) Inland water	?		? .2.1. Review scientific principles and criteria for increasing the network of specially protected areas and amendment their borders (*core – territory of Amudarya reserve*). ? .5.7. Conservation and restoration of tugai relic forests along the Amudarya river as a habitat for Buk-

			hara deer (*Amudarya reserve);* ? .5.8. Develop an ecological network as a basis for long-term conservation of ecosystems in Central Asia (core – *territory of Amudarya reserve*).
c) Marine and coastal	?		? .2.1. Review scientific principles and criteria for increasing the network of specially protected areas and amendment their borders (*core – territory of Hazar reserve*); ? .5.8. Develop an ecological network as a basis for long-term conservation of ecosystems in Central Asia (core – *territory of Hazar reserve*); ? .5.9. Conservation of Caspian Sea ecosystems and biodiversity (Hazar reserve).
d) Dry and subhumid land	?		? .2.1. Review scientific principles and criteria for increasing the network of specially protected areas and amendment their borders (*core – territory of Repetek, Badkhyz and Kaplankyr reserves*). ? .2.2. Prepare nominations for sites to be included into the World Heritage List of UNESCO (Badkhyz reserve). ? .5.2. Conservation of black saxaul ecosystems of the Karakums; ? .5.8. Develop an ecological network as a basis for long-term conservation of ecosystems in Central Asia (core – *territory of Repetek, Badkhyz and Kaplankyr reserves).*
e) Forest		?	National target has not been established
f) Mountain	?		? .2.1. Review scientific principles and criteria for increasing the network of specially protected areas and amendment their borders (*core – territory of Kopetdag, Syunt-Hasardag and Koytendag reserves).* ? .2.2. Prepare nominations for sites to be included into the World Heritage List of UNESCO (*Syunt-Hasardag and Koytendag reserves*); ? .2.3. Prepare recommendations to improve the functioning of the protected area system in Central Kopetdag (*Kopetdag reserve);* ? .3.1. Prepare background materials necessary to create Balhan reserve; ? .5.8. Develop an ecological network as a basis for long-term conservation of ecosystems in Central Asia (core – *territory of Kopetdag, Syunt-Hasardag and Koytendag reserves).*

			? .5.10. Conservation of biodiversity of the Koytendag Mountains in Turkmenistan *(Koytendag reserve)*

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

In order to support priorities of the Pan-European strategy the key target on biodiversity has been included into the NEAP and BSAP. Moreover, biodiversity conservation is one of the CEP priorities.

Currently there are 8 state nature reserves (including one biosphere reserve), 14 sanctuaries, nature monuments, dendrology parks, one botanical garden and 3 treatment and health-improving resorts. National parks and protected area on resource management are not available.

The BSAP activities (? .2.1.; ? .2.3.; ? .5.7.; ? .5.8.) are adequately reflected in the objectives of the regional project *"ECONET Development for Long-Term Biodiversity Conservation in Central Asia"* (UNEP/GEF/WWF; 2003-2005). Complex information analysis is integrated into unified format (relief, flora communities, natural habitats of flora and fauna rare species, etc.). In future perspective the territory of regulated nature use will cover 50% of the country's total area, and includes 18 units of ecological structure, i.e. nature areas valuable from biodiversity conservation point of view; half of them belong to the current reserves. The Amudarya River is a nature corridor. Relevant regime of their protection was suggested taking into account local socio-economic environment. For instance, Sumbar National Park project should be considered in the bounds of Makhtumkuli region, and protected area on resource management (buffer zone) should be around it.

Outcomes of the project: to improve current system of protected area management system providing at the same time protection of areas without nature protection status. Programme of works in the framework of ECONET is aimed at integrating net in the context of regional and national sustainable development plans, as well as introducing reliable mechanisms for long-term inter-state cooperation and coordination of actions.

Regional project *"Key Ornithological Areas of Central Asia" (KOA)* is aimed at protecting areas that cover the most representative habitats of birds (? .2.3.; ? .5.10.) and, in particular, threatened bird species; one quarter of its key areas is included into ECONET of protected areas. This nature protection programme was initiated in Turkmenistan at the end of 2004. Process of determination and description of key ornithological areas (approximately 51) was started. Implementation of the project will enable to establish a sustainable theoretical base for development of the national protected area programme and conserve habitats usual for wild birds.

The Ministry of Nature Protection (2004) prepared background materials necessary to create Balhan reserve (a package of documents) (? .3.1.); its priority trend is confirmed in NEAP. The process of the package approval by the government of the country is in progress. Background materials to create Karakum reserve are being prepared (? .5.2.).

In the framework of implementation the provisions of the Convention on the World Natural and Cultural Heritage (1994) a package of documents for nomination Syuint-Hasardag and Koytendag reserves (? .2.2) for sites to be included into the World Heritage List of UNESCO has been been prepared by the WWF Representation in Turkmenistan jointly with the Ministry

of Nature Protection.

Objectives of other international projects are particularly specialized by regions and the outcomes will be achieved by the end of the next stage of the reported period.

The project "Biodiversity Conservation and Sustainable Use of Global Importance in Hazar Reserve on the Caspian Sea Coast" (UNDP/GEF; 2006-2010) aimed at implementing a package of activities has been started: ? .1.4./? .5.9. (BSAP).

The project *"Biological and Landscape Diversity Conservation of the Kugitang Mountains in Turkmenistan"* (UNDP/GEF) was implemented on PDF "? " stage (2002-2004). A package of materials for request of funds for GEF of a much larger project *"Biological and Landscape Diversity Conservation of the Kugitang Mountains in Turkmenistan"* (? .1.10.; ? .4.3.;? .5.10.; BSAP) has been elaborated.

IV) Please provide information on current status and trends in relation to this target.

Implementation of the objectives of the national programme *"Strategy of economic, political and cultural development of Turkmenistan for the period till 2020"* shall enable to establish favourable environment for fulfillment of the country's commitments on the Convention on Biodiversity. Turkmenistan is a country with dynamic economy, where establishment of ecological structure will enable to build flexible regime for protected area conservation. Involvement of the majority part of the territory into cooperation zone of nature protection and agriculture land use ensures sustainable use of resources and biodiversity conservation. Further development and improvement of legislature will enable to elaborate the programme of compensation to local population in return for withdrawal territories for protected areas. Currently the process of implementing activities of this target is in progress and will be continued.

V) Please provide information on indicators used in relation to this target.

Indicator of area conservation, for areas of specific importance for biodiversity; rare species indicator for threatened species (number of rare species).

VI) Please provide information on challenges in implementation of this target.

The country lags behind with introducing the National Park concept and harmonization of legislative and legal basis;

Poor knowledge on eco-systematic approach to management and its application in practice;

List of corridors in transboundary areas is required;

Evaluation of challenge extent for making decisions is needed in Econet implementation.

VII) Please provide any other relevant information.

Box V.

Goal 2	**Promote the conservation of species diversity**
Target 2.1	**Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	x
c) Yes, one or more specific national targets have been established	

Please provide details below.

National targets:

Develop and introduce methods of economic incentives to increase interest of local population in biodiversity conservation by 2010.

Increase investments for 30% to support scientific capacity of institutions addressing biodiversity issues, by the end of 2010.

Effectiveness of research on conservation of species of some taxonomic groups significantly increases if the potential quality level of research is high. It is also important if the research on restoration of rare species quantity is supported by the local population initiatives.

The global target is incorporated in the BSAP strategic component ? . *"In-situ conservation"*.

Main targets of the programme activities

? .6. Conservation of rare and threatened species;

? .7. Conservation of migration corridors;

? .8. Increase the role of the local population in management of protected areas;

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural	?		? .8.1. Develop mechanisms that incorporate stakeholder opinions more effectively into the decision-making process relating to protected areas
b) Inland water	?		? .6.2. Develop and implement action plans to conserve priority threatened species (Bukhara deer; large and small Amu-Dar shovelnose sturgeons).
c) Marine and coastal	?		? .6.5. Continue active management of existing introduced animal populations through translocation (sand gazelle on Ogurchinsky Island);
d) Dry and subhumid land	?		? .7.3.Conservation of saiga and saiga habitat on migration routes, and wintering and summer grounds (Kazakhstan, Uzbekistan, Turkmenistan).
e) Forest	?		? .6.2. Develop and implement action plans to conserve priority threatened species (Bukhara deer; large and

			small Amu-Dar shovelnose sturgeons). ? .7.2. Prepare recommendations for a regional network of protected areas to conserve migratory and wide-ranging species (Asiatic cheetah, grey crane).
f) Mountain	?		? .6.2. Develop and implement action plans to conserve priority threatened species (leopard); ? .6.3. Undertake background studies, and where practical continues existing and develop new reintroduction projects for rare and locally extinct species (kulan, Asiatic cheetah). ? .7.2. Prepare recommendations for a regional network of protected areas to conserve migratory and wide-ranging species (Asiatic cheetah, grey crane).

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Biodiversity target is included in NEAP and BSAP of Turkmenistan. Biodiversity conservation is one of priorities of the Caspian Environment Programme, which initiated its activities on *"Implementation of the Convention and Action Plan on Protection of the Marine Environment of the Caspian Sea"* in May 2004. The Protocol on Biodiversity to the Framework Convention on the Protection of the Marine Environment of the Caspian Sea is being developed. The Red Data Book (1999) is a basic document for restoration of the number of threatened plant and animal species.

Turkmenistan was the first country, the territory of which covers saiga habitat, to sign the *"Memorandum of Understanding on Saiga Conservation, Restoration and Sustainable Use"*. Saiga (*Saiga tatarica tatarica*) is found in northern and north-western parts of Turkmenistan, primarily in Karabogazgol area, Yuzhny Ustyurt and Sarakamysh valley. Saiga usually migrates in Ustyurt area: in winter period – to the south and in spring period - back to the north. Currently winter Ustyurt population totals 2-3 thousand saiga, which is caused by weather conditions.

Hunting for saiga is prohibited in the country. Part of the habitat is protected on the territory of Kaplankyr reserve. Saiga protection issues should be addressed by joint agreed actions of transboundary countries. The Memorandum opens up possibilities for implementing planned actions under the transboundary project (Kazakhstan, Uzbekistan, Turkmenistan) on conservation of saiga and its habitat on migration routes, wintering and summer grounds (? .7.3.).

In the framework of the current *"Memorandum of Mutual Understanding on White Crane Conservation"* (Bonn Convention) field studies on search for grounds suitable for restoration of white crane (*Grus leucogeranus*) migration routes (Western Turkmenistan, eastern coast of the Caspian Sea) and possible winter grounds (south-eastern Turkmenistan) were conducted on the level of civil society initiative. Winter registrations of grey crane (*G. grus*) were conducted in the bounds of habitats (valleys of the Tejen, Murgab, Karakum and Amudatya Rivers) (? .7.2.).

The Ministry of Nature Protection actively cooperates with the WWF Representation on

rare species conservation. With WWF support several projects had been implemented since 1999: *"Leopard Conservation in the Kopetdag"* (1999-2002), *"Tugai Deer Conservation in Turkmenistan"* (1999-2002), *"Conservation of Bukhara Deer and Leopard Populations in their Habitats"* (2002-2006), which enabled to limit reduction of leopard population in the Kopetdag Mountains and tugai deer in the valley of the Amudarya River. The projects were implemented with support of the local population and local authorities.

Population of leopard (*Panthera pardus ssp. saxicolor*) – threatened species (IUCN, 2000) of the Kopetdag – increased from 70-75 individuals in 1999 to 85-90 (2004) ones and currently the number is stable. A new socio-economic approach was developed to provide conditions for leopard coexistence with local population. In 2000 with WWF financial support a system of measures for compensation damage caused by loss of cattle (? .8.1.)to local population in the Sumbar River valley in Makhtumkuli region (south-western Kopetdag). The Law of Turkmenistan on Nature Protection requires that punishment measures for extinction of protected species shall be complemented with incentive measures for their protection. Insurance flock (200 sheep) was produced, a workshop for more than 40 cattle owners was conducted and the Local Community Council as people's body for flock management was established. Local population actively participated in activities planning and implementation, as well as in control of financial resources use (monitoring). Self-administration mechanism introduced in practice enabled to increase the number of flock (approximately 600 heads) and create conditions for restoration leopard population. The developed long-term strategy and action plan for leopard conservation (? .6.2.) combined two main areas: awareness and economic motivation.

In the framework of the project on leopard population conservation a methodology for reintroduction of sand gazelle (*Gasella subgutturosa*), leopard food target, in the western Kopetdag is developed, as the number of this species is reduced (IUCN, 2000). A natural reserve was established on Ogurchinsky Island in the Caspian Sea for reintroduction of sand gazelle to their former habitats. In 2003-2004 fifty six sand gazelles (? .6.5.) were caught on Ogurchinsky Islant and translocated to the western Kopetdag (Hojakali valley). A system of enclosure was built; currently the first group of sand gazelle has been prepared for release.

Since 1998 WWF has conducted activities on restoration of tugai deer number in Central Asia, including Turkmenistan. Bukhara deer (*Cervus elaphus bactrianus*) is listed in the IUCN Red List (2000) as a "vulnerable" species", and in the Red Data Book of Turkmenistan (1999) it is listed a "threatened species". Assessment of Bukhara deer population groups status and their habitat was conducted in the framework of the international programme *"Promotion to Bukhara Deer Population Conservation in Natural Habitats"* (WWF, 1999-2003) and the project *"Support to Bukhara Deer and Leopard in Natural Habitats"* (2002-2006) on the territory of Amudatya reserve and its outskirts.

Due to limited area of favourable habitats and small initial number of animals, who reached no threshold density, the number of deer increased slowly. At the beginning of works (1996-1999) deer remained only on the territory of Amudatya reserve (29-32 animals), whereas in 2004 their number on protected area increased up to 56-65 ones and throughout Turkmenistan – approximately 120 deer. Implementation of the "Action Plan on Bukhara Deer Protection" will enable to establish in the reserve centers for ecological education and development of ecotourism, which will promote harmonization of interrelations between man and nature. Protection and restoration of tugai deer (? .6.2.) within historic habitat in Turkmenistan enabled to optimize protection, to increase the number of species and provide positive attitude of population to the issue of this population conservation (? .8.1.). Memorandum of Mutual Understanding on tugai deer conservation signed in the framework of the Bonn Convention by all four countries of the region is a political outcome of taken endevour.

Technical support to Amudarya (*tugai deer*), Badkhyz (*kulan and gazelle*), Kopetdag and

Syunt-Hasardag (*leopard*) reserves has been and still provided in the framework of all current WWF projects (? .6.4).

A short-term WWF project "*Cheetah*" (2001-2002) allowed conducting assessment of possibility to reintroduce Asiatic cheetah (*Acinonyx jubatus)* – species extinct from the country's fauna – back to Turkmenistan (? .6.3.; ? .7.2.). Historic areas of cheetah natural habitats of were assessed in north-western Turkmenistan (Ayrakly Hills), foothills of the eastern Kopetdag (Meana village and Chaacha) and Badkhyz.

CEP with WB support conducted (2000-2002) special ecotoxicological studies "ECOTOX" to determine causes of mass deaths of Caspian seal (*Phoca caspica*)– endemic species of the Caspian Sea. During last decades Caspian seal population is in tense situation due to reproduction crisis. A great drop in number (approximately for 20%) would cause evident decrease of population (? .6.2.). It was determined that plague was the main cause for seal death, it is not improbable the fact of poisoning.

IV) Please provide information on current status and trends in relation to this target.

Currently the process of activities implementation (restoration of number of different species population) is at the initial stage of development. In the country where the percentage of rare and endemic species, and species on the border of their habitats, socio-economic conditions can facilitate scientific community (including its uncalled part) to develop "*Programme of species diversity conservation*". Principal areas of the programme are conservation of rare species, sustainable use of specifically valuable species, prevention of invasive species introduction and agro-biodiversity. The national programme can be implemented with support from nature protection initiatives of the international, Euro-Asian and national levels.

V) Please provide information on indicators used in relation to this target.

The indicator of changing situation on the issue of biodiversity taxa conservation is an indicator of rare species number growth in the bounds of local habitat.

VI) Please provide information on challenges in implementation of this target.

- Limited participation of community and low level of economic subject involvement;
- Insufficient interrelation on the national and international levels;
- Need to develop a mechanism of economic measures motivation;

VII) Please provide any other relevant information.

Development of the draft "Provisions on Protected Zones and Riverside Areas of the Amudarya River" has been completed, which will positively affect conservation of rare plant and animal species habitats.

Box VI.

Target 2.2	**Status of threatened species improved**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National targets

Achieve integration in planning activities on biodiversity conservation on all levels of government programmes by 2005;

Increase of investments for 30% to support scientific potential of institutions addressing issues of biodiversity, by the end of 2010;

Issues of prevention species survival crisis in BSAP are closely related to improvement of quality of works fulfilled by territorial nature protection services (? .6.4.). Investment proposals on technical support of nature protection subdivisions of Balkan and Ahal provinces are included in NEAP, aimed at improving status of 7 threatened vertebrate species.

The global target is incorporated in the BSAP strategic component ? . *"In-situ conservation"*.

Main targets of the programme activities

? .6. Conservation of rare and threatened species;

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		?	National target has not been established
b) Inland water	?		? .6.1. Develop conservation activities for one of the "key" species as a form of conservation of major ecosystems.
c) Marine and coastal		?	National target has not been established
d) Dry and subhumid land	?		? .6.3. Undertake background studies, and where practical continues existing and develop new reintroduction projects for rare and locally extinct species (kulan, Asiatic cheetah). ? .6.4. Provide technical support to nature protection services of Badkhyz reserve.
e) Forest		?	National target has not been established
f) Mountain	?		? .6.4. To provide technical support to nature protection services of Kopetdag reserve. ? .6.6. Improve logistical support to bio-technical ac-

			tivities to maintain snake populations on the edges of the protected snake refuge (Kopetdag reserve).

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Biodiversity target is included in NEAP and BSAP of Turkmenistan. The Red Data Book (1999) is a basic document for restoration of the number of threatened plant and animal species.

Regional scientific-research project *"Correlation of Risk of Biodiversity Threat in Central Asia"* (INTAS, 2001-2003) was implemented to improve assessment methodology in Turkmenistan. Categories of risk of species threat on the regional level were identified. The issues of conservation of large Amu-Dar shovelnose sturgeon (*Pseudoscaphirhynchus kaufmanni*) and small large Amu-Dar shovelnose sturgeon (*P. hermanni*), as threatened species (? .6.2.), were considered in the framework of the project "Research on biology and conservation of threatened sturgeon of *Pseudoscaphirhynchus* species in Central Asia" (CRDF, 2004-2005). Both species are listed in the IUCN Red List (2000) and the Red Data Book of Turkmenistan (1999).

Activities on conservation of threatened species in Turkmenistan are in progress. First outlines appear on activities for improvement of status of the threatened species listed in the IUCN Red List (2000) - kulan (*Equus hemionus ssp. onager)* and oxus cobra (*Naia naja ssp. oxiana*) populations - and species reducing in number – gyurza (*Makrovipera lebetina*). During last years necessary prerequisites were created in the country to transfer these species to the category of restored taxa.

In 1999 kulan population in Badkhyz reserve was visually estimated in the amount of 200-300 animals (in 90s of the last century there were 5000 kulans). Due to stable efforts of the Ministry of Nature Protection of Turkmenistan and international support of donors (Munich Zoology Society, Sill-Dur Foundation, Vienna Zoo, USA Trust WWF) and implementation of the project *"Kulan Conservation in Turkmenistan"* (2001-2003; WWF) this threatened population was saved. Strict protection enabled to increase the number of animals to 900 heads by the end of 2004. Donor funds were allocated for procurement of powerful pumps to restore the work of artificial ponds and for technical support to the territorial nature protection services of Badkhyz and Kopetdag reserves (? .6.4.).

Common efforts brought to concentration of kulans in groups; many young kulans were born and survived. The Action Plan on stabilization number of Badkhyz kulan population in the region was developed. If the number of kulans is not less than 2000-2500 heads, then their economic use will be possible on the territories adjacent to SPAs. Such number corresponds to capacity of Badkhyz population habitats. Experience showed that exceeding in kulan number causes degradation of reserve ecosystem and conflict with local population.

Excessive consumption of cobra and gyurza poison (1965 - 1990) dramatically altered natural species populations in snake refuge and, in particular, in Kopetdag (? .6.6.). Among the investment projects of NEAP the critical situation on status of gyurza number is specifically focused (VI/ 80). Prohibition of snake export from the country and closure of three serpentines created favourable conditions by the beginning of a new millennium for restoration of their populations within habitats. Without additional state and donor finances the number of cobra and gyurza in accordance with herpetologists' data has approximately increased twice. Stabili-

zation of situation during 4-5 years will enable to approximate their number to commercial level and to raise their status. Further registrations of snake number (monitoring) will be a basis for developing Action plan on sustainable use of these species.

IV) Please provide information on current status and trends in relation to this target.

Recently the research on animal taxa, including their number registration and monitoring has significantly reduced.

V) Please provide information on indicators used in relation to this target.

Species number is an indicator that confirms its status.

VI) Please provide information on challenges in implementation of this target.

BSAP has not yet been approved by the government;

Lack of financial, human and technical resources

International support is required to increase investments for maintaining scientific capacity of institutions and some specialists (independent experts) that specialize in biodiversity.

VII) Please provide any other relevant information.

Biodiversity conservation targets are not included in sectoral strategies of the country, with the exception of agriculture sector.

Box VII.

Goal 3	**Promote the conservation of genetic diversity**
Target 3.1	**Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National BSAP targets:

- Improve conservation of agro-biodiversity and ex-situ nature genetic fund for 30 % , by the end of 2008;
- Develop and introduce methodology for economic stimulation to increase local population interest in biodiversity conservation, by 2010.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		G.2 Evaluation of local status of agro-biodiversity. G.2.4. Conservation of agro-biodiversity in situ/on farm in Central Asia

			? .1. Develop incentives for biodiversity conservation within sustainable agricultural production. ? .2. Economic assistance to farming communities living next to protected areas.
b) Inland water		?	Relevant programmes have not yet been developed
c) Marine and coastal		?	------- // -------
d) Dry and subhumid land		?	------- // -------
e) Forest		?	------- // -------
f) Mountain		?	------- // -------

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	x

Please provide details below.

Issues of genetic diversity of crops, livestock and related knowledge of local population are one of the key targets of Turkmenistan BSAP (2002).

The national programmes "Strategy for Socio-Economic Changes in Turkmenistan for the Period till 2010" and "Grain" are also in progress. The "Strategy for Economic, Political and Cultural Development of Turkmenistan for the Period till 2020" programme of President Saparmurat Turkmenbashi was developed as well.

Joint programme "Conservation, Study and Use of Genetic Resources of Agriculture Crops" is implemented in the framework of the Memorandum on Cooperation between ICARDA and the Ministry of Agriculture of Turkmenistan (September 2003).

The programme includes the following priority sub-programmes:

Field crops genetic plasma improvement

I.1. Improvement of wheat varieties *(Triticum L.),* barley *(Hordeum L.)* and legumes *(leguminous plants);* strengthening national breeding programme and determination of new perspective production lines, seed quick reproduction and their introduction on farm fields.

I.2. Plant genetic resources

In 1999 with support of the International Institute of Plant Genetic Resources (IPGRI) and International Center of Agriculture Research in Arid Regions (ICARDA) a Plant Genetic Resources Net (PGR) of Central Asia and Transcaucasia (CATCN-PRG) at the CGIAR Consortium. In the framework of the structure (CATCN-PRG) a PGR sub-division on ICARDA mandatory grain-crops was established at the Turkmen Scientific and Research Institute of Grain-Crops. ICARDA Center provided computer equipment to make up inventory and documentation of all available plant collections and supported training of specialists.

In 1999 the Ministry of Agriculture jointly with ICARDA and CLIMA, Australia, organized research expedition to south-western Kopetdag. During the expedition 121 variety samples of 44 grain crops *(Gramineae)*, pasture, forage, food crops and legumes (*Leguminosae)* and their wild relatives were collected from 32 plots.

In 2002 with support of the Australian Center for International Agriculture Research (ACIAR) the Ministry of Agriculture and Russian Institute of Plant Cultivation after Vavilov (RIPC, Russia) the expedition to south-western Kopetdag was organized. During the expedition 413 variety samples of grain crops *(Gramineae)*, legumes *(Leguminosae)* and their wild relatives as well as forage and pasture species were collected.

Livestock-breeding management

In 2000-2003 research was conducted in the framework of the project "Integrated Forage-Breeding and Livestock-Breeding in Steppes of Central Asia", with financial support of the International Fund for Agriculture Development (IFAD). Main outcomes of the project were: introduction of technologies to restore exhausted pastures; improves forage-breeding base through use of drained water; methodologies for flock management and strategies for fattening livestock for market; new forage crops *(Atriplex*) and forage cactus *(Opuntia gen)* were imported and tested for introduction in local conditions.

IV) Please provide information on current status and trends in relation to this target.

Genetic diversity of agriculture crops and livestock remains in the competence of relevant institutions of the Ministry of Agriculture of Turkmenistan (Livestock Shareholding Association "Turkmenmallary", Magtymkuli Research Center of Plant Genetic Resources, Institutes of Farming and Grain-crops, Etrek Research Center of Sub-tropical Cultures, Institute of Cattle-breeding and Veterinary, State Association "Turkmenatlary"); institutions of the Ministry of Nature Protection (8 reserves), Shareholding Society "Gok Gushak", as well as Ashgabat Zoo and Falcon Society.

Traditional knowledge on cattle-breeding (*chaban*), horse-breeding (*seyis*), gardening, melon-growing and farming is usually maintained and transferred from farther to son or from tutor to student. Production company "Buyan" conducts research of natural bushes (it includes a number of activities: current status, assessment, resources and forecast) of *Glycyrrhiza glabra*.

The National Gene Bank of Turkmenistan was established in March 2005. It is located in "Ak Bugdai" (*White Wheat*) Museum of the Grain Crop Research Institute. Currently the Gene Bank is increasing with seed samples. As a result of cooperation with Makhtumkuli research and scientific center of PGR, Russian Institute of Plant Cultivation and Uzbek Research Institute of Plant Cultivation local and aborigine wheat grades and barley (nearly 200 grades) as well as samples of Turkmen wheat and barley from Russia and Uzbekistan were received to increase the number of samples in the gene bank.

In the framework of the Plant Genetic Resources Net (PGR) of Central Asia and Transcaucasia (CATCN-PRG) with support of the International Institute of Plant Genetic Resources (IPGRI) the project *"In situ/On Farm Agrodiversity Conservation in Central Asia"* was developed. The goal of the project is to conserve agro-biodiversity (fruit cops and their wild relatives) on farms. The project aims at providing farmers, research institutions and local communities with opportunities to use knowledge, methodologies and strategies for in-situ/on farm conservation of fruit crops and their wild relatives. Conservation of these resources will enable farmers to increase productivity of their farms and improve standards of life in the whole region.

"Strengthening Public Institutions to Support Plant Genetic Resources Conservation and Use on the Territories of Uzbekistan and Turkmenistan" project was being implemented in

2002-2005 by IPGRI jointly with ????? and System-wide programme of joint activities and property rights (CAPRi). In the framework of this project issues of changes in land use system and rural organizations/communities were studied, which affect plant genetic resources conservation and use in Turkmenistan and Uzbekistan.

Currently to restore apple-tree collection at Makhtumkuli research and production experimental center for plant genetic resources the IPGRI and Global Fund for Crop Diversification project "*Conservation of Significant Apple-tree collection in Turkmenistan and Kazakhstan*" is implemented (2005-2007). A number of apple-tree grades have been restored through establishment of nursery gardens and purchase of necessary machinery and horticultural sundry.

V) Please provide information on indicators used in relation to this target.

Number of local grades, samples and varieties of conserved crops.

"Ak Bugdai" Museum, national gene bank with samples;

Improved wheat, barley and legume crops;

Grade samples of grain-crops, pasture, forage, food, legume crops and their wild relatives;

Technologies for restoration exhausted pastures;

Methodologies for flock management and strategies for fattening livestock for market.

VI) Please provide information on challenges in implementation of this target.

No national programme on conservation genetic resources of plants/animals;

Kartahen Protocol on Biosecurity not ratified;

Lack of highly skilled personnel

Lack of technical equipment and financing;

Lack of efficient share of information and unified information network.

VII) Please provide any other relevant information.

Currently Turkmenistan has actively involved in process of dialogue on genetic diversity conservation.

Box VIII.

Goal 4	**Promote sustainable use and consumption.**
Target 4.1	**Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	x
c) Yes, one or more specific national targets have been established	

Please provide details below.

National targets:

- *Develop a plan for bio-resources management to reduce their over-exploitation by 2006 and ensure its implementation.*

The global target is incorporated in the BSAP strategic component ? . *"In-situ conservation"*.

As main ecosystems degradation increases, the demand for "services" provided by these ecosystems is growing. Sustainable use of biodiversity components (Article 10 of the Convention) is a mechanism through which conservation of biodiversity is related to sustainably managed sources and correlated with the needs of local population.

Main targets of the programme activities

- ? .1. Sustainable use of biological resources.
- ? .3. Establish new model self-sustaining centers for harvesting wildlife

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	? .1.5. Encourage sustainable use of natural liquorice bushes (undertake economic evaluation, train farmers in liquorice cultivation– *Glycyrrhiza glabra*, establish a processing plant for natural liquorice)
b) Inland water	?		? .1.1. Identify types and extent of biological resources and prepare recommendations for their sustainable use
c) Marine and coastal	?		? .1.3. Promote sustainable utilization of Caspian Sea fisheries resources including sturgeon
d) Dry and subhumid land	?		? .1.6. Review quotas for production and sale of natural resources (including hunting) in accordance with changes in their status; ? .3.1. Prepare groundwork to create a new model of hunting / sport fishing farm;

			? .3.2. Prepare groundwork to create new model fish farms
e) Forest	?		? .2.1. Develop and implement a package of activities in forestry and sustainable use of forest resources
f) Mountain	?		? .4.2. Encourage farmers to grow local medicinal plants by providing logistical support

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Sustainable use of biodiversity target has been incorporated into the NEAP and BSAP. Protocol on Biodiversity to the Framework Convention on the Protection of the Marine Environment of the Caspian Sea is being development in the CEP framework. Implementation of the regional "Strategic Action Plan" (2004, GEF) will enable State-Parties (Russia, Kazakhstan, Azerbaijan, Iran, Turkmenistan) to address specific national issues on fishery sustainable management.

Foundation for transfer to sustainable use of natural resources has been laid in the country. For instance, a complex for artificial breeding of sturgeon species and caviar production will be constructed in the coastal area of the Caspian Sea in Kiyanly village. (? .1.3.). This project is aimed at conserving valuable fish species of the Caspian Sea through their sustainable reproduction. The first stage of the production cycle includes establishment of shoal; the second stage is growing young fish. Main stages of activities are: artificial breeding of sturgeon on the basis of 'from spawn to spawn", breeding of young fish for stocking the Caspian Sea and establishment of gene bank for sturgeon reproduction (white sturgeon – *Huso huso*, Russian sturgeon – *Asipenser gueldenstaedtii*, stellate sturgeon – *A. stellatus*).

Large-scale nature resources development of the Caspian Sea caused reduction of its nature resources. Small-grant programme "Sustainable Development of Caspian Communities" of the CEP second stage is aimed at reducing and preventing excessive use and consumption of natural resources in the Caspian Sea region. Establishment of alternative life-support sources for local population enabled to reduce use of natural resources of the Caspian Sea. Forty two different projects on alternative life support (live-stock breeding, poultry-farming, providing services to population and advice services, etc.) have been implemented, which as a result are focused on conservation of the Caspian biodiversity.

In accordance with the current Law "*On Hunting and Hunting Farm Management*" (1998) there is no category of "hunting farm" as a form of land use. However, every year the Ministry of Nature Protection opens a season for amateur hunting on the territories of assigned hunting farms. Hunting is regulated by periods and is allowed only for licensed objects. Nevertheless, a feasibility for establishment a new model for hunting as a centerr with self-sufficiency closed cycle has not been developed (? .3.1./? .3.2.). Technologies for growing liquorice (*Glycyrrhiza glabra*) and other medicinal plants are developed and operational. Quotas for production of the raw crop have been decreased in accordance with the economic needs of the country. Pursuant to the Decree "*On Measures to Protect Wild Liquorice, Poisonous Snakes and Products for their Vital Activity*" (1992) the production association "Turkmendermansenagat" produces the raw crop only in natural agrocoenoses, on a specially allocated areas for this crop

(? .1.5.).

To support local communities living in SPA adjacent territory administrations of "Turkmenmallary" Association and Kopetdag, Syunt-Hasardag and Badkhyz reserves of the MNP signed agreements in 2005. Local population got permissions to seasonal pasture of domestic animals on the territory of sanctuaries of these reserves.

Conservation of some animal and plant species (*medicinal and ornamental*) is provided through their conservation on the territory of Ashgabat Botanical and Zoological Gardens and in the reproduction centers of the reserves. The President of Turkmenistan and Administration of Ashgabat city made a decision of design and construction of a new zoological garden, national museum of nature on the territory of 40 hectares. The garden is planned to be commissioned at the beginning of 2007. The collection of the garden will include 300 animal species, the majority of which are representatives of the country's fauna.

IV) Please provide information on current status and trends in relation to this target.

The nature protection policy of Turkmenistan has been included into the *"Strategy of Socio-economic Changes in Turkmenistan for the Period till 2010"* is focused on spirituality rebirth, which is core for sustainable development of the country. Priority of spiritual over material (Ruhnama, 2001) will promote sustainable development both in economy and ecology.

V) Please provide information on indicators used in relation to this target.

Indicator: total number of withdrawn important species with respect to the norms of sustainable withdrawal.

VI) Please provide information on challenges in implementation of this target.

a. BSAP as a document is not legally binding and valid;
b. Insufficient consideration of biodiversity issues in other sectors and inclusion these issues into their activities;
c. Lack of adequate scientific and research potential to support these targets;

VII) Please provide any other relevant information.

The government conducts policy of providing support to squirearchy (agro-biodiversity) and develops economic mechanism on the basis of economic methodology of management. On the inter-sectoral level activities related to imposing taxes in agriculture production as well as measures of inter-payments with farming associations for governmental order have been developed.

In order to motivate growth of valuable agriculture plants production the following legal regulations were developed and adopted:

- Law on Seeds (June 18, 1996)
- Law of Turkmenistan "On Food Security" (2000)

Box IX.

Target 4.2	**Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National target

- *Develop a plan for bio-resources management to reduce their over-exploitation by 2006 and ensure its implementation.*

The global target is incorporated in the BSAP within two inter-related strategic components:

D. Institutional strengthening and capacity building;

? . *Incentives, -*

The process of reducing unsustainable consumption of biological resources is at the stage of planning, when introduction of new methods of motivation can improve the effect of production regions management.

The most active in addressing this issue is CEP. Implementation of the project "*Sustainable Development of the Caspian Sea Communities – Azerbaijan, Kazakhstan, Russian Federation, Turkmenistan*" (2004-2006, TACIS-??) is focused on reduction and prevention of excessive use of the Caspian Sea nature resources.

Foundation for implementation of specific BSAP activities has been laid - ? . 1. *Develop incentives for biodiversity conservation within sustainable agricultural production.*

One of the issues of the CEP Strategic Action Plan (2004, GEF) is unsustainable use of bioresources; its implementation will provide in the framework of future projects to establish relevant potential and build up a basis for improvement the situation.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural	?		? .1.3. Provide and publicize grants, and provide training, to stimulate introduction of new agricultural techniques favourable to biodiversity (e.g. grants for local villagers to grow olives as alternative to reduce anthropogenic pressure on natural pastures)
• Inland water	?	b)	Work programme in being developed
c) Marine and coastal	?		? .1.3. Provide and publicize grants, and provide training, to stimulate introduction of new agricultural techniques favourable to biodiversity (e.g. grants for local villagers to grow olives as alternative to reduce anthropogenic pressure on natural pastures)

d) Dry and subhumid land	?		D.1.1. Enhance state and public institutional mechanisms for the conservation and sustainable use of biodiversity D.1.2. Provide infrastructure for management and sustainable use of biological resources at the Ministry of Nature Protection
e) Forest	?		? .3.4. Ensure application of disincentive measures for activities which negatively impact biodiversity
f) Mountain		?	National target has not been established

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

Implementation of the project "*Sustainable Development of the Caspian Sea Communities – Azerbaijan, Kazakhstan, Russian Federation, Turkmenistan*" (2004-2006, TACIS-??) is aimed at mitigating socio-economic conditions of local population. Positive changes in life of local population are aimed at decreasing reduction of rare fish and water bird species populations.

It is known that local communities of the Caspian coast suffer from reduction of fish stock. Lack of conditions for fish spawning in the Etrek River against the shortage of adequate (alternative) social infrastructure in rural area complicated survival conditions of local population. Small-grant programme in the framework of CEP enabled local communities to develop alternative and sustainable sources of their life-support. As a result, the local community of Etrek region established the production of olive oil. A small poultry farm was constructed in Karabogazgol, and cattle farm – in Hazar. People became experienced in developing alternative, sustainable source for their life support; they understood how to reach economic rebirth of the region in conditions of less impact to local nature resources. Management of production regions while developing incentive methods allow to use products made of natural raw stuff providing at the same time biodiversity conservation. A new trend in rural development of the Caspian coast is developed for many years ahead.

IV) Please provide information on current status and trends in relation to this target.

As the CEP Regional Strategy Action Plan (2004, GEF) is implemented the situation will also positively change, in particular, regarding fish resources.

V) Please provide information on indicators used in relation to this target.

Indicators:

a. Extent of desertification process expansion;
b. Indicators of number of sturgeon, carp and other fish species.

VI) Please provide information on challenges in implementation of this target.

a. BSAP as a document is not legally binding and valid;

b. Insufficient consideration of biodiversity issues in other sectors and inclusion these issues into their activities;

c. Lack of adequate scientific and research potential to support these targets;

VII) Please provide any other relevant information.

Box X.

Target 4.3	**No species of wild flora or fauna endangered by international trade**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National target

Revise and develop nature protection laws in accordance with the Convention on Biological Diversity to fill the gaps in legislature, by the end of 2006.

Biodiversity has no borders and in order to combat ecological crimes against wild fauna it is important to cooperate internationally. Therefore, the global target is considered as a set of activities of the BSAP strategic component I. *Cooperation*, which touches it only on the level of general approach to legislature without focusing on issue of species protection from international trade.

By now Turkmenistan has not signed the Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS, 1979) and has not acceded the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; 1975), though Turkmenistan fulfills its requirements. All bordering countries or those with whom Turkmenistan has intensive communication are Parties of CITES and responsible for their commitments under the Convention. In turn, movement of commodities through the state border of Turkmenistan is regulated by the current national legislative basis (Customs Code and by-laws).They are in accord with CITES and ensure to control export, import and transit of all moving rare threatened species and their derivatives, which are under the validity of the Convention. Further process of harmonization of the national legislature is linked with expanding the list of goods prohibited for export and its concordance with the CITES Lists (Annexes) (I. 2.2.), making Customs procedures tougher.

Excessive exploitation of natural animal and plant populations both on the level of local poaching and threats from international trade is on the leading place among the treats to species diversity. In the framework of this strategic component programme of works (I.1.2.) on regulating import, export and transit shipping of threatened species is planned. Twenty seven fauna species (steppe tortoise, erne, grey eagle, grey crane, marsh owl, etc.) and 6 flora species (*spurge ??????????????, ?????????? ????????????, Fedchenko otchis, etc.*) that fall

under the CITES were not included into the Red Data Book of Turkmenistan (1999).

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	National target has not been established
b) Inland water		?	National target has not been established
c) Marine and coastal		?	National target has not been established
d) Dry and subhumid land		?	National target has not been established
e) Forest		?	I. 2.2. *Develop and implement protocols for regulating import, export and transit shipping of threatened species.*
f) Mountain	?		I. 2.2. *Develop and implement protocols for regulating import, export and transit shipping of threatened species.*

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	x
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Global key target – *no species of wild flora or fauna endangered by international trade* – is not included into the BSAP. But it is indirectly reflected in the BSAP on the level of international cooperation without specific activities related to international trade.

IV) Please provide information on current status and trends in relation to this target.

Current mechanism of Customs control and control from the Ministry of Nature Protection (licensing function), as well as relevant control from contiguous State-Parties of the Washington Convention (for instance, Russia) enables to control and limit export of species enlisted in CITES Annexes from Turkmenistan. The Ministry of Nature Protection issues licenses for import and export of wild fauna and flora species. Currently export of wild fauna and flora species is not a basis of the country's economy and population survival factor.

V) Please provide information on indicators used in relation to this target.

Current legislative and regulatory basis of Turkmenistan on national property protection of the country.

VI) Please provide information on challenges in implementation of this target.

a. The country did not accede to the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; 1975);
b. Limitations of legal coercion.

VII) Please provide any other relevant information.

One of the factors that limits implementation of this target is imperfection of mechanism to manage and regulate activities of executive bodies system. Weak mechanism of inter-sectoral and inter-institutional cooperation and coordination also impedes prevention of threats of illegal export of specific biodiversity components from the country.

Box XI.

Goal 5	**Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.**
Target 5.1	**Rate of loss and degradation of natural habitats decreased**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	X
c) Yes, one or more specific national targets have been established	

Please provide details below.

National target:

- *Reduce process of natural landscapes degradation for ?? 30% of their territories, by 2010.*

Turkmenistan acceded the Convention to Combat Desertification (1996) and Framework Convention on the Protection of the Marine Environment of the Caspian Sea (2004). However, rate of land degradation, which affected nearly 50% of all territory of the county, is difficult to stabilize. Key ecosystems in the balance of biological diversity are partially degraded or used at full strength without restoration.

Erratic distribution of water sources in desert and mountains caused emergence of desertification areas around wintering, wells and ponds along the cattle routes. Therefore, each step in the BSAP on conservation biodiversity components habitats is deeply intertwined with activities in the framework of the National Action Programme on Combat Desertification and NEAP, which directly or indirectly aimed at mitigating the process of growth degradation. General efforts can reduce the rate of loss and degradation of natural habitats of all animal and plant representatives. The Presidential Decree *"On Approval Rules of Turkmenistan Coastal Waters Protection from Vessel Pollution"* (2005).

The global target is incorporated in the BSAP strategic component G. "Study".

Main targets of the programme activities:

G.1. Study and conservation of key components of biodiversity.

G.3. Applied research in biodiversity conservation.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**

a) Agricultural	?		Programme of work for implementation is envisaged
b) Inland water	?		Programme of work for implementation is envisaged
c) Marine and coastal	?		Programme of work for implementation is envisaged
d) Dry and subhumid land	?		G.3.5. Inventory and map natural ecosystems modified by human influence
e) Forest	?		Programme of work for implementation is envisaged
f) Mountain	?		G.1.5. Conduct studies of population structure and intra-specific diversity of wild pomegranate and valuable forms of wild pistachio

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	x

Please provide details below.

The national Presidential programme "Strategy for Socio-economic Changes in Turkmenistan till 2010" was adopted. Four priority areas were determined for its implementation: to ensure economic, food, social and ecological security. Ecological security provides a set of measures focused on addressing paramount issues, in particular: combination of industrial development of the country with environment protection; prevention of ecological disaster in the Aral Sea area; provision of population with quality drinking water; strict observance of standards related to use of dangerous for humans substances in agriculture, combat with soil salinity and erosion, reduction of harmful emissions into air.

In the framework of the Convention to Combat Desertification (1996) the National Action Programme to Combat Desertification (NAPCD, 1997) was developed. Four priority areas were determined in the NAPCD: to establish long-term year-round pastures; to develop and build a small solar energy unit; rehabilitation of environment in the Aral area; to protect key engineering structures from sand drift.

Interrelation between the state of biodiversity and desertification process is shown in the NAPCD. A set of activities was elaborated in the framework of the NAPCD, including activities to conserve biodiversity, to protect and conduct further studies of rare and threatened plant and animal species, to increase areas of reserves.

Reduction of burdens to biodiversity is a constituent of the Turkmenistan NEAP. This issue is considered in the framework of the BSAP, sub-regional programme to combat desertification in Central Asian countries (2003) and the Caspian Environment Programme.

In the framework of the NAPCD the project *"Combat Land Degradation in Three Regions of Turkmenistan"* (2002–2005) was implemented. The outcomes showed actual capacity for strengthening and afforestation of moving sands in Central Karakum and reduction of water erosion affect on mountainsides. Local population of Mary oasis tested a package of methodology to restore mean-saline and loose-saline soils on their lands; became familiar to production of organic fertilizers; established greenhouse farming to grow vegetables and nursery for coniferous trees. All these became feasible due to use of modern techniques developed by the staff of

NIDFF with support of the German Society on Technical Cooperation (GTZ) in the framework of UN CCD.

In the framework of GTZ/GEOPLAN project jointly with NIDFF activities are conducted on elimination of negative factors of land degradation in accordance with conservation and efficient use of plant resources.

Natural forage lands of Dashoguz province (G.3.5.) were mapped in the framework of the project *"Assessment and Monitoring of Pasture Degradation Processes in Turkmenistan Using Distant Methodology"* (2003-2006) with support of the Research Institute of Desert at Ben-Gurion University, Israel. Activities within the project "Assessment and Monitoring of Land Degradation Caused by Salinization and New Phyto-amelioration Methodoloty Testing in Turkmenistan" (2001-2005) was aimed at determining forage production capacity on lands of secondary salinization in Dashoguz province. A recommendation on cultivation local forage halophyte plants (*Salicornia curopaca, Salsola orientalis, Atriplex micrantha, Haloxylon aphyllum*) using drainage waters for their watering was developed.

The project *"Pistachio Species Collection, Description and Hermoplasma Exchange"* (1999-2004) focused on study of biology ecological specifics of wild and cultivated pistachio (G.1.5.). The staff of NIDFF, Forestry Seed-growing and Nature Park Protection Inspection at the Ministry of Nature Protection and the Research Institute of Desert at Ben-Gurion University, Israel, created pistachio forest plantation and collection nursery on total area of 13 hectares on the foothills of Kopetdag. Agro-technical techniques and pistachio inoculation methodology were applied, DNA defined and materials for further study of pistachio polymorphism were prepared.

IV) Please provide information on current status and trends in relation to this target.

"Land Cadastre of Turkmenistan" (1991), *"Sanitary Code of Turkmenistan"* (1992) and *"Forest Code of Turkmenistan"* (1993), Laws *"On Water"* (2004) and *"On Land"* (2004) were developed. These are independent regulatory act on land, water, forest, flora and fauna conservation. The results of the country's land state assessment will enable to clarify quantity and quality of areas of different levels of degradation.

V) Please provide information on indicators used in relation to this target.

Indicator: indicator of key species of ecologically vulnerable ecosystems that need protection from adverse affect of environment.

VI) Please provide information on challenges in implementation of this target.

- Lack of BSAP Coordination Unit;
- Weak cooperation between the subjects of activities;
- Lack of Clearing-House mechanism (? ? ?) or intermediary mechanism;
- Insufficient consideration of biodiversity issues in other sectors and inclusion these issues into their activities

VII) Please provide any other relevant information.

With support of GEF, ABR, Global Mechanism, and the Convention Secretariat the *"Central Asian Countries Initiative on Land Resources Management"* (CACILM) was developed. The goal of the CACILM is to combat land degradation and local population well-being in the countries of the region. The main CACILM objective is to determine national priorities in sustainable management of land resources and to develop a strategy for their consistent and efficient implementation. The CACILM activities will be financed during 10 years. From 2005 to 2006 preliminary stage of the project (PDF B) is being implemented. The national Framework

Programme will be the outcome of this stage. It will determine priorities of the country in sustainable management of land resources and prevention of land degradation.

At the end of 2005 a new UNDESA project *"Improvement of Population Standards of Life in Montane and Sub-montane Regions of Turkmenistan through Environmental Sustainability"* was launched. This project will enable to improve the local population life through ecological education and provide favourable conditions for population of mountain and sub-mountain territories of the Central and Western Kopetdag. It is planned to train local communities on modern techniques of land cultivation and efficient irrigation methods. Needs of montane communities will be determined to develop various forms of entrepreneurship in order to increase alternative income sources of local population.

The Presidential Decree "On Free Use of Natural Gas, Energy and Drinking Water" (1993) played an important role in environment conservation and enrichment. As a result, anthropogenic pressure on environment significantly reduced, firewood harvesting almost fully ceased, which in turn contributed to environment improvement.

An important share into addressing soil salinity, water resources pollution, increase of underground water level and underflooding of irrigated lands and deserted pastures will be contributed by the construction of the Karakum Lake, which is intended to collection and treatment of sewage waters. Operation of this lake will create new favourable environmental and forage conditions for migratory birds in the areas, which are currently limited in water supply. Watering of central part of the Karakum desert will favourably affect the status of some ungulate populations, as well as other near-water animals and promote enrichment of the country biodiversity.

Box XII.

Goal 6	**Control threats from invasive alien species.**
Target 6.1	**Pathways for major potential alien invasive species controlled**

I) National target: Has a national target been established corresponding to the global target above?

a) No	x
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

The problem of alien species was considered among other factors of biodiversity threats in the first national biodiversity report (2002), but was not acknowledged as a priority. Specific national target on control threats from invasive species was not established in Biodiversity Strategic Action Plan (BSAP, 2002). Activities aimed at studying factors that limit movements of invasive species G.4.1., G.4.2.) were planned in the framework of strategic component *G. Studies*. Development of invasive species monitoring (F.1.3.) is planned in strategy *F. Identification and monitoring*.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural			At the elaboration stage
b) Inland water			At the elaboration stage
c) Marine and coastal	?		Caspian Environment Programme (CEP)
d) Dry and subhumid land			At the elaboration stage
e) Forest			At the elaboration stage
f) Mountain			At the elaboration stage

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	x
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

To this day, namely before the emergence of jellyfish (*Mnemiopsis leidyi*) in the Caspian Sea at the end of last century the problem of unintentional introduction of invasive (alien) species was not priority. Quarantine objects and other dangerous pests, plant diseases and weeds always posed some hazard for agriculture. Therefore, *the State Plant Quarantine Inspection* was established at the Ministry of Agriculture of Turkmenistan to protect from quarantine objects. Control of acclimatization and re-acclimatization of

plant and animal species imported to and exported from the country was conducted by one of the departments of the *Ministry of Nature Protection*. Measures to control aggressive adventive entomological objects were developed at the *National Institute of Deserts, Flora and Fauna* and Plant Protection Service of the Ministry of Agriculture.

The Animal and Bird Veterinary Service Association at the Cattle-breeding Association "Turkmenmallay" conducts activities on protection the country's territory from carrying of dangerous animal diseases from abroad and veterinary surveillance of exported and imported objects related to veterinary service. Import to and export from the country is conducted in accordance with the Veterinary Requirements to each animal and bird species, adopted by the CIS Inter-State Council on Cooperation in Veterinary from April 6 (Council member from 1994), as well as the Sanitary Code of land animals of the International Epizootic Bureau of the World Animal Health Organization.

The State Sanitary and Epidemiological Inspection of the Ministry of Health and Medical Industry of Turkmenistan conducts activities on protection of the country's territory from bringing and prevalence of quarantine and other infectious diseases.

The problem of combat threats from invasive species is specifically urgent for the Caspian biota. Unfortunately, this issue is not addressed on the level of state target in accordance with the global target and Guidelines on alien invasive species adopted at the 6th meeting of the Convention Parties (2002).

At the same time the country adopted *"Rules for Protection Coastal Waters of Turkmenistan from Vessel Pollution"* (2005), which provides observance of hygiene standards for sea waters, sea water use and recreational needs of population, as well as for habitats and reproduction of fish resources, aqueous animals and plants.

With emergence of jellyfish problem that undermines forage base of fish in sea basin the State Fishery Committee livened up its activity on protection of fish resources and aqueous animals in all ponds of Turkmenistan and adjacent basin of the Caspian Sea. The Caspian Environment Programme (CEP) also joined to addressing the issue of threats from invasive species and developed the National Caspian Action Plan in 2002 and the Strategic Action Plan as a framework document of regional environmental policy in 2005.

IV) Please provide information on current status and trends in relation to this target.

In the framework of CEP the " Beroe ovata and Mnemiopsis leydii Monitoring in the Caspian Turkmen Waters" project was launched *(2005), which was aimed at studying* Beroe ovata probable presence and identifying Mnemiopsis leydii volume and mass in the coastal waters of Turkmenistan during summer-autumn period of 2005. By the results of the research the presence of *Beroe* was not discoved, *Mnemiopsis* is met everywhere and in big number. In 2004 it was reported that a number of *Mnemiopsis* reduced a little, however in 2005 it increased again. Due to that fact, the need to conduct permanent monitoring was noted, as well as to continue finding ways of regulation of the *Mnemiopsis* number and to conduct experimental works on reaserch of posibilitied of Beroe adaptation and interrelation with other marine hydrobionta.

Danger of alien species invasion is rather clearly understood in the country and some measures are taken to address it. For instance, research is conducted to study biology and ecology of melon fly (*Carpomyia pardalina*), pest invasive species, for protection of the Turkmen melon as national patrimony. The topic "*Development of environmentally safe methodology to control melon fly in Turkmenistan*" (2004-2006) was included into the research activities of the National Research Institute of Deserts, Flora and Fauna of the

Ministry of Nature Protection. The project *'Save Turkmen Melon"* (World Bank, 2003-2004) focused on increasing melon crop capacity and economic efficiency. A film was made on melons of southern Turkmenistan and measures to control melon fly. With support of AED USAID/VINROK a number of workshops on "Environmentally safe ways to control melon fly" was conducted in Turkmenistan (2005).

V) Please provide information on indicators used in relation to this target.

Legislative and regulatory documents, strategies components of BSAP, NCAP and SAP. A List of quarantine species and scientific publications on combat aliens and aggressive invasive species

VI) Please provide information on challenges in implementation of this target.

- Lack of strategy and sectoral programmes on combat alien species;
- Lack of sectoral lists of alien plants and invertebrates of Turkmenistan;
- Lack of legislative, executive and institutional mechanism to control and monitor alien species;

VII) Please provide any other relevant information.

A new Law of Turkmenistan "On Plant Quarantine" is under approval

A new Charter of the State Plant Quarantine Service has been adopted.

Legislative and administrative regulatory acts established legitimate area capable to adequately respond to situation related to alien species in the country.

Next stage in the process of law-making on alien species will enable to develop a relevant package of regulatory act that will allow controlling main cannels of potential penetration of invasive alien species.

Legislative basis to combat alien species:

Code of Turkmenistan on Administrative Offences (1984, with revisions and amendments 1993, 2002);

Law of Turkmenistan on Nature Protection (1991);

Sanitary Code of Turkmenistan (1992);

Law of Turkmenistan on Flora Protection and Efficient Use (1993);

Customs Code of Turkmenistan (1993);

Law of Turkmenistan on State Ecological Expertise (1995);

Law on Seeds (1996);

Law of Turkmenistan on Fauna Protection and Efficient Use (1997);

Law of Turkmenistan on Emergency Prevention and Elimination (1998);

Box XIII.

Target 6.2	**Management plans in place for major alien species that threaten ecosystems, habitats or species**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	
Please provide details below.	

Specific national target to combat threats related to alien species has not been established in the BSAP (2002). The issue of combating alien species is addressed in the country on the level of current provisions of the national legislation and implemented by institutions in the framework of their proxy. Regulations on outer quarantine and protection of the territory of Turkmenistan from quarantine subjects have been approved. Regulations on establishment border veterinary control units in border and customs points have been approved.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		General list of quarantine and extremely dangerous sites of agriculture production
b) Inland water		?	
c) Marine and coastal	?		Strategic Action Plan of the Caspian Environment Programme
d) Dry and subhumid land		?	
e) Forest		?	
f) Mountain		?	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	X
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Global target on combat threats related to invasive (alien) species has not been incorporated in NEAP and BSAP. But the mechanism of combating alien species is rather developed in the country and it is widely integrated into the agriculture programmes. A general listing of quarantine and specially dangerous objects has been approved. Emergence of new pests is a real threat to plant cultivation and environment in general. Use of chemical means of protection causes increase of pesticide pollution of environment.

IV) Please provide information on current status and trends in relation to this target.

Combat alien species that threat ecosystems, habitats or species is mainly conducted on the institutional level. The State Plant Quarantine Service carries out inspection of production of plant origin and other materials that are imported in Turkmenistan from foreign countries, verifies efficiency of conducted activities on combat quarantine pests, plant diseases and weeds. On the basis of studies of species composition, pest ecology, plant diseases and weeds it develops a list of quarantine objects and fulfils decontamination of production of plant origin and other materials. Alien species control is implemented also by the State Seed-growing and Grade-testing Service and Plant Protection Service at the Ministry of Nature Protection. The Plant Protection Service develops and implements action plans on protection and control of pests, crops diseases and weeds.

Research on development methodology on combat with invasive pests of agriculture crops (melon fly, cotton whitefly, etc.) and forest species (citrus moth) is conducted by the Institute of Deserts, Flora and Fauna (RIDFF) at the Ministry of Nature Protection, Research Institute of Farming, Scientific and research institute of Grain Crops at "Turkmengallaonumleri", farmers' associations, etc. The department of Plant Protection of the Institute of Farming conducts monitoring and test activities to test chemical and biological methodology of agriculture pest control. Based on results of experimental works recommendations are developed and consultations are provided to farmers. RIDFF specialists analyze entomofauna, study biology and ecology of adventive species and develop measures of aggressive objects control. Monitoring of ihthyofauna species composition of inner pond of Turkmenistan is regularly conducted. Transboundary programmes on monitoring of jellyfish (*Mnemiopsis leydii)* number and prevalence in the Caspian Sea is conducted with CEP support. Control measures to reduce number and area of jellyfish secondary (anthropogenic) habitat are developed.

V) Please provide information on indicators used in relation to this target.

Recommendations on combat with alien pests and aggressive invasive species.

VI) Please provide information on challenges in implementation of this target.

- Insufficient level of stakeholders involvement in addressing issues related to alien species;
- Lack of preventive measures;
- Inadequate capacity to take measures;
- Insufficient use of technical resources.

VII) Please provide any other relevant information.

Box XIV.

Goal 7	**Address challenges to biodiversity from climate change, and pollution.**
Target 7.1	**Maintain and enhance resilience of the components of biodiversity to adapt to climate change**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National target:

Reduce relative level of environment pollution on the basis of nature protection legislation and technologies revision and improvement to 20%, by the end of 2007.

The BSAP provides for a number of activities, including:

Review methods of biodiversity impact assessment (to improve assessment

methodology regarding impact of different sources of pollution and emissions to biodiversity status; to include specific biodiversity impact amendment into EIA national standards; to conduct studies of searching test-indicator organisms to diagnose sea water pollution);

Development of mechanism to control impact of sectors of economy to biodiversity (to develop systems of inter-sectoral control for biodiversity conservation on linear objects; to conduct assessment of impact of enterprises that adversely affect biodiversity and to develop a database on enterprises-pollutants; to develop guidelines on measures to prevent threats to biodiversity in environmental emergency situations; etc.).

The BSAP target covers the general issue of environment pollution including climate change. Biodiversity components capacity to resist and adapt ti climate change is not reflected in any BSAP strategic components.

Such national priority problems as water resources pollution, land and air pollution and biodiversity reduction are not covered in the NEAP as well (2002).

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	National targets have not been established
b) Inland water	?		G.13. Study abiotic, biotic and anthropogenic factors affecting mountains and tugai diversity and develop recommendations on their optimization
c) Marine and coastal			
d) Dry and subhumid land	?		G.1.2. Identify unprotected biodiversity "hot-spots' in key ecosystems
e) Forest	?		G.1.3. Assess ecological status of forests, mountain, desert and tugai ecosystems
f) Mountain	?		G.13. Study abiotic, biotic and anthropogenic factors affecting mountains and tugai diversity and develop recommendations on their optimization

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The target to reduce loads on biodiversity caused by environment pollution is not directly included in the NEAP and BSAP. This issue is partially covered in implementing projects related to the Convention of Climate Change.

Turkmenistan ratified the UN Framework Convention on Climate Change (1995 ?.) and Kioto Protocol (1997), and started to develop the National Cadastre on anthropogenic emissions and greenhouse gases (GG) discharges, which are not controlled by Montreal Protocol of 1994. The Presidential Decree "On Measures to Further Develop Nature Environment and Es-

tablishing Favourable Climate Conditions" (2000) is aimed at creating forest and recreational areas in the Kopetdag foothills. The Research Center of the Inter-State Commission on Sustainable Development of the International Aral Sea Rescue Foundation on the national and sub-regional levels initiated "Integrated environment status assessment" (2005-2006). Published on a disc on sub-region "Global Environmental Review" (GER, 2002).

Analysis of vulnerability of the key sectors of economy and ecosystems was conducted in the framework of GEF project "First National Report on he UN Framework Convention on Climate Change" in Turkmenistan (first stage -1997-2000; second stage – 2002-2003). Studies on vulnerability assessment and adaptation to climate change, including agro-biodiversity, enabled to develop a package of recommendations in the Framework of the national action plan on implementing preliminary activities to reduce GG emissions.

In the project "Turkmenistan: Self-Assessment of Needs to Build National Capacity" (2004-2006) potential crossed evaluation of three international conventions (CBD, CCD and FCCC) will enable to identify resources to support and increase resistance of biodiversity components to climate change. Outcomes of the project "Strengthening Institutional and Personnel Capacity to Improve Environment Management" (UNDP, 2005-2007) will be a supporting mechanism.

IV) Please provide information on current status and trends in relation to this target.

Turkmenistan is one of the regions where biodiversity can be affected to a maximum extent due to global climate warming. Expected climate warming will cause increase of annual volume of evaporation from water surface, increase of annual air temperature, occurrence of winter "droughts" in evident plenty of spring precipitations. Due to increase of temperature, evaporation and lack of humidity needs of plants in water will dramatically increase (probably up to 60-70%). Scientists forecast that increase of air temperature can cause change of flora compositions. Xerophylization of local flora will intensify and this will bring to quicker fall-out of Filices and forest mesophyte (water-resistant) species from its composition, in particular wood species. Probability of falling out orchidaceous species from flora composition is high. Obviously, diverging flora will be changed by succulents capable to live in the conditions of almost total lack of water. Probably gene fund of fruit crops will become scarce due to fall-out of wild relatives of apricot, apple-tree, pear, rowan-tree, walnut, etc, from flora.

Climate warming will also bring to animal life changes. Habitat borders of some species will probably move to the north, whereas others, in particular, of migrants will change their wintering places in Turkmenistan. Ability of prey to actively react to climate change makes them a good tool for observation over the affect of climate change processes to their life. Decrease of water sources will reduce number of these species in mammal group. Number of marine ecosystem plankton can also reduce which will negatively affect the number of birds and fish marine species.

Increase of climate dryness will cause a number of adverse affects in agriculture as well. Land dehydration in agrocoenosis of main cotton and grain production regions of the country will cause their yield reduction for 10 – 30 % and decrease of pasture productivity for 10-15%. Much earlier terms of crop sowing will be combined with decrease of their vegetation term, which in its turn will cause changes in crop choice. More drought-resistant and less demanding crops to irrigation will be required.

Deficiency of winter-autumn accumulation of land dampness will adversely affect the growth and development of pasture plantation, though the number of days with critical temperatures will, probably, not exceed permissible limits. The results of long-term analysis of climatic data showed that the main reason for pasture production reduction was drought during 1997 - 2001 ??. Disproportion of heat and humidity caused yield reduction and mass drying of shrubs,

subshrubs and perennial grasses.

In future this problem should be considered as an urgent one. Change of species composition and density of pasture plantation affect forage yield volume and its quantity composition. Reduction of quota of water used for irrigation will encourage technological methodology (drip irrigation, infiltration irrigation, etc.) and selection methods (heat resistance increase, vegetation duration reduction – artificial ephemerogenosis, etc.) establishing artificially irrigated pastures. Further growth of adverse affects in climatic indicators can result beginning of genetic engineering methodology in the country, based on succulent introduction in cultivated annual plants, analogues of main crops.

A new *Biodiversity Conservation Strategy* can become a supporting mechanism to increase resistance of biodiversity components to climatic changes. Against the background of global climate warming establishment of ordinary reserves (SPAs) will not help in itself theto address the issue of sustainable use of natural resources. The National Center for Climate Change Study can be a monitoring tool, which would combine collection and dissemination of information on environmentally pure technologies with collection of information on biodiversity and in this case birds could be indicators.

V) Please provide information on indicators used in relation to this target.

The following indicators can be used as indicators of climate warming impact on biodiversity:

- Decrease of species diversity;
- Withdrawal of water-resistant flora species and whole classes (for instance, orchids) from flora structure;
- Increase in number of flora succulent species;
- Intensification of withdrawal process of wood-bush water-resistant species;
- Relocation of specific vertebrates to the north of habitat borders;
- Ecological moves in life of migrants, in particular birds;
- Birds of prey (change in number and spread) is the best indicator of global climate warming;
- Reduction of crop capacity and fall in pasture productivity.

VI) Please provide information on challenges in implementation of this target.

a) Loss of biodiversity and relevant goods and services is improperly understood and documented;
b) Natural disasters and environment changes.

VII) Please provide any other relevant information.

Proposal: in developing a new edition of the BSAP it is necessary to work out a special activity focused on resistance of biodiversity components to climatic changes in component G. *Study*.

Box XV.

Target 7.2	**Reduce pollution and its impacts on biodiversity**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	x

Please provide details below.

National target:

Reduce relative level of environment pollution for 20% on the basis of review and improvement of nature protection legislation and technologies, by the end of 2007.

The global BSAP target is incorporated in the strategic component J. *Impact Assessment.*

Main targets of the programme activities:

J.1. Review of environmental impact assessment methods;

J.2. Develop mechanisms to control the impact from all economic sectors on biodiversity.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		j.1.1. Develop improved environmental impact assessment (EIA) methods for different pollution sources or emissions and their effect on biodiversity (oil-gas sector, agriculture, mining industry, etc.).
b) Inland water			
c) Marine and coastal	?		j.1.3. Conduct research to identify indicator organisms for monitoring pollution in sea water.
d) Dry and subhumid land	?		j.12.2. Develop inter-sectoral system to control biodiversity conservation on linear sites (oil-gas pipelines, railways, highways, power lines, irrigation canals, etc.).
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The global target on environment pollution impact on biodiversity components has been incorporated in the NEAP and BSAP. Key nature protection issues are covered in the national report *"Environment Status in Turkmenistan"* (1999). The Scientific Information Center of the Interstate Sustainable Development Commission (SIC ISDC) at the International Fund for Aral Sea prepared the *"Regional Environment Protection Plan in Central Asia"* (2001) for the period of 2002-2010 and electronic version *"Environment in Central Asia"* as an information support. The ISDC started "*Integrated Environment Assessment*" on the national and sub-regional levels (2005-2006). General environment protection priorities of Central Asia are in common with objectives envisaged by the national programme *"Strategy for Economic, Political and Cultural Development of Turkmenistan for the Period till 2020"*.

The country started implementing NEAP activities aimed at improving environment: "Institutional and Personnel Capacity Building for Improvement Environment Management" (UNDP, 2005-2007).

At the same time economic instruments for environment protection are in force, i.e. "Polluter pays", EAI documents are being developed, a complex of national standards on industrial products, production and quality system certification was entered in force (1993-1997). A mechanism to implement the energy-saving policy aimed at reducing environment pollution negative impact is being developed. New heat power plants and modern gas-turbine power units are constructed; transfer to new environmentally safe methods of fuel firing is implemented and technology of sun and wind energy utilization is being developed**.**

In pursuance of the Law *"On State Ecological Expertise*" (1995) the Ministry of Nature Protection proceeded to develop a mechanism to control impact of sectors of economy to environment. Methodological recommendations on maximum permissible atmospheric emissions were approved. A methodology package to evaluate damage caused by violation of water legislation was elaborated; amount of suits subject to recovery for atmospheric pollution was determined; damage caused by burning oil and petrochemicals was identified, etc. Activities to forecast ? ? 2 discharges pattern and other greenhouse gases in air related to global climate warming are in progress. Development of indicators of controlling impacr of pollution on biodiversity shall remain a priority of this country fro the nearest time.

Forest plantations and tugai forests (38,8 thousand ha) along the Amudarya, Murgab, Tejen and Atrek Rivers play a significant role in carbon dioxide utilization in Turkmenistan. Areas of juniperus forests (natural 66,2 thousand and planted 858 ha); pistachio trees (100 thousand ha, including cultivated 36,4 thousand ha) are complemented by field-protecting (15 thousand ha) and pasture-protecting (680 thousand ha) forest plantations, which are relatively strong affected (in particular pasture plants) by ? ? 2 discharge in hot summer period. The level of environment pollution is also reduced through planted forest and park recreational plantations in the whole country, as a result of the Presidential Decree *"On Measures to Further Improve Environment and Establish Favourable Climatic Conditions"* (2000). Plantations of trees around the cities significantly improve protective functions of existing forest (montaine and desert) areas (20,3% of the country total area).

Marine environment ecosystem is also under threat of pollution, it suffers obvious biodiversity degradation. For the purpose of the Caspian Sea and coastal area protection the presidential Decree "On Approval Rules on Turkmenistan Coastal Waters Protection from Vessel Pollution" (2005) was adopted. Preventive measures of CEP projects were aimed at improving the Caspian Sea environment, in particular the project *"Establishment of Operational Service to Control Navigation Channel Depths and Ensuring Environment Security in Turkmenbashi Bay of the Caspian Sea*" (2002-2003; GEF). The project was implemented by specialists of "Turk-

mendenizyollary" Department.

IV) Please provide information on current status and trends in relation to this target.

In Kopetdag foothills, near the capital of Turkmenistan, a forest park zone was established, covering the area of more than 24 thousand hectares with 100 species of conifer and deciduous trees and shrubs (1998-2005). They fulfill sanitary-hygiene and recreational functions. Plant species assortment corresponds to forest plantation conditions of the region. Irrigation of the plantations positively affects environment and climate. Dripping irrigation, high agricultural background and fire prevention measures ensure plantation vital capacity. In some areas of the forest park zone increase of density of wild animals and birds is observed.

V) Please provide information on indicators used in relation to this target.

The following indicators can be used biodiversity indicators as pollution increases:

- Indicator of species diversity reduction;
- Change in nature of species plenty;
- Increase of number of communities depleted by species

VI) Please provide information on challenges in implementation of this target.

- Lack of BSAP Coordination Unit (CU).
- Non-inclusion of BSAP into the programmes of other sectors of economy.
- Lack of Clearing-House mechanism (intermediary mechanism).

VII) Please provide any other relevant information.

Box XVI.

Goal 8	**Maintain capacity of ecosystems to deliver goods and services and support livelihoods.**
Target 8.1	**Capacity of ecosystems to deliver goods and services maintained**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	?
c) Yes, one or more specific national targets have been established	

Please provide details below.

National target:

- *Develop a plan for bio-resources management to reduce their over-exploitation by 2006 and ensure its implementation.*

The global target is incorporated in the BSAP within strategic component ? . *Sustainable use*, but in a wider context, when biodiversity components use is considered at the level of sectoral activities. Ecological tourism (ecotourism) aimed at conserving biological and landscape diversity can be an example of sustainable use of ecosystems that can provide goods and services and

provide livehood to local population.

Main targets of the programme activities:

- ? .5. Development of sustainable ecotourism.
- ? .3. Promote population activities in biodiversity conservation.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		? .5.2. Involve population to identify new recreational or aesthetic resources; ? .3.3. Restore local artisanal industries and traditions sustainably utilizing biodiversity as an integral element of ecotourism development
b) Inland water	?		? .5.4. Establish two new open-air "museums": on black saxaul in Repetek reserve and Bukhara deer in Amudarya reserve.
c) Marine and coastal	?		? .5.3. Prepare a guidebook on game animals to attract tourists and develop photographic safaris in Turkmenistan
d) Dry and subhumid land	?		? .5.1. Work out a management plan for the development of scientific and ecological tourism; ? .5.5. Provide nature conservation staff with training in ecotourism in Repetek reserve.
e) Forest	?		? .5.6. Develop nature trails and interpretative materials at key sites
f) Mountain	?		? .5.7. Develop ecotourism in Koitendag

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	x
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

"Ecological tourism" concept has not yet become an element of the country state policy, though development of tourism sector started in 90-s of the last century and more than 50 tourist routes have been developed on historic and other sites of the country. With TEMPUS project support (2004-2005) the first training center on environment and tourism was established in Turkmenistan. The Center focuses its activities on training staff on ecological tourism on the basis of European universities and elaboration of the programme on tourism sustainable development from the point of view of nature and culture environment conservation.

Usually "ecological tourism" concept is related to excursion routes along the country pro-

tected areas. Currently legal and economic environment is not favourable for investing in ecotourism development, though in tourism sector it can constitute a substantial part (up to 30%). Mechanism of sustainable ecotourism is not developed in the country. Moreover, ecotourism is not integrated into regional socio-economic development plans of the country and is not considered complex with development of agriculture, forestry, oil and gas industry, sport, healthcare, hospitality and other sectors.

Therefore, BSAP activities on ecotourism development are not in demand.

IV) Please provide information on current status and trends in relation to this target.

Weak legal environment and structural space of this sector of economy hampered process of its development. As a result, lack of sustainable forms of resource management is substituted by uncivilized development of tourism market by local and external participants of the process. In this respect it is necessary to develop strategies and action plan on development of ecological forms of *scientific, extreme and educational* tourism.

V) Please provide information on indicators used in relation to this target.

Number of tourists

VI) Please provide information on challenges in implementation of this target.

- Lack of interaction in ecotourism on the national and international levels;
- Lack of regulatory basis on ecotourism;
- Lack of skilled staff capacity.

VII) Please provide any other relevant information.

There is State Tourism and Sport Committee "Turkmensyyahat", a training institute; the Law "O*n Tourism*" (1995) and nearly 50 legal acts and regulations were adopted. In 1993 Turkmenistan became a member of the World Tourism Organization. The country has great potential and perspectives to promote on the world tourism market. Currently there are 17 tourism companies, including 10 private ones. More than 60 thousand tourists, including 12 thousand foreigners get tourism services. Nearly 150 agreements on cooperation in tourism were concluded with 80 foreign tourism companies.

Box XVII.

Target 8.2	**Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

National targets:

- *Develop a plan on biodiversity management to reduce their over-exploitation by 2006 and ensure its implementation,.*

The global target is incorporated in the BSAP in two interrelated strategic components

- ?. Sustainable use

- D. Capacity building through professional and scientific training

Involvement of state and public management mechanisms to address biodiversity conservation issue enables the country to promote biodiversity sustainability methods in various sectors of economy.

Main targets of the programme activities:

? .1. Promote sustainable use of biological resources;

? .2. Promote sustainable utilization of montane forests;

? .4. Development of economic incentives for involving local stakeholders in conservation of biodiversity;

D. 1. Institutional support.

During the reported period the country started to implement only a part of the BSAP planned activities.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		? .4.1. Develop alternative methods of sustainable water use, pasture and agricultural land use, oriented towards biodiversity conservation; D.1.1. Enhance state and public institutional management mechanisms for the conservation and sustainable use of biodiversity.
b) Inland water	?		? .1.1. Identify types and extent of biological resources and prepare recommendations for their sustainable use
c) Marine and coastal	?		? .1.3. Promote sustainable utilization of Caspian Sea fisheries resources including sturgeon
d) Dry and subhumid land	?		? .1.6. Review quotas for production and sale of natural resources (including hunting) in accordance with changes in their status
e) Forest	?		? .2.1. Develop and implement a package of activities in forestry and sustainable use of forest resources
f) Mountain	?		? .4.2. Encourage farmers to grow local medicinal plants by providing logistical support

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The target on biodiversity sustainable use has bee incorporated into the NEAP and BSAP.

Agriculture is one of the biodiversity components; food genofund contains samples of local (Turkmen) origin and present 8,15% of total amount, including 249 species of wild rela-

tives. Biologically active substances are contained in 1600 flora species; these are potential medicinal raw material valuable and identified by traditional and folk medicine, 225 of wild and cultivated plants used in folk and modern scientific medicine are pharmacologically and chemically described.

More than 120 animal species are game species. ?????????? ? ?????????? ????? – are ancestors of domestic goats and *Ovis* species and sub-species are ancestors of domestic sheep. From ancient time people breed local animals: Turkmen hound and Turkmen shepherd dog, cattle, Saraju and karacul sheep, Akhalteke and Youmud horse, Turkmen dromedary. Conservation of local breeds on of the important issues; number of some of species increases, in particular, number of Akhalteke horses.

Partnership cooperation (D1.1.) on supporting resources that provide food independence in the interests of poor groups of population was significantly accelerated after signing the *"Agreement between the Ministry of Agriculture of Turkmenistan and ICARDA International Center on Joint Cooperation in Agriculture Sciences"* in September 2003.

Joint studies on soil and water resources (? .4.1.) were conducted by agriculture specialists and farmers of Turkmenistan in partnership with ICARDA researchers (2000 - 2003). The first stage of the project *"Soil and Water Resources Management in Industrial Conditions for Sustainable Agriculture Systems"* was aimed at addressing the issue of increasing productivity and intensity of irrigated lands, efficient use of irrigational water in production of marginal water resources. Capacity of marginal (*underground*) waters with different mineralization rate for agriculture use was identified.

Activities were conducted with winter wheat crops (intermediary legume crop - mash) in different ways: yield increase, save-efficient use of irrigation water, increase of productivity of irrigated field and optimization of irrigation regimes. Crop rotation was polished: cotton – winter wheat. Shallow ploughing technology for irrigated wheat was developed and options to diversify crops in farming were identified. Research outcomes were introduces in all farms of Akbugdai region of Akhal province in 2002.

The second stage of the project *"Improvement of Rural Well-Being through Efficient Management of Water Resources and Land fertility in Production Conditions in Central Asia"* (2004 - 2006) is aimed at rehabilitation and use of local kyariz (*wells*) in Baharly region. Water consumption in partially restored kyariz system "Hovdan" increased to 9 l/sec (was 4 l/sec), and in Watan farm of Akbugdai region irrigation was combined: drainage waters with water from the canal. Mixed irrigations (rotation of fresh and drainage waters) enabled to safe approximately 45% of fresh water. This technology was introduced on the territory of 820 ha in Ruhayat region. Some activities were conducted on irrigation of takyr soils. Takyrs with dense plant growth were "washed" with drainage water. This allowed farmers to grow onion and watermelons on partially desalinized soil.

Overhead irrigation technology on small areas (3 ha) was demonstrated on the experimental plot of a small farm. Production tests will enable to develop optimum performance for wheat irrigation taking into account soil and hydrological characteristics of land and further relevant recommendations on overhead irrigation methodology will be provided to farmers.

Joint studies within the project *"Integrated Forage Production and Cattle-Breeding in Steppes of Central Asia"* (IFAD, 2000-2003) enabled to introduce new technologies of growing salt-resistant non-traditional crops on drainage waters. The research is focused on restoration degraded pastures on the territories of farms.

IV) Please provide information on current status and trends in relation to this target.

Implementing the Decree of the President and the Parliament on food independence

Turkmenistan gradually enters the common international process on sustainable use of nature resources, namely, adaptive (*adaptive to livehood conditions*) management of agrodiversity. Implementation of the economic policy of the country is focused on establishing a modern market model, promoting development of entrepreneurs, including private business. Complete gasification of the population point influenced positively on reduction of tree cuttings in key desert and montaine ecosystems. The national programme *"On Rehabilitation of Socio-Economic Environment on the Aral Sea Adjacent Territories of Turkmenistan*" (2001).

Planned and continuous activity to improve agriculture production is implemented by the research institutions of the Ministry of Agriculture, which jointly with the International Center ICARDA fulfills a number of works related to the key problems of the region, including

- selection of grain, legume and forage crops;
- Integrated forage production and cattle-breeding;
- management of soil and water resources in production process.

V) Please provide information on indicators used in relation to this target.

It is necessary to find assessment system for sustainability identification. Probably in this respect total number of withdrawn important species in relation to standards of sustainable withdrawal can be used as indicator.

VI) Please provide information on challenges in implementation of this target.

- the BSAP as a document is not legally enforced;

- Insufficient consideration of biodiversity issues in other sectors and inclusion these issues into their activities.

VII) Please provide any other relevant information.

Box XVIII.

Goal 9	**Maintain socio-cultural diversity of indigenous and local communities.**
Target 9.1	**Protect traditional knowledge, innovations and practices**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	X
c) Yes, one or more specific national targets have been established	

Please provide details below.

National target

Increase public awareness on biodiversity importance for 50% and improve public ecological education for 10%, by the end of 2007

The global target is incorporated in the BSAP strategic component ?. *"Ecological education and public awareness"*.

Main target of the programme activities:

?.5. Support and assistance to biodiversity conservation activities related to culture

and traditions

This national target can not be split into separate sectors as it goes through all current programmes.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural	?		?.5.3. Adopt measures to encourage conservation of traditional dog breeds (alabai and tazy), for example national centers, amateur dog-owners' clubs database of pedigree dogs, training in stud book maintenance and support to shepherd farm.
b) Inland water		?	
c) Marine and coastal		?	
d) Dry and subhumid land	?		?.5.1.Support to biodiversity conservation in line with traditional cultural practice ?.5.2. Encourage rebirth of national traditions and culture connected with biodiversity conservation
e) Forest		?	
f) Mountain	?		?.5.2. Encourage rebirth of national traditions and culture connected with biodiversity conservation

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The national target is incorporated in the BSAP (2002). Currently data is collected to develop a concept on protection of traditional knowledge and innovations as well as on search for ways of their introduction in practice.

IV) Please provide information on current status and trends in relation to this target.

Currently establishment of basis for planned activities is in progress. In particular, the inventory process of the objects suitable for the status of "nature monuments" has been initiated, as one of the elements of traditional knowledge on biodiversity conservation heritage.

V) Please provide information on indicators used in relation to this target.

Adoption of the Law on national cultural traditions related to biodiversity conservation

VI) Please provide information on challenges in implementation of this target.

Lack of legal basis to protect rights of indigenous and local communities to their traditional knowledge on biodiversity

VII) Please provide any other relevant information.

Box XIX.

Target 9.2	**Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing**

I) National target: Has a national target been established corresponding to the global target above?

a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

Within the national target *""Revise and develop nature protection laws in accordance with the Convention on Biological Diversity to fill in gaps in legislature, by the end of 2006*" it was also intended to address the issue of protection rights of local communities to their traditional knowledge, innovations and practice, including rights to joint use of benefits.

Moreover, the global target on protection rights of indigenous and local communities to their traditional knowledge on biodiversity is incorporated in the BSAP component L *"Legislation"*.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		?	Programme of work is under consideration
b) Inland water		?	Programme of work is under consideration
c) Marine and coastal		?	Programme of work is under consideration
d) Dry and subhumid land		?	Programme of work is under consideration
e) Forest		?	Programme of work is under consideration
f) Mountain		?	Programme of work is under consideration

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	X
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

No target to protect rights of indigenous and local communities to their traditional knowledge, innovations and practice

IV) Please provide information on current status and trends in relation to this target.
There are no legal acts on indigenous and local communities' rights to their traditional knowledge in Turkmenistan. After signing a number of international documents by Turkmenistan the existing Law on Patents (1993) ceased to meet the requirements and needs of population as it lacked new provisions. The development of a number of such laws is in process, such as: *"On Names of Commodity Origin Place"*, *"On Brand Names"*, *"On Unfair Competition*", and *"On Protection of Selection Achievements*". In he nearest future legislation on establishment legal and methodological basis to assess objects of intellectual property and protection of craft works.
V) Please provide information on indicators used in relation to this target.
Lack of legal basis to protect rights of indigenous and local communities to their traditional knowledge on biodiversity.
VI) Please provide information on challenges in implementation of this target.
Limited involvement of public and subjects of activities
VII) Please provide any other relevant information.

Box XX.

Goal 10	**Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.**
Target 10.1	**All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements**

I) National target: Has a national target been established corresponding to the global target above?	
a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

National target

Revise and develop nature protection legislation in accordance with the Convention on Biological Diversity to fill in gaps in legislature, by the end of 2006.

The global target on genetic resources transfer is indirectly integrated in the BSAP on the level of two strategic components:

I. *Cooperation* (technical, scientific, inter-state, technology transfer).

L. *Legislation*

Main targets of the programme activities:

I.2. Assistance to regional cooperation and information exchange

L.1. Harmonise national legislation with international biodiversity conventions

This national target can not be split into separate sectors as it goes through all current programmes.

L.1.5. Develop a Law on “Fair and equitable sharing of benefits in regard to biological and genetic resources”.

L.1.6. Develop mechanisms for enforcing procedural and institutional rules concerning fair and equitable sharing of benefits of biological and genetic resources

I.2.6. Develop a strategy for fair and equitable sharing of benefits of biological and genetic resources.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	
b) Inland water		?	
c) Marine and coastal		?	
d) Dry and subhumid land		?	
e) Forest		?	
f) Mountain		?	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

In accordance with the Convention on Biological Diversity and International Agreement on Plant Genetic Resources a package of activities was incorporated in the BSAP, but the country did not start their implementation.

IV) Please provide information on current status and trends in relation to this target.

Documents on the Kartahen Protocol ratification by Turkmenistan are prepared and submitted to the government for consideration.

V) Please provide information on indicators used in relation to this target.

Draft of the Law “Assess and sharing of benefits in regard to biological and genetic resources”

VI) Please provide information on challenges in implementation of this target.

Limited public involvement

VII) Please provide any other relevant information.

Box XXI.

Target 10.2	**Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources**

I) National target: Has a national target been established corresponding to the global target above?

a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

The national target for specific programme activities corresponding to the global target has not been established in the country. No activities are conducted in genetic engineering and biotechnology and accordingly no legislative and administrative regulations have been developed. However, GMO issue relates to Turkmenistan as the consumer of imported GM food staff.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		?	
b) Inland water		?	
c) Marine and coastal		?	
d) Dry and subhumid land		?	
e) Forest		?	
f) Mountain		?	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	X
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

Import of wide-spread genetically modified organisms and products is the actual outer threat to Turkmenistan. Taking into account danger of wide-spread genetically modified products the Kartahen Protocol on Biological Security was open for signing. Currently the documents for the Protocol ratification are submitted to the government of Turkmenistan. Ratification of the Protocol will enable the country to get benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources.

IV) Please provide information on current status and trends in relation to this target.

Several famous companies that import genetically modified products from other countries

operate in Turkmenistan. Such GM products are imported to the country: soy products, potato products (chip) and vegetable crop seeds (tomato, cucumber, egg-plant, radish, paprika). The seeds produce one yield and can not be used sequentially, replacing local ancient vegetable crop species from the market. There is no information on GMO products and even decision-makers have no clear idea of this issue.

A package of specific activities aimed at intensifying cooperation and advancing knowledge and awareness of stakeholders on the issue of access to genetic resources and benefit share was developed. It is recommended to develop the following documents on safe use of genetically modified organisms:

- Strategy providing for establishment mechanism of biological and genetic resources on fair basis *(within international cooperation; I.2.6.);*
- Draft of the Law *"On Biosecurity and Use of Genetically Modified Organisms"*» (*within harmonization of the national legislation; L.1.3.)*
- Draft of the Law on "Access and sharing of benefits in regard to biological and genetic resources" (within harmonization of the national legislation; *L.1.5.);*
- Mechanism of managing procedure and institutional rules to observe legislation on biosecurity (*within harmonization of the national legislation; L.1.4.);*
- Mechanism of managing procedure and institutional rules to observe legislation on access and benefit sharing (*within harmonization of the national legislation; L.1.6.).*

Moreover, it was stressed in a separate item of the BSAP on improving public access to biodiversity information (H.1.2.) through *"publicizing the adoption of the Aarhus Convention on Information Access so the wider population understands their rights to ecological information"*. In order to implement the provision of this Convention on strengthening the role of public organizations in decision-making OSCE Center in Turkmenistan developed a special disc "Documents and materials to a series of round tables on the Aarhus Convention" in Russian. This disc contains documents on national legislation focused on environment issues and access of public to information.

In 2006 Turkmenistan will join harmonized consultative process to implement Boo Guidelines on access to genetic resources and benefit share (ABS) in Central Asia and Mongolia.

V) Please provide information on indicators used in relation to this target.

The country's position in regard to Kartahen Biosecurity Protocol ratification

VI) Please provide information on challenges in implementation of this target.

- Insufficient regional and international cooperation in access to genetic resources and sharing benefits and to traditional knowledge;
- Insufficient development of issue related to possibility of using genetic resources and sharing benefits.

VII) Please provide any other relevant information.

Box XXII.

Goal 11	**Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.**
Target 11.1	**New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	x

Please provide details below.

National targets:

- *Provide the BSAP projects with internal and foreign investments during the whole period of their implementation;*
- *Increase investments for 30% to support scientific capacity of institutions addressing biodiversity issues, by the end of 2010.*

The global target is incorporated in the BSAP two strategic components:

- *M. Financing*
- N. *Coordination and monitoring*

This national target to strengthen financial, scientific and other potentials can not be split into separate sectors as it goes through all working programmes.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	
b) Inland water		?	
c) Marine and coastal		?	
d) Dry and subhumid land		?	
e) Forest		?	
f) Mountain		?	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	X
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

The BSAP (2002) provides for: establishing a Coordination Unit for integrated biodiversity planning (N. 1.), surplus expenditures to support biodiversity and potential (? .1.), development of alternative finances sources (? .3.) and international donors means.

IV) Please provide information on current status and trends in relation to this target.

Currently Turkmenistan implements the project *'Self-assessment of Needs to Build the National Capacity*" (2004-2006; GEF/UNDP) to support efficient realization of commitments related to global environment management in biological diversity, climate change and combating desertification. As a result capacity on three international conventions will be assessed and Action Plan to build capacity developed.

The second stage of the project "*Biodiversity Conservation in Turkmenistan*" (GEF, 2005-2007) was also launched to assess long-term needs of institutional capacity for identification national priorities. In order to stir the process of information management of the institutions responsible for realization of the Convention on Biodiversity a mechanism of mediation and a plan to improve a mechanism of biodiversity information management will be elaborated.

V) Please provide information on indicators used in relation to this target.

Budget item on biodiversity within NEAP and BSAP implementation

VI) Please provide information on challenges in implementation of this target.

- Lack of financial, human and technical resources;
- Lack of available information and knowledge;
- Lack of Coordination Unit to implement BSAP.

VII) lease provide any other relevant information.

Box XXIII.

Target 11.2	**Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4**

I) National target: Has a national target been established corresponding to the global target above?

a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		?	

b) Inland water		?	
c) Marine and coastal		?	
d) Dry and subhumid land		?	
e) Forest		?	
f) Mountain		?	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

New technologies training process has started in the country. For instance, in 2000-2001 with support of USAID-CDR a group of NIDFF specialists were trained at the Institute of Deserts in Israel, in the framework of the Turkmen-Israel project "Collection, Description and Share of Pistachio Genetic Fund". Distinctive features (molecular markers) between male and female pistachio individuals were identified on the basis of biotechnological studies and extent of polymorphism inside and between the populations was evaluated.

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

VI) Please provide information on challenges in implementation of this target.

Limited involvement of public and subjects of economy

VII) Please provide any other relevant information.

Global Strategy for Plant Conservation (GSPC)

The Conference of the Parties, in decision VI/9, annex, adopted the Global Strategy for Plant Conservation. Parties and Governments are invited to develop their own targets with this flexible framework. The Conference of the Parties considered the Strategy as a pilot approach for the use of outcome oriented targets under the Convention. In decision VII/10, the Conference of the Parties decided to integrate the targets into the reporting framework for the Third National Reports. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box XXIV.

Target 1. A widely accessible working list of known plant species, as a step towards a complete world flora.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
The Global Strategy was adopted at VI/9 Conference of the Parties when the Biological Diversity Action Plan (BSAP, 2002) had been already developed in Turkmenistan. Therefore, currently the national target on taxonomy corresponding to the above-mentioned global target has not been developed.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
Turkmenistan has conducted regular studies on flora since the end of XIX century. This enabled to accumulate huge information resource on taxonomic studies and proceed to the next stage. The state policy strategy is focused on biodiversity protection, restoration and sustainable use.	
III) Current status (please indicate current status related to this target)	

Great number of materials on flora and plant taxonomy was collected during many years of research in the country, which enabled to make assessment of the current biodiversity status. The obtained information became a basis for developing programmes aimed at improving the system of education. All data on flora were published and available to public. Electronic version on flora complete structure of higher and lower plants is not available yet.

Taxonomic diversity is identified by higher plant groups: 2969 species of flora flower plants, 140 – moss flora, 2 – ???? ???????, 17 - ????????????????? 12 - ??????????? (3140 species of higher plants in total). Lower plants are represented by ????????? – 470, ????????? – 827, ???????? - 42 ? 2585 ????? ?????? (3924 species in total). General structure of flora includes 7064 species. Diversity of specific nature areas was revealed (the Karakums, north-western, south-western, and central Kopetdag, Large Balhans, Badkhyz, etc.) on the level of communities (kinds, families, orders, etc.) and it enabled to identify outlines of biogeographic zoning.

The Herbarium Fund of the NIDFF is a taxonomic repository center of initial scientific document on flora diversity (more than 250 thousand pieces of herbarium, including types of isotopes of 36 species) of higher plants as well as mycological, lichenological and briological herbarium collected on the whole territory of Turkmenistan (including SPAs) and adjacent Iran.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Nature protection legislation and regulations aimed at conserving all plant species are elaborated in the country. The key laws – "On Nature Protection" (1991) and "On Protection and Efficient Use of Flora" – verify the country's commitments on nature protection envisaged in the Provisions of the Constitution of Turkmenistan (1992).

Listings of rare and extinct plant species made up in 1970-1980s by botanist-researchers became the first step of the Turkmen botanists to address the issue of genofund protection from excessive exploitation of its resources. Composition of endemic species (nearly 16%) was identified and 393 phanerogams and 100 lichens of rare species were discovered. An electronic database "Rare and extinct plant species of Kopetdag" (Kamakhina, Efimenko, Lobachev, 2004) was elaborated: www.ecostan.info/dbank

After reforming the Academy of Sciences of Turkmenistan (1997) functions of the Institute of Botany were delegated to the National Research Institute of Deserts, Flora and Fauna at the Ministry of Nature Protection. Stable studies on fundamental botany (taxonomy and flora), except Koitendag studies, are conducted rather seldom in the country.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

The extent of regional flora study exceeds 85 %. Species richness and uniformity of species abundance (equal distribution of species by their abundance in community) were indicators of progress.

VI) Constraints to achieving progress towards the target

Need to develop a national strategy on plant conservation.

VII) Any other relevant information

Applied research aimed at studying useful characteristics of plants and their efficient use prevail in the country.

Box XXV.

Target 2. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
The overall aim of the National BSAP is *to conserve, restore and sustainably use biological diversity of Turkmenistan for present and future generations.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target aimed at conserving plant species has been incorporated into NEAP and BSAP.	
III) Current status (please indicate current status related to this target)	
By the beginning of the new century the country accumulated sufficiently great factual materials in classical botany (flora and taxonomy. A complete description of higher flora plants characteristics was made and published in a seven volume edition *"Flora of Turkmenistan"*; it is available to public (paper version). Scientific material on flora composition is reflected in a number of monographs and plant identifiers: *"Determinant of Plants of Turkmenistan"* (1978-1985 and 1988); *"Determinant of Plants of Central Asia"* **(**1968-1987), etc. The most important flora research works are as follows: E. Bobrov *"Plantation of the Large Balhan Mountains"* (1931); S. Nevsky *"Materials to Flora of the Kugitan and its Foothills"* (1937); Sh. Kogan *"Plantation of the Southen Ustyurt"* (1954);. R. Tarasov *"Plantation of the Small Balhan Mountains"* (1954); W. Nikitin *"Weed Plantation of Turkmenistan»* (1957); K. Popov *"Pistachio in Central Asia"* (1979); L. Ischenko *"Astragals of Turkmenistan"* (1981); D. Kurbanov *"Summary on Flora of Western Low Hills and Hills of Kopetdag"* (1988); A. Gladyshev *"Plantation of River Valleys"* (1992); A. Geldikhanov *"Umbrella Flora of Turkmenistan"* (1992); D. Kurbanov *"Analysis of Flora of the North-Western Kopetdag"* (1992); E. Seifulin, A. Geldikhanov and ohers *"Flora of Zaunguss Karakums"* (1992); W. Bochantsev, R. Kamelin, T. Gorelova *"List of Badkhyz Plants"* (1992); G. Kamahina *"Flora and Plantation of the Central Kopetdag (past, present and future)"* (2005), and others. As a result the first stage of flora inventory of higher vascular plants on the larger part of the country's territory (except Koitendag and eastern Kopetdag) has been completed. During last years 30 plant species were found, 10 of them were new for science. Further stage of flora inventory will enable to discover not only new species and their new habitats but elaborate a listing of species extinct during last 20-30 years.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

Editions of the Red Data Book of Turkmenistan are the main pattern for in-situ conservation (1985; 1999). In pursuance of implementing the Presidential Decree "On the Red Data Book of Turkmenistan" (1998) the Second Edition of the Red Data Book was prepared (1999). It includes 109 plant species (fungi – 3, lichens – 5, mossy – 2, Filices – 6, gymnospermous – 1 and phanerogams - 92) or 1,54% of the total flora number, the majority of which are endemics (64 species or 59%). The national Red Data Book contains 18 flora species out of 29 species of Turkmen flora included in the IUCN Red List.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Applied botanical developments aimed at sustainable use of natural resourses and studies of their valuable propertied have been recognized as a national priority. Nevertheless, among thematic objectives of the NIDFF, Ashgabat Botanical Garden and Turkmen State University after Magtymguly and other botany research centers of the country, with few exceptions, there are no systematic studies on flora and taxonomy. Applied botanical developments focused on sustainable utilization of natural resources and study their useful characteristics are the national priority.

VI) Constraints to achieving progress towards the target

Unclaimed specialists on taxonomy and flora;

VII) Any other relevant information

Box XXVI.

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target *Develop and introduce methods of economic incentives to raise local population awareness in biodiversity conservation, by 2010.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
Sustainable flora use target has been incorporated in the BSAP strategic component ? *"Sustainable use of biological resources"*: ? .1.1. – Identify types and extent of biological resources and prepare recommendations for their sustainable use. ? .1.5. – Encourage sustainable use of natural liquorice bushes (undertake economic evaluation, train farmers in liquorice *Glycyrrhiza glabra*) cultivation, establish a processing plant for natural liquorice).	
III) Current status (please indicate current status related to this target)	
The NIDFF at the Ministry of Nature Protection mainly conducts applied research. The outcomes of the studies are aimed at conserving and utilizing useful wild plants, including wild nuciferous plants; aromatic plants, rare edible fungus; lower plants as a source of nutrition and efficient use in national economy. New studies on taxonomy on a national scale (on the Institute's subjects) are almost not conducted.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Patterns and procedures of economic incentives to conserve and sustainable use plants have not yet been established in the country.	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
Monitoring progress indicators: number of useful plants	
VI) Constraints to achieving progress towards the target	
It is necessary to strengthen financial and technical resources.	
VII) Any other relevant information	

Box XXVII.

Target 4. At least ten percent of each of the world's ecological regions effectively conserved.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	

National target

Expand SPAs network to 6% by the end of 2008 and improve their management.

Currently the total area of all SPA categories in Turkmenistan is 4,02%. The national target is aimed at implementing integrated set of actions and activities within the strategic component ? . "In-situ conservation".

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

Biodiversity target is incorporated into NEAP and BSAP.

III) Current status (please indicate current status related to this target)

Specially protected areas (SPAs) of Turkmenistan are constituent of unified environment monitoring system, which focuses on biodiversity composition assessment and control. The total area of SPAs is approximately 4,0% of the whole territory of Turkmenistan, including reserves – 40,9%, sanctuaries - 55,4%, protected zone – 3,6%, nature monuments 0,1%. Flora protection is ensured within nature ecosystem of SPAs in three provinces: the Turan *(Repetek, Amudarya and Kaplankyr reserves)*, the Montane Central Asian *(Koytendag reserve*) and the Kopetdago-Horasane *(Syunt-Hasardag and Kopetdag reserves*).Ecosystems under protection are *Badkhyz reserve*, which is at the juncture of the Karakum desert, Kopedago-Horasan mountains and Parapamiz submountain, and *Khazar reserve* (former Krasnovodsk reserve*)*, where typically dry desert at the Caspian Sea contacts the eastern part of the Caspian Sea basin. Nearly 80-85% of plant species from the whole number of flora are in the protected areas, 78 species are included in the Red Data Book of Turkmenistan (1999). In 2005 the Ministry of Nature Protection developed a Draft of the *"Perspective plan on SPAs network development in Turkmenistan"*. Establishing ecological structure (Econet) will enable to increase its area up to 6% in 2008 and up to 10% in 2010.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Nature protection legislation contains the following laws: *"On Specially Protected Nature Areas"* (1992), *"On Flora Protection and its Efficient Use"* (1993), *"On Fauna Protection and its Efficient Use"* (1993) and a number of acts (Forest Code, 1993; *Sanitary Code*, 1992; Water Code, 2004), including typical regulations on state reserves, sanctuaries and nature monuments (1995), which specify status and regime of reserved and other protected areas. The "Statute on the Red Data Book" (1997) was developed. The "Statute on National Parks" is under development.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
In 2006 a programme complex will be adopted in the country. It will include five-year management plans for three reserves: Amudarya, Repetek and Syunt-Hasardag. Taking into account specifics of each area these plans will become methodological guidelines for all other reserves. Development of ecological and economic background to establish the National Park of Turkmenistan is at the final stage. Documents for establishing Balkan and Karakum reserves have been developed; the priority of these reserves is confirmed in the NEAP. Implementation of the plan to establish the national park in the Sumbar River valley (south-western Kopetdag) has been started. This project will enable to improve management of the protected areas of all current reserves.
VI) Constraints to achieving progress towards the target
Lack of financial, human and technical resources
VII) Any other relevant information

Box XXVIII.

Target 5. Protection of fifty percent of the most important areas for plant diversity assured.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target • *Expand SPA network for 6% by the end of 2008 and provide their efficient management*.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target has been incorporated into the NEAP and BSAP.	
III) Current status (please indicate current status related to this target)	
Currently there are 8 state nature reserves (including one biosphere reserve), 14 sanctuaries, 250 nature monuments, dendrology parks, one botanical garden and 3 treatment and health-improving resorts. National parks and protected area on resource management are not available. In 2005 the Ministry of Nature Protection developed a Draft of the *"Perspective plan on SPAs network development in Turkmenistan"*. Territory with regulated nature use will cover nearly 50%, and within ecological structure (Econet) it will enable to increase its area to 6% in 2010. In future the key element for nature protection will be national parks on the basis of the current reserves. Moreover, it is planned to establish the Karakum reserve in the desert.	

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Turkmenistan initiated introduction of a mechanism for a long-term international cooperation on biodiversity conservation and sustainable use and coordination in the framework of Pan-European Biological and Landscape Diversity Strategy (PEBLDS). The regional project "ECONET Development for Long-Term Biodiversity Conservation in Central Asia" (UNEP/GEF/WWF; 2003-2006) is at the final stage of implementation. Complex information analysis was unified in a format of geo-information system, which enabled to find out 18 clusters of ecological structure and suggest regime of their protection taking into account socio-economic conditions. ECONET activities programme is aimed at integrating network into the context of regional and national sustainable development plans.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

The national project "Conservation and Sustainable Use of Global Biodiversity in Hazar Reserve at the Caspian Sea Coast" (UNDP/GEF) has been approved for implementation. The project *"Conservation of Biological and Landscape Diversity of the Kugitang Mountains in Turkmenistan*" was implemented on PDF "A" stage (2002-2004) (UNDP/GEF) and a draft of the request-document was prepared for GEF funding the project *"Conservation of Biological and Landscape Diversity of the Kugitang Mountains in Turkmenistan"*.

VI) Constraints to achieving progress towards the target

- Lack of financial, human and technical resources
- Lack of knowledge on eco-systematic approach to management and practice of its application

VII) Any other relevant information

Box XXIX.

Target 6. At least thirty percent of production lands managed consistent with the conservation of plant diversity.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target *Cease degradation process of natural landscapes for 30% of their territories, by the end of 2010.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target on production land regulation in accordance with conservation of biodiversity has been incorporated into the BSAP.	
III) Current status (please indicate current status related to this target)	
To support local communities living in SPA adjacent territory administrations of "Turkmenmallary" Association and Kopetdag, Syunt-Hasardag and Badkhyz reserves of the MNP signed agreements in 2005. Local population got permissions to seasonal pasture of domestic animals on the territory of sanctuaries of these reserves.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Activities on elimination negative factors of land degradation are conducted within the GTZ/GEOPLAN project in accordance with the principles of conservation and efficient use of plant resources.	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
VI) Constraints to achieving progress towards the target	
• Inadequate capacity to make decisions; • Lack of mechanism to transfer technologies and expert knowledge.	
VII) Any other relevant information	

Box XXX.

Target 7. Sixty percent of the world's threatened species conserved *In-situ*.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	

National target

Increase investments to support scientific capacity of institutions that address biodiversity issues for 30%, by the end of 2010.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

The BSAP contains strategic component ? .6. – *"Conservation of rare and threatened species (in-situ)"* to conserve endangered species. The Red Data Book of Turkmenistan (1999) is a programme of activities to restore the number of endangered plant and animal species; it contains 109 plant species including 28 extinct or endangered ones. Four categories of rare species were adopted:

Category 1. Extinct (or endangered) – species (sub-species), the number of which decreased to such extent that their rescue is impossible without special measures;

Category 2. Declining – species (sub-species), the number of which is sufficient to survival, but continuously reducing as well as habitat. They can become extinct if factors of their number reduction are not eliminated;

Category 3. Rare- species (sub-species) with narrow habitat and low number. Currently they are not endangered but in case of their habitat change or under anthropogenic impact they can be extinct;

Category 4. Data deficient (indefinite) – data on these species (sub-species) is insufficient to assess the risk of the extinction and does not allow to relate them to any listed categories.

III) Current status (please indicate current status related to this target)

Research (mainly phenological observations) is conducted in reserves to study status of specific extinct plant species. A live onion collection (65 species) has been created at the experimental plot of the NRIFF. Computer database *"Rare and extinct plant species of Kopet-dag"* (www.ecostan.info/dbank) has been developed. Activities to develop a format for flora database in protected areas have started. Listings of all current reserves flora and fauna have been made up.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Specific protection and research measures for each endangered plant species are specified in the second edition of the Red Data Book of Turkmenistan (1999). However, it is still necessary to develop special measures to conserve these plant species in the whole country. Precise number of individuals is not identified for many extinct species. Therefore, personnel of protected areas are actively involved in the process of identification the number of rare species located on their territories.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
Number of rare species that "pretend" to be included into next volumes of the Red Data Book
VI) Constraints to achieving progress towards the target
Weak interaction mechanism at the national and international levels
VII) Any other relevant information

Box XXXI.

Target 8. Sixty percent of threatened plant species in accessible *Ex-situ* collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target *Improve agro-biodiversity and nature genofund habitats (ex-situ) status for 30%, by the end of 2008.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
Biodiversity target has been incorporated into the NEAP and BSAP.	
III) Current status (please indicate current status related to this target)	
During 70 years scientists of many generations collected a live collection of wild fruit-trees in Makhtumkuli scientific-production experimental center of genetic resources in the dry subtropical zone of south-western Kopetdag. Collections of pomegranate, grape, apple-tree, pear, apricot, almond, fig and other species are a genetic bank of wild relatives of plant crops of Central Asian genetic center. These are species that form up to 90% of regional range of the country fruit crops. Currently there are 1937 samples in the collection. Database contains 450 samples of Turkmen plants and 1000 samples of regional origin. Ashgabat Botanical Garden has a collection of 4716 plant species, forms and grades (including 450 species of Turkmen origin). There are 7 permanent and 20 temporary operating nurseries (1250 ha), where annually up to 20 million seedlings and transplants of conifer and deciduous plant species are cultivated.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

Turkmenistan is a component of plant genetic resources net of Central Asia and Trans-Caucasus (CATCN-PGR). For the first time Turkmenistan jointly with UNEP, International Plant Genetic Resources Institute (IPGRI) and International Center for Agriculture Research on Dry Areas (ICARDA) started implementing the regional strategy on national agro-biodiversity conservation and sustainable use. Turkmenistan participation in the first stage (2000-2004) of the regional project (UNEP/GEF/IPGRI) *"Agro-biodiversity In situ/on farm conservation (fruit crops and their wild relatives) in Central Asia"* became a first step in expanding activities to increase the role of farm communities in addressing issues on the level of the state. Endevour to openness and equality in natural resources management will enable the civil society to take responsibility for conservation of national agro-biodiversity. The project (2006-2010) is aimed at capacity building of farmers and local population to conserve in situ/on farm local fruit crops and their wild relatives.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
Establishment of the National Gene Bank of Turkmenistan located in "Ak Bugdai" (*White Wheat*) Museum of the Grain Crop Research Institute and collection of genetic materials of seeds, melon-crops, fruit crops and other species have started.

VI) Constraints to achieving progress towards the target
Insufficient scientific and technical capacity;

VII) Any other relevant information

Box XXXII.

Target 9. Seventy percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
Nationa target *Improve agrobiodiversity status and nature genofund habitat for 30% by the end of 2008.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The target is has been incorporated into NEAP and BSAP.	
III) Current status (please indicate current status related to this target)	

Implementing the Presidential Decree on food independence Turkmenistan enters common international process of sustainable development.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Several initiatives are implemented in the country on specific crops, for instance, on wheat (State Programme "Grain"), but no specific measures have been developed to conserve genetic diversity of all agriculture crops and local grades that ensure food independence of the country. The country is not a Party to the International Agreement on conservation of plant genetic resources, though the process of displacing local vegetable species (tomato, cucumber, and radish) from the market is significantly increasing each year.

One of the key sectors of agriculture of Turkmenistan is melon crop growing and melon (more than 400 species) was a leader in planting area during many years. The National Research Institute of Deserts, Flora and fauna developed chemical, agro-technical and biological melon fly control methods aimed at increasing yield, which enables to return ancient melon grades into production.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Significant progress to support resources that provide food independence of the country for the interests of the population well-being within the partnership cooperation *"Agreement between the Ministry of Agriculture of Turkmenistan and International Center ICARDA on Joint Cooperation in Agriculture Science"* (2003).

VI) Constraints to achieving progress towards the target

- Current scientific and traditional knowledge are not used in full;
- Inadequate observance of regulations regarding filing documents on loss of biodiversity and relevant goods and services.

VII) Any other relevant information

Box XXXIII.

Target 10. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
The national target has not been established though the issue of alien species is considered in the BSAP in general.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
Sometimes invasive species are met in plantations, but they are not competent enough to threaten other plants, natural plant communities and habitats.	
III) Current status (please indicate current status related to this target)	
Alien weeds *(invasive species)*, that have migrated during last years, form in montaine landscape "weeds" groupings around habitats. Introduced cultigens species *Ailanthus altissima, Sisymbrium wolgense, Conysanthus aquamatus* etc. often stand for alien species in the structure of natural flora, but they cover small areas.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Measures have not been developed	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
Indicator: quality analysis of flora composition.	
VI) Constraints to achieving progress towards the target	
Insufficient rate of awareness with respect to preventive and preceding measures	
VII) Any other relevant information	

Box XXXIV.

Target 11. No species of wild flora endangered by international trade.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
The national BSAP target on protection of wild flora species endangered by international trade has not been established though some of its activities are aimed at addressing this issue.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
III) Current status (please indicate current status related to this target)	
Liquorice root *(Glycyrrhiza glabra)* is a main object of Turkmenistan foreign trade. Agro-industrial complex "Buyan" at the Ministry of Health and Medical Industry of Turkmenistan produces up to 6-7 tons of liquorice every year, 7-80% of it is exported to developed countries. Turkmenistan has not acceded the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), though it implements its requirements. Formally there is a legal basis, which is in accord with CITES principles (Customs Code of Turkmenistan and Regulation on Commodity Transit Shipments across the Customs Borders), which practically affect poaching and illegal trade. In accordance with the legislation of Turkmenistan all existing biological resources are considered as national treasure. It is set forth in the Law of Turkmenistan *"On Protection and Efficient Use of Flora"*(1997); in accordance with this law citizens of Turkmenistan as well as legal persons representing other states shall be users of the biological resources but with accordance of the procedure set forth in the law. Further process of democratization of the national legislation is connected with the broadening of the list of commodities prohibited for export and its compliance with the CITES Lists (Annexes), and making Customs procedures more strict. Six flora species are under the Washington Convention: *Sternbergia lutea*, *Euphorbia monostyla*, *Anacamptis pyramidalis*, *Orchis fedtschenkoi*, *O.simia*, *Ophrys transhyrcana*, several of them are enlisted in the Red Data Book of Turkmenistan (1999).	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Within the BSAP strategic component there are activities (I.2.2.) to regulate import, export and transit shipping of threatened species.	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	

The BSAP planned activity on developing and implementing protocols for regulating import, export and transit shipping of threatened species has not been fulfilled in the country.

VI) Constraints to achieving progress towards the target

- Limited capacity of law-enforcement coercion;
- Inadequate observance of regulations regarding filing documents on loss of biodiversity and relevant goods and services.

VII) Any other relevant information

Box XXXV.

Target 12. Thirty percent of plant-based products derived from sources that are sustainably managed.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	

The target has been established for two crops: wheat and cotton, which provide the country with grains for bread production and raw for textile industry.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

Key objectives for food independence are developed in the national programme *"Strategy for Economic, Political and Cultural Development of Turkmenistan for the period till 2020"*. The Presidential programme *"Grain"* is focused on sustainable production of bread ensuring food needs of the country through internal resources. Other strategic sectors of agriculture are based on development of other plant crops: production of fruit and nuciferous crops, grapes, vegetables and melons, etc.

III) Current status (please indicate current status related to this target)

The national collection of Turkmenistan maintains more than 100 ancient grades, forms and types of folk selection of 19 cultivated plant species, selected and known in Turkmenistan long time ago. The local white wheat species – *ak bugdai* – has been conserved; it had been cultivated already five thousand years ago. Turkmen wild melons and water-melons, leguminous plants (barley, chick-pea, lentil, mash) are excellent source material for further selection work. Among wild species we have onions (65 species), rye, barley millet, oats, carrot, pumpkin and many forest fruit species (pistachio, pomegranate, grapes, apple-tree, etc.); they represent genetic fund of food, technical, dying and medicinal plants.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Pursuant to the national programme *"Strategy for Economic, Political and Cultural Development of Turkmenistan for the period till 2020"* development of starategic sectors of agriculture is in progress.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

VI) Constraints to achieving progress towards the target

Current scientific and traditional knowledge are not used in full

VII) Any other relevant information

Box XXXVI.

Target 13. The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.

I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X

Please specify

The problem of genetic resources use from positions of radical people interests is at a stage of consideration.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	

Please specify

In the framework of rendering support and assistance to nature protection activities related to culture and traditions of the people the BSAP included a package of the following activities:

Support to biodiversity conservation in line with traditional cultural practice (?.5.1.);

Encourage rebirth of national traditions and culture connected with biodiversity conservation (?.5.2.);

Adopt measures to encourage conservation of traditional dog breeds (alabai and tazy) for example national centers, amateur dog-owners' clubs, database of pedigree dogs, training in stud book maintenance and support to shepherd breeding farm (?.5.3.).

III) Current status (please indicate current status related to this target)

A thousand years of farming and cattle-breeding traditions cultivated Turkmen people ecological culture, which is implemented in traditionally stable stereotypes. However, knowledge of indigenous and local communities that guarantees food security on local level and health of population is not supported on the governmental level. This issue is revealed in the Holy Book of "Ruhnama", where many examples to show provision of lifehood means from of indigenous population are given. After acquiring independence traditional healing by folk healers – *tebibs* - started to revive, but they work out of legal field. No relevant legislative regulations have been developed in the country, which would legalize *public form of health* protection and protection of traditional knowledge.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Turkmenistan enters the process of international negotiations on traditional knowledge. Institute of Medicines has been opened in the country to manufacture drugs from plants and natural means using centuries-old experience of folk medicine.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Students of the faculty of pharmacy at the Turkmen State Medical Institute study a special course on use of medicinal plants. In some hospitals there are groups who collect medicinal plants to make up herbal decoctions, tinctures, etc and use them together with main treatment.

VI) Constraints to achieving progress towards the target

- inadequate observance of regulations regarding filing documents on loss of biodiversity and relevant goods and services;
- lack of legislation on traditional knowledge protection;
- current scientific and traditional knowledge are not used in full.

VII) Any other relevant information

Box XXXVII.

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target *Improve public-awareness on biodiversity importance for 50% and increase level of their ecological education for 10%, by the end of 2007*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
This target is incorporated into the BSAP strategic component ?. *"Ecological education and public awareness"*. In the BSAP it is considered as *"ecological education of students and increase of public ecological education"*. Public awareness on biodiversity conservation is a basis for all planned nature protection activities, which are focused on increase of ecological education of civil society (?.1.–?.6.).	
III) Current status (please indicate current status related to this target)	
Ecology is a course within a unified state curriculum of the subject *"Theory of Saparmurat Turkmenbashi on Nature protection"*, launched by the Ministry of Education in 2000. The majority of this curriculum gives basic information necessary to realize the provisions of the Convention on Biological Diversity. Biodiversity curriculum at the higher institutions is split among other key disciplines. It is planned to establish a public resource center on ecological education at the Turkmen State University after Makhtumkuli. In order to implement the global target it is necessary to maintain and develop the current ecological education capacity, which includes nature museums, ecological clubs, "green patrols", ecological camps, ecological actions, ecological shows and festivals of ecological fashion.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

Specific educational programmes on biodiversity have not been developed in the country. School and university curricula have a special course "Holy Ruhnama". Study of "Ruhnama" after the President of the country enables to get to know richness of the spiritual world of the Turkmen people, study its philosophy, take centuries-old experience of communication with nature.

Pre-school education and rearing children is conducted in accordance with the national curriculum focused on developing inner world of a child taking into account people's traditions and customs. Ecological concepts are covered in the courses of Nature, Biology and Geography cycle at the secondary schools. Traditional off-hour forms of education are used to advocate knowledge related to ecological security, efficient nature use and biological diversity conservation: a Day of Ecological Knowledge, thematic parties, Olympiads, poster competitions, lectures on nature protection, etc.

Local population acquires some knowledge on biodiversity and importance of its conservation within educational programme projects implemented in Turkmenistan with support of the international donors.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Indicator: number of specialists: botanists, zoologists, who work in the area of biodiversity and a number of students trained in the country's universities.

VI) Constraints to achieving progress towards the target

- limited involvement of public and subjects of activities
- level of public education and awareness

VII) Any other relevant information

Box XXXVIII.

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	

Please specify

National target

Increase investments to support scientific capacity of institutions that address biodiversity issues for 30%, by the end of 2010.

II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	

Please specify

The National target on biodiversity ecological education is incorporated in the BSAP component D. "*Institutional strengthening and capacity building*" and covers a package of activeities.

III) Current status (please indicate current status related to this target)

The country's capacity presented by 70 botanists, including 4 Doctors of Biological Science (Ph.D) and 12 Candidates of Biological Science (MS) are directly involved in issues of plant conservation. One third of specialists maintain skills of taxa studies. Young specialists graduated from the university but without professional specialization is a good reserve. Moreover, specialists in general management on efficient introduction and use of natural resources are trained outside the country.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The students get skills in "Botany" at the Turkmen State University after Makhtumkuli and Turkmen State Pedagogical Institute after Seidi.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Every year 10-12 young specialists in botany graduate from the educational institutions. Students of the Agriculture University after S. Niyazov study Botany in small range.

VI) Constraints to achieving progress towards the target

- insufficient volume of financing of urgent scientific themes;
- low motivation of young specialists to conduct research;

VII) Any other relevant information

Box XXXIX.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
National target *Revise and develop nature protection laws in accordance with the Convention on Biological Diversity to fill in gaps in legislation, by the end of 2006.*	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The national target is adequately reflected in the BSAP strategic component I. *"Cooperation"*.	
III) Current status (please indicate current status related to this target)	
Turkmenistan actively participates in activities related to plant protection on the national, regional and international levels.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
Turkmenistan is a participant of the Plant Genetic Resources (PGR) Net of Central Asia and Transcaucasia (CATCN-PGR). The regional programme ECONET focuses on net integration in the context of regional and national sustainable development plans. With UNU/IAS support a net on bioresources and biosecurity has been established in the region of Central Asia and Mongolia (CAM). The regional GEF/UN/IAS project *"Regionally Unified National Consultative Process to Realize the Bonn Guidelines in Central Asia and Mongolia"* was developed; currently it is at the stage of approval.	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
Indicators of progress: information net on implementing biodiversity activities, which is under development now	
VI) Constraints to achieving progress towards the target	
- lack of adequate scientific and research capacity; - lack of the National Biodiversity Coordination Unit.	
VII) Any other relevant information	

Box XL.

Please elaborate below on the implementation of this strategy specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

On implementing the Global Plant Protection Strategy (GPPS)

a) Biodiversity Strategy and Action Plan (BSAP) for Turkmenistan was adopted before the 6th Conference of the Parties (? ? -6), where the Global Strategy was presented as an experimental approach to implementing the Convention targets (VI/9) focused on achievement specific outcomes. The 7th Conference of the Parties resolved to include the Strategy's targets (VII/10) into the reporting structure of the third national reports. The national programme *"Strategy for Economic, Political and Cultural Development of Turkmenistan for the period till 2020"* and the Presidential programme *"Grain"* are aimed at providing food independence of the country. On the basis of local plant raw resources – production of fruit and *??????????? ????? ??*, grapes, vegetables and melons, etc., other strategic agriculture sectors are developing.

b) Valuable nature territories have been identified from the point of view of biodiversity conservation and regime of their protection suggested taking into account local socio-economic conditions. ECONET activities focus on net integration into the context of the regional and national sustainable development plans, as well as introduction of safe mechanisms for long-term inter-state cooperation and action coordination.

Turkmenistan is a component of Plant Genetic Resources (PGR) Net of Central Asia and Transcaucasia (CATCN-PGR). With UNU/IAS support the bioresources and biosecurity net was established in Central Asia and Mongolia. The regional GEF/UN/IAS project *"Regionally Unified National Consultative Process to Realize the Bonn Guidelines in CAM"* has been developed; now it is under approval process.

Management-Plans for three reserves will be developed in 2006 taking into account specifics of each territory. They will become a basis for Methodological Guidelines to improve quality management of other protected areas. The Draft of the project "Perspective Development Plan of SPAs net of Turkmenistan" has been elaborated. In accordance with the basic principles of SPA establishment it is planned to expand the SPA area up to 6% by the end of 2010.

Ecologo-economic background for establishment the National Park of Turkmenistan is being developed. The process of implementing the plan on establishing the first national nature park in the Sumbar River valley of south-western Koperdag has started. Scientific background has been prepared to establish Balhan reserve (a package of documents); its priority is confirmed in NEAP and BSAP. Documents for organization Karakum reserve are under elaboration.

Turkmenistan jointly with UNEP, International Plant Genetic Resources Institute (IPGRI) and International Center for Agriculture Research on Dry Areas (ICARDA) started implementing the regional strategy on national agro-biodiversity conservation and sustainable use. Turkmenistan participation in the first stage (2000-2004) of the regional project (UNEP/GEF/IPGRI) *"Agro-biodiversity In situ/on farm conservation (fruit crops and their wild relatives) in Central Asia"* became a first step in expanding activities to increase the role of farm communities in addressing issues on the level of the state. Endevour to openness and equality in natural resources management will enable the civil society to take responsibility for conservation of national agro-

biodiversity. The project (2006-2010) is aimed at capacity building of farmers and local population to conserve in situ/on farm local fruit crops and their wild relatives. (2006-2010).

The issue of alien species as one of objectives of the Convention Strategic Plan plays no significant role. Some invasive (alien) species can be found in the montaine plantation. But with some exception (for instance, *Ailanthus altissima*), they are not competent enough to threaten other plans, natural plant communities and their habitats.

d). The national project "Global Biodiversity Conservation and Sustainable Use in Hazar Reserve on the Caspian Sea Coast" (UNDP/GEF; 2005-2010) should be considered as one of the outcomes of the BSAP. During implementation of PDF "? " stage of the project "*Conservation of Biological and Landscape Diversity of Kugitan Mountains in Turkmenistan*" (UNDP/GEF) a draft request-document was developed and submitted to GEF (2004); it will enable to realize a much detailed and bigger project.

e). Ecology is a course within a unified state curriculum of the subject "*Theory of Saparmurat Turkmenbashi on Nature protection"*, launched by the Ministry of Education in 2000. The majority of this curriculum gives basic information necessary to realize the provisions of the Convention on Biological Diversity. Specific educational programmes on biodiversity have not been developed in the country. Computer database "*Rare and extinct plant species of Kopetdag*" (www.ecostan.info/dbank) has been developed. The Memorandum on Cooperation in Education and Science was concluded between Turkmenistan and the Russian Federation (2000).

f) Initiatives target (taxonomy and flora) has not yet been integrated in the national plans, programmes and strategies of Turkmenistan, as it is not a priority in the socio-economic development of the country. At the same time during long-term studies (since the end of XIX century) huge materials on flora and taxonomy were collected. All information on flora was published and available to public. The electronic version of the complete flora structure of higher and lower plants is not available. The Herbarium Fund of the country, which is not yet computerized, is a repository of initial scientific documents on flora biodiversity.

The programme of research of the rare extinct plant species is not conducted to full extent (indicator – lack of publications for public). No models and procedures of economic incentives to conserve plants and their sustainable use are developed. Preliminary measures on establishing a mechanism for use of knowledge of indigenous and local communities that ensure food provision at the local level is not currently under consideration.

Turkmenistan has not acceded the Washington Convention on International Trade in endangered Species of Wild Fauna and Flora (CITES; 1975); nevertheless the country implements its requirements. Turkmenistan takes part in the work of nets to implement activities of plant conservation and contribute the process of implementing the Global Taxonomic Initiative.

Ecosystem Approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. At its second meeting, the Conference of the Parties has affirmed that the ecosystem approach is the primary framework for action under the Convention (decision II/8). The Conference of the Parties, at its fifth meeting, endorsed the description of the ecosystem approach and operational guidance and recommended the application of the principles and other guidance on the ecosystem approach. The seventh meeting of the Conference of the Parties agreed that the priority at this time should be facilitating implementation of the ecosystem approach. Please provide relevant information by responding to the following questions.

3. ? [1] Is your country applying the ecosystem approach, taking into account the principles and guidance contained in the annex to decision V/6? (decision V/6)	
a) No	
b) No, but application is under consideration	
c) Yes, some aspects are being applied	x
d) Yes, substantially implemented	

4. ? Is your country developing practical expressions of the ecosystem approach for national policies and legislation and for implementation activities, with adaptation to local, national, and regional conditions? (decision V/6)	
a) No	
b) No, but development is under consideration	
c) Yes, practical expressions have been developed for applying some principles of the ecosystem approach	x
d) Yes, practical expressions have been developed for applying most principles of the ecosystem approach	

5. Is your country strengthening capacities for the application of the ecosystem approach, and providing technical and financial support for capacity-building to apply the ecosystem approach? (decision V/6)	
a) No	x
b) Yes, within the country	
c) Yes, including providing support to other Parties	

6. ? Has your country promoted regional cooperation in applying the ecosystem approach across national borders? (decision V/6)	
a) No	
b) Yes, informal cooperation (please provide details below)	
c) Yes, formal cooperation (please provide details below)	X

[1] Please note that all the questions marked with ? have been previously covered in the second national reports and some thematic reports.

Further comments on regional cooperation in applying the ecosystem approach across national borders.

Turkmenistan takes an active part in regional cooperation aimed at using ecosystemat approach on trans-boundary basis. Turkmenistan signed the Framework Convention on the Protection of the Marine Environment of the Caspian Sea (2004), agreements on the level of the Heads of the States on joint activities in addressing issues of the Aral Sea (1993), Memorandums (on *Bukhara deer, crane, saiga*) within the Bonn Convention, as well as trans-boundary regional projects (ECONET, C? ? ?, etc.). The regional GEF/UN/IAS project *"Regionally Unified National Consultative Process to Realize the Bonn Guidelines Principles in CAM"* has been developed and activities to implement the project *"Agrobiodiversity Conservation in situ/on farm (fruit crops and their wild relatives) in Central Asia"* are being launched.

7. Is your country facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach? (decisions VI/12 and VII/11)

a) No	
b) No, some programmes are under development	X
c) Yes, some programmes are being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach.

To assess the national capacity on implementing three global environmental Rio-conventions: on biodiversity, change of climate and combat desertification the project *"Turkmenistan: self-assessment of needs to build national potential"* was launched. Moreover, the second stage of the project "Biodiversity Conservation in Turkmenistan" is being started to determine needs of institutional capacity. Project outcomes will create special environment for balanced achievement of 3 objectives within the Convention on Biodiversity.

Furthermore, on the basis of the agreement between the Heads of the States on joint activities in addressing issues of the Aral Sea the "Programme of Specific Actions to Improve Ecological and Economic Environment in the Aral Sea Basin for the period 2003-2010" was developed (2001) .

8. Is your country creating an enabling environment for the implementation of the ecosystem approach, including through development of appropriate institutional frameworks? (decision VII/11)

a) No	X
b) No, but relevant policies and programmes are under development	
c) Yes, some policies and programmes are in place (please provide details below)	
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further comments on the creation of an enabling environment for the implementation of the ecosystem approach.

One of the supporting elements to establish incentive environment for ecosystematic approach is the law "On State Ecological Expertise" (1995) and the national concept of sustainable forest use (1998), which is focused on growing plantation and forest around Ashgabat and other cities of Turkmenistan. The law of Turkmenistan "On Property" recognizes the exclusive right of the State to "… forest fund, water resources, … protected by the State or any other means used nature areas, objects of historic and cultural heritage of Turkmenistan …). Moreover, agreements on interaction in ecology and environment protection of CIS State-Parties were concluded (1992), as well as on cooperation between the Ministry of Nature Protection of Turkmenistan and WWF on biodiversity conservation on specially protected areas (2001).

C. ARTICLES OF THE CONVENTION

Article 5 – Cooperation

9. ? Is your country actively cooperating with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biological diversity?

a) No	
b) Yes, bilateral cooperation (please give details below)	
c) Yes, multilateral cooperation (please give details below)	X
d) Yes, regional and/or subregional cooperation (please give details below)	
e) Yes, other forms of cooperation (please give details below)	

Further comments on cooperation with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biodiversity.

Turkmenistan cooperates with countries of Central Asia, ICARDA International Center and IPGRI for the conservation and sustainable use of biological diversity. Turkmenistan also cooperates with the Russian Federation, Azerbaijan, Kazakhstan and Iran within the CEP and with countries of Central Asia to address issues related to the problems of the Aral Sea. The ecological Network with regulated nature use is being developed by the Russian branch of WWF jointly with Turkmenistan. UN University/Institute of Advanced Technologies (? ? ? /IAS) starts to develop a Network in CAN region on bioresources and biosecurity. In 1995 the Interstate Sustainable Development Commission (ISDC) was established with support of the International Fund for Aral Sea (IFAS).

10. Is your country working with other Parties to develop regional, subregional or bioregional mechanisms and networks to support implementation of the Convention? (decision VI/27 A)	
a) No	
b) No, but consultations are under way	
c) Yes, some mechanisms and networks have been established (please provide details below)	X
d) Yes, existing mechanisms have been strengthened (please provide details below)	

Further comments on development of regional, subregional or bioregional mechanisms and networks to support implementation of the Convention.

The project on establishing ecological network (ECONET) for long-term biodiversity conservation in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) is at the stage of completion. The Central Asian project "Key Ornithological Areas of Central Asia" (KOA) focuses on protection of territories that cover the most representative bird habitats, in particular endangered species. Turkmenistan is a component of plant genetic resources (PGR) Net of Central Asia and Transcaucasia (CATCN-PGR). Turkmenistan completed the first stage (2000-2003) of the UNEP/GEF/IPGRI regional project *"Agrobiodiversity in-situ/on farm conservation (fruit crops and their wild relatives)"*. ICARDA and IPGRI provide assistance to Central Asian region using mechanism of coordination of Central Asian and Caucasian network on PGR. Bioresources and biosecurity network was established in the region of Central Asia and Mongolia (2003).

11. Is your country taking steps to harmonize national policies and programmes, with a view to optimizing policy coherence, synergies and efficiency in the implementation of various multilateral environment agreements (MEAs) and relevant regional initiatives at the national level? (decision VI/20)	
a) No	
b) No, but steps are under consideration	X
c) Yes, some steps are being taken (please specify below)	
d) Yes, comprehensive steps are being taken (please specify below)	

Further comments on the harmonization of policies and programmes at the national level.

Background documents for ratification of the Kartahen Protocol on Biosecurity to the Convention on Biological Conservation as well as the Ramsar Convention for signing have been prepared and submitted to the Cabinet of Ministers of Turkmenistan for agreement. Use of ecologically secure technologies adapted to local conditions will enable in practice to conserve biodiversity and use its resources efficiently.

Box XLI.

Please elaborate below on the implementation of this strategy specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
?) Some aspects of complex management of land, water and live resources were used in developing the regional ECONET and management-plans of the protected areas, where each reserve represents ecosystem of its region. In 2005 the Ministry of Nature Protection of Turkmenistan elaborated the project *"Perspective Plan of SPA Net Development in Turkmenistan*". Moreover, there are sustainable forms of forest use (*Forest Code*, 1993; *Sanitary Code*, 1992), and the Law "*On State Ecological Expertise"* (1995). b) The country has a rather favourable political and economic environment to widen cooperation at all levels. Implementation of the targets within the national programme *"Strategy for Economic, Political and Cultural Development of Turkmenistan for the period till 2020"* is focused on fulfillment the country's commitments under the Convention on Biodiversity. At the same time the country's material, technical and financial basis is insufficient to establish incentive environment for the transfer to the Strategy practical use. c) In developing the Pan-European Strategy for Conservation of biological and landscape diversity Turkmenistan takes first steps in building capacity for implementation the commitments under three global Rio-conventions. f) For the country's transfer to complex management of land, water and live resources it is necessary to accelerate the process of harmonization the national legislative basis and widen international and regional cooperation. The country's transfer to ecologically safe technologies adapted to local conditions will enable to implement biodiversity conservation and sustainable use in practice.

Article 6 - General measures for conservation and sustainable use

12. Has your country put in place effective national strategies, plans and programmes to provide a national framework for implementing the three objectives of the Convention? (Goal 3.1 of the Strategic Plan)	
a) No	
b) No, but relevant strategies, plans and programmes are under development	
c) Yes, some strategies, plans and programmes are in place (please provide details below)	X
d) Yes, comprehensive strategies, plans and programmes are in place (please provide details below)	

Further comments on the strategies, plans and programmes for implementing the three objectives of the Convention.
The BSAP (2002) is a national tool that provides a balanced achievement of three Convention objectives. Integrated actions within three strategic components (? . In-situ conservation; ? . Ex-situ conservation; ? . Sustainable use of biological and landscape diversity) allowed

implementing Article 6 of the Convention. The country developed the project *"Perspective Plan for SPA Net Development in Turkmenistan"*.

13.? Has your country set measurable targets within its national strategies and action plans? (decisions II/7 and III/9)	
a) No	
b) No, measurable targets are still in early stages of development	
c) No, but measurable targets are in advanced stages of development	
d) Yes, relevant targets are in place (please provide details below)	x
e) Yes, reports on implementation of relevant targets available (please provide details below)	

Further comments on targets set within national biodiversity strategies and action plans.

On the basis of the Convention Articles (Articles 6-20) and the BSAP key principles 12 Strategy targets were developed; they were distributed among 55 interrelated actions and 14 strategic components. A set of 253 activities is aimed at implementing decisions of the Conference of the Parties.

14. Has your country identified priority actions in its national biodiversity strategy and action plan? (decision VI/27 A)	
a) No	
b) No, but priority actions are being identified	
c) Yes, priority actions identified (please provide details below)	x

Further comments on priority actions identified in the national biodiversity strategy and action plan.

The BSAP key priorities:

conservation of biological resources (strategic components ? and ?);

institutional strengthening and capacity building (D);

ecological education and public awareness (?);

scientific research (G)

information accessibility and exchange (H)

15. Has your country integrated the conservation and sustainable use of biodiversity as well as benefit sharing into relevant sectoral or cross-sectoral plans, programmes and policies? (decision VI/27 A)	
a) No	
b) Yes, in some sectors (please provide details below)	
c) Yes, in major sectors (please provide details below)	X
d) Yes, in all sectors (please provide details below)	

Further information on integration of the conservation and sustainable use of biodiversity and benefit-sharing into relevant sectoral or cross-sectoral plans, programmes and policies.

The BSAP has integrated conservation and sustainable use of biodiversity into relevant

sectoral plans and programmes (C and D). The issue of benefit sharing from sustainable use of biodiversity has been integrated in the BSAP but not at the sectoral levels of other programmes and action plans. For instance, conservation and sustainable use of biodiversity have not been integrated into the National Combat Desertification Action Plan and Action Plan on Mitigating Impact of the Global Climate Warming. The biodiversity issues have not been considered in analysis of economic sectors activities in the programme document *"Sustainable Development of Turkmenistan, RIO+10"* (2002) and the *"Regional Environment Protection Action Plan for Central Asia*" (UNEP, 2001).

16. Are migratory species and their habitats addressed by your country's national biodiversity strategy or action plan (NBSAP)? (decision VI/20)	
a) Yes	X
b) No	
I) If **YES**, please briefly describe the extent to which it addresses	
(a) Conservation, sustainable use and/or restoration of migratory species	
(b) Conservation, sustainable use and/or restoration of migratory species' habitats, including protected areas	**?** (conservation of migratory routes**)**
(c) Minimizing or eliminating barriers or obstacles to migration	
(d) Research and monitoring for migratory species	**?** (database on biodiversity of water marshes under the Ramsar convention)
(e) Transboundary movement	**?** (at the level of inter-state agreement and harmonization of the national legislation)
II) If **NO**, please briefly indicate below	
(a) The extent to which your country addresses migratory species at national level	
(b) Cooperation with other Range States since 2000	

Biodiversity and Climate Change

17. Has your country implemented projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use? (decision VII/15)	
a) No	
b) No, but some projects or programs are under development	X
c) Yes, some projects have been implemented (please provide details below)	

Further comments on the projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use.

Limited studies on assessment vulnerability and adaptation of agrobiodiversity specific components (cotton, alfalfa and wheat) to climate change were conducted within the GEF project *"First National Report on the UN Framework Convention on Climate Change"* in Turkmenistan (first stage - 1997-2000; second stage – 2002-2003).No biodiversity monitoring indicators were selected; the phenomenon of desert communities movement outside climatically determined borders was not studied. Impact of climate change to the issue of biodiversity conservation and sustainable use also remained outside the project objectives.

18. Has your country facilitated coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification? (decision VII/15)	
a) No	
b) No, but relevant mechanisms are under development	
c) Yes, relevant mechanisms are in place (please provide details below)	X

Further comments on the coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the UNFCCC and the UNCCD.

Overlapping assessment of capacity of three international conventions (biodiversity, desertification and climate) in the project *"Turkmenistan: Self-Assessment of Needs to Build the National Capacity"* (2004-2006) will enable to identify resources to maintain and increase resistance of biodiversity components to climate change.

Box XLII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) The BSAP (2002) is a national tool that provides a balanced achievement of three Convention objectives. On the basis of the Convention Articles (Articles 6-20) and the BSAP key principles measurable targets were developed and priority areas identified.

b) The country coordinated actions to ensure that the projects on mitigating impacts of

climate change and adaptation to them correspond to obligations under the UN Framework Convention on Climate Change (FCCC) and the UN Convention on Desertification Combat (CDC).

c) The BSAP has integrated conservation and sustainable use of biodiversity into relevant sectoral plans and programmes, and the issue of benefit sharing from sustainable use of biodiversity. The issues of migratory species and their habitats have been integrated in the BSAP at the level of the national legislation harmonization, conservation of migratory routes and conducting research.

d) Within the project *"Turkmenistan: Self Assessment of Needs to Build the National Capacity*" (2004-2006) the resources to maintain and increase resistance of biodiversity components to climate change and desertification processes.

f) The issue of sharing benefits from sustainable use of biodiversity has not been integrated at the sectoral levels of other programmes and action plans and has not been incorporated into the National Desertification Combat Action Plan and Action Plan on Mitigating Impact of the Global Climate Warming. No projects on mitigating impacts of climate change and adaptation to them are implemented in the country where biodiversity conservation and sustainable use in the conditions of desert communities' movement outside the climatically defined borders would be considered.

Article 7 - Identification and monitoring

19.? On Article 7(a), does your country have an ongoing programme to identify components of biological diversity at the genetic, species, ecosystem level?	
a) No	
b) Yes, selected/partial programmes at the genetic, species and/or ecosystem level only (please specify and provide details below)	X
c) Yes, complete programmes at ecosystem level and selected/partial inventories at the genetic and/or species level (please specify and provide details below)	

Further comments on ongoing programmes to identify components of biodiversity at the genetic, species and ecosystem level.

The programme to determine biodiversity components (NRDFF, reserves) that are significant to their conservation and sustainable development is partially being implemented in the country. These studies are mainly conducted at species and ecosystem levels. After changing profiles of scientific and research institutes at the Academy of Sciences of Turkmenistan (1998) all programmes at genetic levels were ceased except horse-breeding and Amu-dar shovelnose sturgeons.

20.? On Article 7(b), which components of biological diversity identified in accordance with Annex I of the Convention, have ongoing, systematic monitoring programmes?	
a) at ecosystem level (please provide percentage based on area covered)	Not less than 10%
b) at species level (please provide number of species per taxonomic group and percentage of total known number of species in each group)	10-15% of species number of total number

c) at genetic level (please indicate number and focus of monitoring programmes)	No

Further comments on ongoing monitoring programmes at the genetic, species and ecosystem level.

Ongoing systematic monitoring programmes at ecosystem level

Biodiversity monitoring programmes

Annual programme "Nature Chronicle" for SPAs;

State Ecological Expertise

Central Asian project *"Key Ornithological Areas of Central Asia"* (2004-2007) in the framework of the international nature protection programme. The process of KOA (more than 50) identification and description has started in Turkmenistan. Species monitoring will be conducted on the basis of identified criteria.

ECONET development for long-term biodiversity conservation in Central Asia (UNEP/GEF/WWF; 2003-2005). In ecological structure of Turkmenistan 18 clusters were revealed; reserves are located on the territory of 9 clusters.

Ongoing systematic monitoring programmes at species level

Biodiversity monitoring programmes

Leopard conservation in Kopetdag (1999-2002);

Tugai deer conservation in Turkmenistan (1999-2002);

Support conservation of tugai deer and leopard populations in their habitats (2002-2006);

Ecotoxicological studies of the Caspian seal;

Create onion (*Allium*) live collection

21.? On Article 7(c), does your country have ongoing, systematic monitoring programmes on any of the following key threats to biodiversity?

a) No	
b) Yes, invasive alien species (please provide details below)	
c) Yes, climate change (please provide details below)	
d) Yes, pollution/eutrophication (please provide details below)	x
e) Yes, land use change/land degradation (please provide details below)	
f) Yes, overexploitation or unsustainable use (please provide details below)	

Further comments on monitoring programmes on key threats to biodiversity.

The programme of systematic environmental biodiversity status monitoring was developed only for protected areas in "Nature Chronicles", in which all parameters of biodiversity and environment changes as well as environmental affect to biodiversity are annually registered. The Herbarium Fund is a unique scientific monitoring document, which includes information on impact of all factors that negatively affect biodiversity. During more than one hun-

dred years more than 250 pieces of herbarium of higher plants were collected, as well as mycological, lichenological and briological herbarium collected from the whole territory of Turkmenistan and adjacent Iran. Herbarium sample is a scientific document to conduct monitoring studies at the species and genetic levels.

Threats to biodiversity are partially evaluated during conducting ecological expertise, warning on probable negative impact on it. In all other ongoing programmes of ecological monitoring, namely, environment impact assessment (EIA), climate change and land desertification (degradation) observations over their negative impact on biodiversity (in-situ) are not conducted. Ecological monitoring of environment status (air, soil, wind, water, etc.) is conducted in the country by Turkmengidromet and the Ecological Monitoring Center at the NIDFF. Unfortunately, no monitoring studies are conducted in the country on alien species.

22.? On Article 7 (d), does your country have a mechanism to maintain and organize data derived from inventories and monitoring programmes and coordinate information collection and management at the national level?

a) No	
b) No, but some mechanisms or systems are being considered	
c) Yes, some mechanisms or systems are being established	X
d) Yes, some mechanisms or systems are in place (please provide details below)	
e) Yes, a relatively complete system is in place (please provide details below)	

Further information on the coordination of data and information collection and management.

Within the Ministry of Nature Protection the country started to establish a database for SPA animal and plant species enlisted in the Red Data Book of Turkmenistan, as well as database on SPA water resources. "Rare and extinct plant species of Kopetdag" database was developed (2004) www.ecostan.info/dbank. Regional outlines on flora and some vertebrates of the current reserves were made in printed version. More than 60 studies, collections of articles and determinants were published. A concept of the regional biodiversity monitoring programme of the Caspian Sea (phytobenthos, zoobenthos and plankton) is being developed to establish a database within the CEP programme.

The Herbarium of the country (more than 250 thousand pieces of higher plants), the national value of Turkmenistan, is a scientific flora database and collection of scientific works. A unique library with a big number of books collected during more than 100 years, preserved on the territory of Repetek biosphere reserve.

Being a member of the Interstate Sustainable Development Commission (ISDC) Turkmenistan coordinated the whole process of information collection, and started integrated environment assessment. It releases daily bulletin on air pollution on the territory of Turkmenistan. Preparation to publishing the "*Environment Atlas*" is in progress (2006-2007).

National (1997) and sub-regional (2003) action programmes on desertification combat in Central Asia are in progress. The first national report on the UN Framework Convention on Climate Change was prepared. But mechanism to preserve and manage sectoral data received on the basis of inventory and monitoring programmes were not developed to a full extent. There is no government decision on rules of conducting monitoring of water, forest and fishery resources. Electronic database on specific components of biodiversity on protected areas (re-

serves) were elaborated and a new format was developed of Nature Chronicle, a document for monitoring national biodiversity.

23.? Does your country use indicators for national-level monitoring of biodiversity? (decision III/10)	
a) No	
b) No, but identification of potential indicators is under way (please describe)	
c) Yes, some indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	x
d) Yes, a relatively complete set of indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented	

Further comments on the indicators identified and in use.

Every year each of 8 current reserves submits to the Ministry of Nature Protection "Chronicle of Nature", where information is given in a unified format on main parameters changes of environment including biodiversity.

Sustainable development indicators were developed for the countries of Central Asian region (2004). Indicators of biodiversity status at species level are endangered species and their number, as well as a common indicator of flora and fauna species value. Indicators of ecological monitoring are indices and models of species abundance. Indicators of response are number of reserves and sanctuaries and their area, total area of SPAs in percentage to the total area of the country and representativeness of flora and fauna species in SPAs.

Box XLIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) At the national level a package of nature protection decrees was adopted, aimed at improving mechanism of coordination of biodiversity information collection and management. A mechanism of maintenance and organization of data obtained on the basis on inventory and monitoring programmes is under development. However, the mechanism of coordination of collected information and management at the national level obviously lag behind the international level.

Turkmenistan entered the process of long-term interstate cooperation on biodiversity monitoring (ECONET; ? ? A).Indicators of biodiversity status at species and ecosystem levels and indicators of response were determined. In future it is planned to introduce biodiversity parameters into mechanism of environment monitoring management, including monitoring of adverse affect on biodiversity caused by climate change. For instance, in the framework of the CEP programme

a concept of regional biodiversity monitoring of the Caspian Sea is being elaborated (phytobenthos, zoobenthos and plankton) to develop a database.

b) Within the projects implemented in Turkmenistan with support of various international donors (GEF, WWF, USAID, etc.) some definite volume of information on nature ecosystem biodiversity in their current status was collected. Significance of data integration, free access to it and share of information were identified.

?) Huge factual material on flora and fauna has been collected, unfortunately not yet reflected on Internet web-sites.

f) Currently there is no a unified biodiversity monitoring programme in Turkmenistan and no common methodological basis for collecting such data, including data from various sectors of economy on their impact to biodiversity. No decision has been taken on regulations relevant to conducting monitoring of alien species, as well as water, forest and fishery resources.

Decisions on Taxonomy

24.? Has your country developed a plan to implement the suggested actions as annexed to decision IV/1? (decision IV/1)	
a) No	X
b) No, but a plan is under development	
c) Yes, a plan is in place (please provide details below)	
d) Yes, reports on implementation available (please provide details below)	

Further information on a plan to implement the suggested actions as annexed to decision IV/1.

Taxonomic capacity plays a significant role in achieving the Convention objectives. Huge factual flora and fauna material was collected in the country during one hundred years. Currently the support of taxonomic activities is weakened. In developing NEAP and BSAP taxonomic initiatives action plan to achieve the global target by 2010 was not planned.

25.? Is your country investing on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections? (decision IV/1)	
a) No	X
b) Yes (please provide details below)	

Further information on investment on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections.

The government supports the infrastructure of the national taxonomic collections (Herbarium, Zoological Museum) through budget finances. In order to strengthen capacity of the national taxonomic studies long-term investments into current infrastructure are required. It is necessary to determine and integrate into the BSAP new edition the target on taxonomic initiatives within the strategic component "A. - Conservation in-situ", "?. – Conservation ex-situ" and "?. – Sustainable use". Partnership cooperation and complementary financial resources to strengthen taxonomic capacity will enable the country to establish favourable environment for implementing the international global taxonomic initiatives programme.

26.? Does your country provide training programmes in taxonomy and work to increase its capacity of taxonomic research? (decision IV/1)	
a) No	
b) Yes (please provide details below)	X

Further information on training programmes in taxonomy and efforts to increase the capacity of taxonomic research.

Training of specialists in this area is conducted at the departments and faculties of biology at the higher institutions of the country (TSU, TSAU, TSPI):

28. Turkmen State University after Makhtumkuli, Turkmen State Pedagogical Institute after Seidi: specialty – Biology; qualification – biologist, teacher of Biology;

29. Turkmen State Agriculture University after S.A.Niyazov: specialty – Agronomy; qualification – agronomist; specialty – Zooveterinary, qualification – zooveterinarian.

No complex target training programmes on taxonomy; number of specialists in taxonomy is limited.

27.? Has your country taken steps to ensure that institutions responsible for biological diversity inventories and taxonomic activities are financially and administratively stable? (decision IV/1)	
a) No	
b) No, but steps are being considered	
c) Yes, for some institutions	X
d) Yes, for all major institutions	

28.* [2] Is your country collaborating with the existing regional, subregional and global initiatives, partnerships and institutions in carrying out the programme of work, including assessing regional taxonomic needs and identifying regional-level priorities? (decision VI/8)	
a) No	
b) No, but collaborative programmes are under development	
c) Yes, some collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessments)	X
d) Yes, comprehensive collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessment and priority identification)	

[2] The questions marked with * in this section on Taxonomy are similar to some questions contained in the format for a report on the implementation of the programme of work on the Global Taxonomy Initiative. Those countries that have submitted such a report do not need to answer these questions unless they have updated information to provide.

Further information on the collaboration your country is carrying out to implement the programme of work for the GTI, including regional needs assessment and priority identification.

Within specific projects, for instance, on mosquito groups and Amu-Dar shovelnose sturgeons, partnership was established between the specialists of NIDFF and taxonomists from Russia and the USA. On the basis of personal initiatives consultations on identification specific plant species are conducted at the Institute of Botany after Komarov (Saint-Petesburg, Russia).

29. * Has your country made an assessment of taxonomic needs and capacities at the national level for the implementation of the Convention? (annex to decision VI/8)

a) No	
b) Yes, basic assessment made (please provide below a list of needs and capacities identified)	x
c) Yes, thorough assessment made (please provide below a list of needs and capacities identified)	

Further comments on national assessment of taxonomic needs and capacities.

Taxonomic needs and capacities have been assessed in the framework of the project *"Turkmenistan: Self-Assessment of Needs to Build the National Capacity"* (2004-2006). More than 100 specialists are directly involved in studies of applied flora and fauna issues; one third of them maintain professional skills of taxonomic studies (10 botanists, 7 ornithologists, 7 entomologists, 5 parapsychologists, 3 ichthyologist and 1 terriologist). Need to conduct taxonomic studies is reflected in this project.

30. * Is your country working on regional or global capacity building to support access to, and generation of, taxonomic information in collaboration with other Parties? (annex to decision VI/8)

a) No	
b) Yes, relevant programmes are under development	
c) Yes, some activities are being undertaken for this purpose (please provide details below)	x
d) Yes, many activities are being undertaken for this purpose (please provide details below)	

Further comments on regional or global capacity-building to support access to, and generation of, taxonomic information in collaboration with other Parties.

There is a Herbarium Fund and Zoology Museum at the NIDFF. On the basis of bi-lateral agreements the country takes some steps to improve capacity through sending its specialists for training to universities of the USA and Israel, mainly on issues related to environment management policy. Partnership cooperation is developing with the specialists of the Russian Federation and countries of Central Asia.

31. * Has your country developed taxonomic support for the implementation of the programmes of work under the Convention as called upon in decision VI/8? (annex to decision VI/8)	
a) No	
b) Yes, for forest biodiversity (please provide details below)	
c) Yes, for marine and coastal biodiversity (please provide details below)	
d) Yes, for dry and sub-humid lands (please provide details below)	
e) Yes, for inland waters biodiversity (please provide details below)	
f) Yes, for mountain biodiversity (please provide details below)	
g) Yes, for protected areas (please provide details below)	x
h) Yes, for agricultural biodiversity (please provide details below)	
i) Yes, for island biodiversity (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the programmes of work under the Convention.

Having deficiency of specialists the country still continues to support taxonomic studies at the protected areas. Activities on inventory of ornithofauna and terriofauna are in progress.

32. * Has your country developed taxonomic support for the implementation of the cross-cutting issues under the Convention as called upon in decision VI/8?	
a) No	x
b) Yes, for access and benefit-sharing (please provide details below)	
c) Yes, for Article 8(j) (please provide details below)	
d) Yes, for the ecosystem approach (please provide details below)	
e) Yes, for impact assessment, monitoring and indicators (please provide details below)	
f) Yes, for invasive alien species (please provide details below)	
g) Yes, for others (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the cross-cutting issues under the Convention.

Due to lack of specialized taxonomic studies it is difficult to respond to the Convention issues referred to the decision VI/8. Weak support of taxonomic studies makes it difficult to achieve the global target by 2010?. In order to encourage scientific importance of the RIDFF, as a taxonomic center of the country, it is necessary to provide current taxonomic capacity with financial support.

Article 8 - *In-situ* conservation
[excluding paragraphs (a) to (e), (h) and (j)]

33. ? On Article 8(i), has your country endeavored to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components?

a) No	
b) No, but potential measures are being identified	
c) Yes, some measures undertaken (please provide details below)	X
d) Yes, comprehensive measures undertaken (please provide details below)	

Further comments on the measures taken to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components.

There is a legislative basis for nature protection in the country and background to establish ecological stability of environment "while protecting – use" which are reflected in the BSAP in the form of:

- reform of legislative basis that limits consumption of resources over limits;

- improvement of current system of information collection on status of biological resources in agriculture, forestry, fishery, gaming;

- on the basis of previous taxonomic studies on different groups of live organisms (determinants, catalogues, collections, regional reports, the herbarium fund) scientifically feasible components of biodiversity monitoring were established;

- techniques of rehabilitation natural liquorice communities were introduced into practice;

- prohibition to catch snakes (cobra and gyurza), which provided growth of their number;

- the MNP regulated volume of animal and bird production;

- to provide increase of rehabilitation works to improve degraded pastures.

The national programme "Strategy for Economic, Political and Cultural Development of Turkmenistan for the period till 2020" and NEAP are guarantors for implementing the BSAP activities. The instrument for regulating economic stability of the region is a transfer to systematic ecological monitoring, which will enable the country to move from economically inefficient prohibition system of nature protection to establishment of efficient interaction between humans and nature.

34. ? On Article 8(k), has your country developed or maintained the necessary legislation and/or other regulatory provisions for the protection of threatened species and populations?	
a) No	
b) No, but legislation is being developed	
c) Yes, legislation or other measures are in place (please provide details below)	X

Further information on the legislation and/or regulations for the protection of threatened species and populations.

A number of legislative acts that regulate endangered species and populations were adopted in Turkmenistan: Law *"On Protection and Sustainable Use of Flora*" (1993); Law *"On Protection and Sustainable Use of Fauna"* (1997); Typical *Charter on state nurseries for rare and endangered flora and fauna species of Turkmenistan* (1995), etc. In pursuance of the Presidential Decree *"Regulation on the Red Data Book of Turkmenistan"* (1997), to conserve rare and endangered taxa the Red Data Book of Turkmenistan was published (1999) in two volumes (plants and animal). At the same time since the BSAP development (2002) no new legislative norms or other regulations on endangered species and populations protection have been issued.

35. ? On Article 8(l), does your country regulate or manage processes and categories of activities identified under Article 7 as having significant adverse effects on biological diversity?	
a) No	
b) No, but relevant processes and categories of activities being identified	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

Further comments on the regulation or management of the processes and categories of activities identified by Article 7 as having significant adverse effects on biodiversity.

The key mechanism to regulate processes and categories of activities that adversely affect biological diversity includes procedures and key components of environment impact assessment (EIA), implemented in accordance with the national and state standards (2001). The EIA includes a block of biodiversity and ecological expertise (*"On State Ecological Expertise"*, 1995)

Supporting mechanisms are:

Regional Action Plan for Central Asia (UNEP, 2001); short-term and long-term activities were developed for the period of 2002-2012. Environment status assessment was conducted on 5 criteria.

National Environmental Action Plan of President of Turkmenistan Saparmurat Turkmenbashi (NEAP)

Biodiversity Strategy and Action Plan (BSAP)

Codes for nature protection: *"On Foreign Investments in Turkmenistan"* (1992); *"On Protection of Atmospheric Air"* (1996); "On Subsoils" (1996); *"On Hydrocarbon Resources"* (1996); Code "On Land" (2004), "On Water", etc.

The Forestry, Sanitary, Land and Water Codes were adopted in Turkmenistan. Systematic on-field observation over atmospheric air and surface waters are conducted by the Ecological Monitoring center at the NIDFF, ecological control and monitoring of the Turkmen basin of the Caspian sea is implemented by "Caspecocontrol". Signing of the Bazel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1992) and its implementation greatly supported improvement of environment status.

Box XLIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation

a) The importance of legal basis to conserve biodiversity is reflected in the BSAP

b) Lists of endangered species were made and their status identified.

c) Environment protection activity of the country, except taxonomic studies, promotes achievement of the global target by 2010.

d) Action plans to conserve leopard, kulan and Bukhara deer, the endangered species, were made up. The Action plan on protected areas (ECONET) was developed. It will enable to significantly increase the area of the protected territories.

e) Social and economic policy of Turkmenistan is based on the principles of achieving harmony of industries and environment and awareness of ecological problem seriousness.

f) System of training specialists and lack of capacity in biodiversity conservation do not meet the requirements of today's objectives.

Programme of Work on Protected Areas (Article 8 (a) to (e))

36. Has your country established suitable time bound and measurable national-level protected areas targets and indicators? (decision VII/28)	
a) No (please specify reasons)	
b) No, but relevant work is under way	
c) Yes, some targets and indicators established (please provide details below)	
d) Yes, comprehensive targets and indicators established (please provide details below)	X

Further comments on targets and indicators for protected areas.

The BSAP set complex targets aimed at conserving species in their habitats and their indicators: improve management quality; improve the system; sustainable use of the most significant SPA ecosystems; conservation of rare endangered species (COA), and encouragement of local population in protected area management. All activities are interconnected with the actions of other strategic components. The concept of development and a scheme of SPA location will be presented in 2006 within the components of the Turkmen part of the regional project ECONET.

37. Has your country taken action to establish or expand protected areas in any large or relatively unfragmented natural area or areas under high threat, including securing threatened species? (decision VII/28)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, limited actions taken (please provide details below)	
d) Yes, significant actions taken (please provide details below)	X

Further comments on actions taken to establish or expand protected areas.

The project *"Perspective Plan of Development SPA Network of Turkmenistan*" has been developed. It is aimed at developing innovated territories with different regimes of protection (constant and temporary), where zoning principle is combined with inclusion into Econet areas of ecological restoration. The process of elaborating scientific background and technical documentation on resource mobilization to establish the first national park in the south-western Kopetdag, and Central Karakum reserve in the desert and sanctuary in Large Balhan, is under development. New protected areas will be determined on completion of ECONET and KOT projects.

The country ratified the Convention on World Cultural and Nature Heritage, but has no areas on its territory under the Convention. In 2001 the WWF Representation in Turkmenistan jointly with the Ministry of Nature Protection developed documents (without annexes) for nominations of Badkhyz, Syunt-Hasardag and Koitendag reserves as "sites to be included into the World Heritage List of UNESCO". Repetek reserve has a status of biospheric reserve.

38. Has your country taken any action to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas? (decision VII/28)	
a) No	
b) Not applicable	
c) No, but relevant actions are being considered	x
d) Yes, limited actions taken (please provide details below)	
e) Yes, significant actions taken (please provide details below)	

Further comments on actions taken to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas.

The Ministry of Nature Protection prepared a background to establish Zapadnouzboy sanctuary, which will include three unique desert lakes with fresh water in western Uzboy, inhabited with relict fauna of invertebrates, fish and water reptiles –Yashan, Karategelek and Topyatan (Documentation on establishing a new Balkan reserve). The proposal on nomination nature monument status to Khojakainar spring (Kainarbaba) and cave Kaptarkhana in Koitendag, inhabited with invertebrates troglobionts, relics of ancient marine fauna as well as inclusion of underground pond into Koitendag reserve ("Kugitang Biodiversity Conservation" project), has been prepared.

39. Has your country identified and implemented practical steps for improving the integration of protected areas into broader land and seascapes, including policy, planning and other measures? (decision VII/28)	
a) No	
b) No, but some programmes are under development	
c) Yes, some steps identified and implemented (please provide details below)	x
d) Yes, many steps identified and implemented (please provide details below)	

Further comments on practical steps for improving integration of protected areas into broader land and seascapes, including policy, planning and other measures.

The project "Schemes of Specially Protected Areas Location", which will be presented in 2006 within the Turkmen part of the regional ECONET project, is under development. Management-Plans for 3 reserves are being elaborated. The regional Strategic Action Plan on the Caspian Sea envisages a number of activities to provide presentations of all key coastal and marine habitats in the regional system of the Caspian Sea protected areas. This will enable to improve efficiency of the Caspian Sea protection areas management, establish new and expand current coastal protected areas, and trasboundary areas, if required, to cover priority vulnerable coastal and marine habitats.

40. Is your country applying environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas? (decision VII/28)	
a) No	
b) No, but relevant EIA guidelines are under development	
c) Yes, EIA guidelines are applied to some projects or plans (please provide details below)	X
d) Yes, EIA guidelines are applied to all relevant projects or plans (please provide details below)	

Further comments on application of environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas.

Performance of EAI and ecological expertise ensure preventive control measures on environment protection aimed at preventing probable adverse affect of specific objects on environment. As a result of ecological expertise assessment the national plan of Turkmenistan on preventing suppression of oil spills (2001) was adopted, the Abadan production association of construction materials was moved to further distance from Ashgabat (Kelyata population point) and gasification of all population points of the country implemented. These actions are aimed at mitigating damage to biodiversity caused by industrial sector of the country. Human-planted plantations are established around cities and large population points to reduce non-controlled ? ? $_2$ emissions into air and mitigate negative impact of oil and gas and energy complexes.

41. Has your country identified legislative and institutional gaps and barriers that impede effective establishment and management of protected areas? (decision VII/28)	
a) No	
b) No, but relevant work is under way	
c) Yes, some gaps and barriers identified (please provide details below))	X
d) Yes, many gaps and barriers identified (please provide details below)	

Further comments on identification of legislative and institutional gaps and barriers that impede effective establishment and management of protected areas.

Ecological legislature of Turkmenistan on protected areas is a well-developed system for legal protection of biological diversity, though it lags in practical improvement. Mechanism of legal basis implementation is not always developed and has shortcomings, which require purposefull activity to improve legislative policy. Currently the legislative basis is not perfect regarding *interaction* of protected areas and adjacent territories; no limitations have been set on specific activities during animal migration and reproduction. Contradictions in some of the articles of the current legislature, lack of some international categories in the national legislation, which exist in the Convention on Biodiversity (econet, ecotourism, national park, green corridor, protected area of sustainable use, etc), deficiency of incentives (compensation system), - all these significantly affect establishment and regulation of the protected areas. This provokes to taking forced measures within the national legislature (pasturing domestic animals of the territories of sanctuaries).

42. Has your country undertaken national protected-area capacity needs assessments and established capacity building programmes? (decision VII/28)	
a) No	
b) No, but assessments are under way	x
c) Yes, a basic assessment undertaken and some programmes established (please provide details below)	
d) Yes, a thorough assessment undertaken and comprehensive programmes established (please provide details below)	

Further comments on protected-area capacity needs assessment and establishment of capacity building programmes.

Within the project *"Turkmenistan: Self-Assessment of Needs to Build the National Capacity"* (2004-2006) a preliminary assessment of capacity needs has been conducted, as a basis for further stage of developing a relevant programme.

43. Is your country implementing country-level sustainable financing plans that support national systems of protected areas? (decision VII/28)	
a) No	
b) No, but relevant plan is under development	X
c) Yes, relevant plan is in place (please provide details below)	
d) Yes, relevant plan is being implemented (please provide details below)	

Further comments on implementation of country-level sustainable financing plans that support national systems of protected areas.

Reserves and sanctuaries are financed from the state budget. For the first time the plan on sustainable financing to support national protected area system was considered at the level of the project document "*Biodiversity Strategy and Action Plan*" (2002) in strategic component ? . "*Financing*".

44. Is your country implementing appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance? (decision VII/28)	
a) No	
b) No, but relevant methods, standards, criteria and indicators are under development	
c) Yes, some national methods, standards, criteria and indicators developed and in use (please provide details below)	x
d) Yes, some national methods, standards, criteria and indicators developed and in use and some international methods, standards, criteria and indicators in use (please provide details below)	

Further comments on methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance.

SPAs make reporting (the annual report "Chronicle of Nature") to the Ministry of Nature Protection, which submits a state statistical report to the Statistical department ("Turkmenmilli-

hasabat"). Known criteria and indicators to assess efficiency of SPA management (stable number of key species of main ecosystems, conservation of rare species habitats, etc.) to evaluate effectiveness of SPA management and their regulation are not fully used.

Box XLV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

a) It is considered that the basis for sustainable development of a region is a developed new of SPAs. Therefore, one of the priority objectives to implement government commitments under the Convention on biodiversity in-situ is development of SPA system as a positive measure to restore degrading ecosystems, as well as rare and extinct species. However in the conditions of global environment other nature protection objectives can become higher priorities.

Nature protection areas and objects in Turkmenistan include the following: *state nature reserves*, state nature sanctuaries; state nature monuments; nature territories and rehabilitation sanatoriums; Botanical and Zoological Gardens and dendrariums, *as well as animals and plants enlisted in the Red Data Books.* Out of 250 revealed objects of nature monuments only 17 are classified by the extent of their conservation, scientific and cognitive values. The total area of all SPAs is 1977 700 ha or 4,02% of the whole country's territory: *reserves* – 784,6 thousand ha (39,7%); *sanctuaries* – 1 155,5 thousand ha (58,4), *protected zone* – 35,5 (1,8), *nature monuments* – 2,14 (0,1%).

b) State reserves and state sanctuaries are leading institutions on the extent of their protection or higher nature protection significance among all current organization forms of protected areas. By the extent of geographical coverage SPA system of Turkmenistan is the most representative, adequately reflecting 9 of 17 main ecosystems. Thus, more than half of total protected areas are represented by *desert* ecosystems (62,04%). The remaining parts of the areas are *montaine* (15,5%) and *water* (10,6%) ecosystems. *Marine* ecosystem– 9,7%, *wetlands* (*???????????*) – 1,35 and *valley-tugai* complexes– 0,9% in total is one ninths (11,9%) part of the total protected area territories.

c) Turkmenistan's contribution in achieving the target by 2010 is presented by 8 state reserves (including one biospheric), 14 sanctuaries, 250 nature monuments, dendrology parks, one Botanical Garden and 3 rehabilitation resorts; 89% of taxa enlisted in the Red Data Book of Turkmenistan (1999) are protected on these territories. One hundred fifty five animal species (43 from IUCN Red Lists) and 78 plant species (14 - IUCN) are under protection. Twenty eight species are presented by one or a few number of populations, each of them are endangered (category I). The National Red Data Book does not contain 26 IUCN species that are protected on the territories of reserves and their sanctuaries.

d) The country ratified the Convention on World Cultural and Nature Heritage, but has no areas on its territory under the Convention. In 2001 the WWF Representation in Turkmenistan jointly with the Ministry of Nature Protection developed documents (without annexes) for nominations of Badkhyz, Syunt-Hasardag and Koitendag reserves as "sites to be included into the World Heritage List of UNESCO". Repetek reserve has a status of biospheric reserve (1979).

e) Scientific background and technical documentation on resource mobilization to establish

the first national park in south-western Kopetdag and Central Karakum and Balhan reserves are under development. New territorial forms of protection will be determined on completion of ECONET and COTT projects. In the international document "*Green Growth*", supported by ESCATO, SRC ISDC considers direct destruction of species as one of the causes of biodiversity loss, which results biodiversity depletion. Therefore, a unified interstate programme on biodiversity conservation in Central Asia is required.

f) Ecological legislature of Turkmenistan on protected areas is a partially developed system of biodiversity legal protection. Mechanism of legal basis implementation is not always developed and has shortcoming. This requires conducting purposeful activity to improve legislative policy to its harmonization.

Article 8(h) - Alien species

45. Has your country identified alien species introduced into its territory and established a system for tracking the introduction of alien species?	
a) No	
b) Yes, some alien species identified but a tracking system not yet established	x
c) Yes, some alien species identified and tracking system in place	
d) Yes, alien species of major concern identified and tracking system in place	

46. ? Has your country assessed the risks posed to ecosystems, habitats or species by the introduction of these alien species?	
a) No	
b) Yes, but only for some alien species of concern (please provide details below)	x
c) Yes, for most alien species (please provide details below)	

Further information on the assessment of the risks posed to ecosystems, habitats or species by the introduction of these alien species.

No special target studies were conducted to assess risk caused by alien species invasion in Turkmenistan, except those years, when acclimatization works were fulfilled on a large scale on a good scientific basis and had no obvious threat to biodiversity. At those time the largest and most successful was introduction of Far-East plant and poisonous fish species to increase fish productivity in the inner water ponds. During acclimatization works a number of non-food species were accidentally brought to ponds of Turkmenistan: *Hemiculter eigenmann*, *Pseudorasbora parwa*, *Rhinogobius similes lindbergi*, *Pseudogobia rivularis*, *Pseudoperilampus ocellatus*. Alien fish, especially when their number is very high become competitors of trade fish in fight for food.

Dangerous exots are threat to biota of the Caspian Sea as well; a number of Mediterranean species invaded the Caspian Sea during construction of the Volga-Don canal. At the end of 50s of the XX century *Mercierella enigmatica*, *Conopeum seurati* and *Berentsia benedeni* got from the underwater parts of vessels and currently they negatively affect due to accumulation at the vessel bottoms, piles and other parts of hydro-technical facilities.

Nowadays the Caspian Sea is affected by active colonization of jellyfish (*Mnemiopsis leidyi)*, which was registered for the first time in 1999. Feeding zooplankton it consumes every day nearly 40% of its own weight and destroys forage basis of the Caspian fish and seals.

Today 23 invasive vertebrates and 27 invertebrates are known in the country (Aliev and others, 1994; Mamedniyazov, Kokanova, 2001; Shakirova, 2000; Saparmamedowa, 2002).

Invasion of new species is actual and potential danger to a great extent to agrobiodiversity. During last 20 years 12 pest species settled in Turkmenistan. The most dangerous of these are cotton white-wing (*Bemesia tabaci*) and citrus moth (*Phithorimaea operculella*). During last decade melon fly (*Carpomyia pardalina*) caused particular trouble; it is the prime pest for melon species of Turkmenistan. Loss of yield of many melon grades in areas of pest habitats reaches 35-50% (Saparmamedowa, 2002). Tortious nature of melon fly is so high that many farmers in the southern parts of the country refuse to grow melons and substitute them with vegetables.

In spite of the obvious threat from alien species unfortunately the system of tracking has not yet been developed in the country.

47. ? Has your country undertaken measures to prevent the introduction of, control or eradicate, those alien species which threaten ecosystems, habitats or species?

a) No	
b) No, but potential measures are under consideration	x
c) Yes, some measures are in place (please provide details below)	x
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to prevent the introduction of, control or eradicate those alien species that threaten ecosystems, habitats or species.

Due to lack of priority related to alien species at the level of government Turkmenistan has not yet developed a full mechanism of execution system to prevent alen species invasion and their control.

However, responsibility of preventing alien species invasion on the territory of Turkmenistan is distributed between several institutions: State Customs Service, Animal and Bird Veterinarian Service Union at the Cattle-Breeding Association of Turkmenistan "Turkmenmallary", State Plant Quarantine Service of Turkmenistan, State Seed-Growing and Grain Testin Service, Plant Protection Service at the Ministry of Nature Protection, Ministry of Nature Protection, State Sanitary and Epidemiological Service at the Ministry of Health and Medical Industry, ecological service "Caspecocontrol", State Fishery Committee , etc.

In accordance with Article 31 of the Law of Turkmenistan "On Fauna Protection and Sustainable Use" (1997) relocation of animals to new habitats, acclimatization of animal species new for the fauna of Turkmenistan, as well as import in and export from the country are allowed for research and economic purposes on the basis of decisions taken by relevant scientific institutions with permissions of the Ministry of Nature Protection and State Fishery Committee.

48. ? In dealing with the issue of invasive species, has your country developed, or involved itself in, mechanisms for international cooperation, including the exchange of best practices? (decision V/8)	
a) No	
b) Yes, bilateral cooperation	
c) Yes, regional and/or subregional cooperation	X
d) Yes, multilateral cooperation	

49. ? Is your country using the ecosystem approach and precautionary and bio-geographical approaches as appropriate in its work on alien invasive species? (decision V/8)	
a) No	
b) Yes (please provide details below)	X

Further comments on the use of the ecosystem approach and precautionary and bio-geographical approaches in work on alien invasive species.

Scientific research studies of flora and fauna are conducted and measures of biodiversity and resource conservation are developed by the NIDFF of the Ministry of Nature Protection of Turkmenistan. Within the framework of the experimental subjects of the Institute the studies of the fauna and flora resources and indigenous and alien biodiversity are conducted using ecosystem approach. Targeted studies and monitoring of the plant and animal pests and diseases, both of the local and adventive species, are conducted, as well as methods of biological control are developed.

For the evidence-based pisciculture the specialists of the vertebrate laboratory of the Institute carry out studies of the status of the inland water ecosystems which include the assessment of the fish and water invertebrates' species diversity, the status of the fish and their food resources.

Comprehensive studies of the status of ecosystems in the protected areas are conducted in the national nature reserves of Turkmenistan. The findings of these studies are published in the "Nature Chronicles".

In 2002 studies of *Mnemiopsis leidyi* (comb jelly fish) were carried out in Turkmenbashi bay in the framework of the "Mnemiopsis – the Real Threat". The *Mnemiopsis leidyi* biomass in the bay was determined and permanent observations of the *Mnemiopsis leidyi* population in Turkmen waters were deemed necessary to keep track of its long-term development dynamics.
The *Mnemiopsis leidyi* biology and ecology studies - involving NIDFF researchers and supported by CEP - were carried out on the Caspecocontrol ground to assess the *Mnemiopsis leidyi* impact on marine ecosytems and possible consequences of its invasion, as well as the questions of introducing another comb jelly fish - *Beroe ovata* in the basin as a *Mnemiopsis* population biocontrol factor were discussed.

50. Has your country identified national needs and priorities for the implementation of the Guiding Principles? (decision VI/23)	
a) No	X

b) No, but needs and priorities are being identified	
c) Yes, national needs and priorities have been identified (please provide below a list of needs and priorities identified)	

Further comments on the identification of national needs and priorities for the implementation of the Guiding Principles.

The country has not yet identified national needs and priorities for the implementation of the Guiding Principles adopted by the VI CBD Parties Meeting; however they are under consideration now, specifically within the CEP Programme frames.

51. Has your country created mechanisms to coordinate national programmes for applying the Guiding Principles? (decision VI/23)

a) No	X
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please provide details below)	

Further comments on the mechanisms created to coordinate national programmes for implementing the Guiding Principles.

The country has not yet created mechanisms to coordinate national programmes for applying the Guiding Principles.

52. Has your country reviewed relevant policies, legislation and institutions in the light of the Guiding Principles, and adjusted or developed policies, legislation and institutions? (decision VI/23)

a) No	
b) No, but review under way	X
c) Yes, review completed and adjustment proposed (please provide details below)	
d) Yes, adjustment and development ongoing	
e) Yes, some adjustments and development completed (please provide details below)	

Further information on the review, adjustment or development of policies, legislation and institutions in light of the Guiding Principles.

Review of the national policies, legislation and institutions, including that on alien species, was carried out as a component of the current GEF/UNDP Project on Turkmenistan National Capacity Self Assessment in order to make comprehensive evaluation of the national capacity to implement three global environmental conventions: on biological diversity, on climate change and to combat desertification; to identify the challenges and the ways to address them. The Project Expert Team made recommendations for training of specialists in the field of identification and monitoring of alien species.

Within the CEP framework, a project (November 2005 – May 2006) to review, assess and analyze the current national legislation concerning alien species and work out recommendations for establishment of a regional body intended to assess and make decisions in regard of such invasions was completed. National reviews would be brought together into a common regional document by an international consultant in full coordination with UNEP.

The Information System of the Caspian Sea (CaspSIS) created with the CEP support is regu-

larly updated to include data on human resources (scientists/experts), institutions, databases, programmes/projects and reference materials on the Caspian Sea.

53. Is your country enhancing cooperation between various sectors in order to improve prevention, early detection, eradication and/or control of invasive alien species? (decision VI/23)	
a) No	
b) No, but potential coordination mechanisms are under consideration	X
c) Yes, mechanisms are in place (please provide details below)	
Further comments on cooperation between various sectors.	

54. Is your country collaborating with trading partners and neighboring countries to address threats of invasive alien species to biodiversity in ecosystems that cross international boundaries? (decision VI/23)	
a) No	
b) Yes, relevant collaborative programmes are under development	
c) Yes, relevant programmes are in place (please specify below the measures taken for this purpose)	X
Further comments on collaboration with trading partners and neighboring countries.	

Long-term cooperation with the Caspian countries under CEP to address the threats of invasive alient species (including *Mnemiopsis*);

Turkmenistan is a member of the Intergovermental Council for Cooperation in Veterinary and International Epizootic Bureau of the World Animal Health Organization;

Intergovernmental Agreement on Cooperation for Quarantine of Plants among CIS and Baltic Countries has been signed;

Cooperation with the European Organization for Plants Quarantine and Protection;

International Sanitary Code for Land Animals;

Customs Code of Turkmenistan (1993);

Memorandum of Agreement between ICARDA and Ministry of Agriculture of Turkmenistan (2003) under which the joint programme "Conservation, Study and Use of Genetic Resources of Agricultural Plants" is implemented;

Agreement between the Ministry of Agriculture and ICARDA on cooperation in agricultural researches is signed;

Agreement between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation of Russia (VIR) on cooperation in exchange and transfer of agricultural germplasm is signed.

55. Is your country developing capacity to use risk assessment to address threats of invasive alien species to biodiversity and incorporate such methodologies in environmental impact assessment

(EIA) and strategic environmental assessment (SEA)? (decision VI/23)	
a) No	X
b) No, but programmes for this purpose are under development	
c) Yes, some activities for developing capacity in this field are being undertaken (please provide details below)	
d) Yes, comprehensive activities are being undertaken (please provide details below)	

Further information on capacity development to address threats of invasive alien species.

Curently the country gives insufficient attention to developing capacity to use risk assessment to address threats of invasive alient species; however this function is partially endowed with the nature protection authorities.

Mandatory environmental component is the process of Environmental Impact Assessment of proposed economic or other activities in Turkmenistan (EIA). EIA is a process of identification, analysis and registration of impacts and direct and indirect ecological and related consequences of such activities performed before a decision is made about the possibility (or impossibility) of the performance based on the state ecological expertise conclusion.

In Turkmenistan the legal grounds for EIA are the following legislative documents regulating the state environmental impact assessment:

Law of Turkmenistan "On Nature Protection";

Law of Turkmenistan "On State Ecological Expertise";

Presidential Decree No.2864 dated 13.11.1996 "On Approval of Provisions for the Order of the State Ecological Expertise and Status of an Expert of the State Ecological Expertise".

The State Ecological Expertise of the Ministry of Nature Protection of Turkmenistan makes the expert appraisals of projects, programmes, design estimates, industrial and agricultural objects irrespective of the form of their ownership, as well as performs examinations of the environmental impact assessments of economic and other activites for completeness and correctness, the degree of ecological safety of the decisions made and adequacy of the proposed measures for the efficient resource conservation and nature protection.

In accordance with the "Standard Provision for Flora and Fauna Protection Department of the Ministry of Nature Protection of Turkmenisan" of 15.11.2000, the governmental control over acclimatization of plants and animals imported and exported from Turkmenistan is carried out by the Department on the grounds of the "Order of Issuance of Permits for Export and Import of Speciemen of Flora and Fauna in Turkmenistan" approved by the Ministry of Nature Protection on 20.07.2005.

In November 2005 CEP regional training workshop was held in Turkmenistan. The workshop discussed the economic appraisal of natural resources of the Caspian region with the financial and methodological support of the Asian Bank for Reconstruction and Development and World Bank. The objective of the workshop was to assist the littoral countries to strengthen their national capacities in regard to the environmental impact assessment, to make adequate appraisal of their ecological resources and to prepare economic rationale to identify priorities of the sustainable development of the Caspian coastal countries. The issues of addressing the threats of invasive alient species were discussed during Session 1 of the workshop.

56. Has your country developed financial measures and other policies and tools to promote activities to reduce the threats of invasive species? (decision VI/23)	
a) No	X
b) No, but relevant measures and policies are under development	
c) Yes, some measures, policies and tools are in place (please provide details below)	
d) Yes, comprehensive measures and tools are in place (please provide details below)	

Further comments on the development of financial measures and other policies and tools for the promotion of activities to reduce the threats of invasive species.

Financing of the activities aimed at reducing the threats of invasive species is made by the government without taking into proper account the amounts of the actually needed funds. Therefore, at this stage any effective measures to prevent or control the threats of invasive species solely at the expense of the state budget are difficult to fulfill. Attraction of investments and technical assistance of international donors need to be increased.

Box XLVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Constraints, encountered in implementation of the strategy.

The problem of the threat of invasive species has not been included in the list of the country ecological priorities in the environmental programme documents.

Article 8(j) - Traditional knowledge and related provisions

GURTS

57. Has your country created and developed capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities, and other relevant stakeholders to effectively participate in decision-making processes related to genetic use restriction technologies?	
a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities and other relevant stakeholders to effectively participate in

decision-making processes related to GURTs.
In Turkmenistan there are no legal regulations concerning genetic technologies yet; therefore no relevant programmes have been developed. However, in 2005 the meetings of the working groups of experts at the national (Ashgabat) and regional (Tashkent) levels took place and a project proposal for the access to genetic resourses and sharing of benefits is under development.

Status and Trends

58. Has your country supported indigenous and local communities in undertaking field studies to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities? (decision VII/16)	
a) No	X
b) No, but support to relevant studies is being considered	
c) Yes (please provide information on the studies undertaken)	

Further information on the studies undertaken to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities, and priority actions identified.
To the present moment no profound studies concerning the knowledge, innovations and practices of the indigenous and local communities have been conducted in Turkmenistan, although BSAP (2002) provides for a range of activities in this respect (Strategic Component C: Sustainable use): ? .4. Development of economic incentives for involving local stakeholders in conservation of biodiversity; ? .4.1. Develop alternative methods of sustainable water use, pasture and agricultural land use, oriented towards biodiversity conservation; ? .4.2. Encourage farmers to grow local medicinal palnts by providing logistical support.

Akwé:Kon Guidelines

59. Has your country initiated a legal and institutional review of matters related to cultural, environmental and social impact assessment, with a view to incorporating the Akwé:Kon Guidelines into national legislation, policies, and procedures?	
a) No	
b) No, but review is under way	X
c) Yes, a review undertaken (please provide details on the review)	

Further information on the review.

Turkmenistan has not yet initiated a legal and institutional review of matters related to cultural and environmental impact assessments with a view of incorporating the Akwe:Kon Guidelines into national legislation. At present international joint projects on inventorying monuments of culture and nature and creating adequate databases are under implementation. Apart from that, NEAP (2002) proposes some legal and institutional activities.

60. Has your country used the Akwé:Kon Guidelines in any project proposed to take place on sacred sites and/or land and waters traditionally occupied by indigenous and local communities? (decision VII/16)	
a) No	X
b) No, but a review of the Akwé: Kon guidelines is under way	
c) Yes, to some extent (please provide details below)	
d) Yes, to a significant extent (please provide details below)	

Further information on the projects where the Akwé:Kon Guidelines are applied.

To date the Akwe-Kon Guidelines have not been used in Turkmenistan. However, the inviolability of the local monuments of nature and sacred sites is maintained by the indigenous and local communities.

Financial means received from pilgrimage and tourism to historical monuments and sacred sited are used for restoration, improvement and planting of trees in these places.

Capacity Building and Participation of Indigenous and Local Communities

61. Has your country undertaken any measures to enhance and strengthen the capacity of indigenous and local communities to be effectively involved in decision-making related to the use of their traditional knowledge, innovations and practices relevant to the conservation and sustainable use of biodiversity? (decision V/16)	
a) No	
b) No, but some programmes being developed	
c) Yes, some measures taken (please provide details below)	X
d) Yes, comprehensive measures taken (please provide details below)	

Further information on the measures to enhance and strengthen the capacity of indigenous and local communities.

During the development of the BSAP (2002) the following activities have been designed among others under the Strategic Component A: In situ conservation:

Action ? .8. Increase the role of the local population in management of protected areas.

? .8.1. Develop mechanisms that incorporate stakeholder opinions more effectively into the decision-making process related to protected areas.

Under the GTZ Project "Participation of Local Communities in the Natural Resource Management in Turkmenistan" the mechanisms of introduction of methods to combat desertification and their adoption by the local communities were developed.

A non-governmental organization – National Society of Hawkers of Turkmenistan - has been functioning since 1998. Its objective is to use the indigenous traditions of falconry and promote conservation and sustainable use of biodiversity.

62. Has your country developed appropriate mechanisms, guidelines, legislation or other initiatives to foster and promote the effective participation of indigenous and local communities in decision making, policy planning and development and implementation of the conservation and sustainable use of biodiversity at international, regional, subregional, national and local levels? (decision V/16)

a) No	X
b) No, but relevant mechanisms, guidelines and legislation are under development	
c) Yes, some mechanisms, guidelines and legislation are in place (please provide details below)	

Further information on the mechanisms, guidelines and legislation developed.

63. Has your country developed mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work? (decision V/16, annex)

a) No	X
b) No, but relevant mechanisms are being developed	
c) Yes, mechanisms are in place (please provide details below)	

Further comments on the mechanisms for promoting the full and effective participation of women of indigenous and local communities in all elements of the programme of work.

Under the GTZ Project "Participation of Local Communities in the Natural Resource Management in Turkmenistan" the mechanisms for promoting the full and effective participation of women in indigenous and local communities have been developed in the field of self-help capacity development.

Support to implementation

64. Has your country established national, subregional and/or regional indigenous and local community biodiversity advisory committees?	
a) No	X
b) No, but relevant work is under way	
c) Yes	

65. Has your country assisted indigenous and local community organizations to hold regional meetings to discuss the outcomes of the decisions of the Conference of the Parties and to prepare for meetings under the Convention?	
a) No	X
b) Yes (please provide details about the outcome of meetings)	
Further information on the outcome of regional meetings.	

66. Has your country supported, financially and otherwise, indigenous and local communities in formulating their own community development and biodiversity conservation plans that will enable such communities to adopt a culturally appropriate strategic, integrated and phased approach to their development needs in line with community goals and objectives?	
a) No	X
b) Yes, to some extent (please provide details below)	
c) Yes, to a significant extent (please provide details below)	
Further information on the support provided.	

Box XLVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

In Turkmenistan there are no legal regulations concerning genetic technologies yet; therefore no relevant programmes have been developed. However, in 2005 the meetings of the working groups of experts at the national (Ashgabat) and regional (Tashkent) levels took place and a project proposal for the access to genetic resourses and sharing of benefits is under development.

Up to the present moment no profound studies concerning knowledge, innovations and practices

of the indigenous and local communities have been conducted in Turkmenistan. Under the GTZ Project "Participation of Local Communities in the Natural Resource Management in Turkmenistan" the mechanisms of introducing methods to combat desertification and their adoption by the local communities were developed. In the country the mechanisms for promoting the full and effective participation of women in indigenous and local communities have been developed in the field of self-help capacity development.

Turkmenistan has not yet initiated a legal and institutional review of matters related to cultural and environmental impact assessments with a view of incorporating the Akwe:Kon Guidelines into national legislation. The process of collecting preliminary data for inventorying and assessing the status of monuments of culture and nature has been initiated, which is outlined in the NEAP (2002) as legal and institutional activities.

To date the Akwe-Kon Guidelines have not been used in Turkmenistan. However, the inviolability of the local monuments of nature and sacred sites (isolated trees, groves and ravines) is maintained by the indigenous and local communities.

Financial means received from pilgrimage and tourism to the historical monuments and sacred sited are used for restoration, improvement and planting of trees in these places.

Article 9 - *Ex-situ* conservation

67. On Article 9(a) and (b), has your country adopted measures for the *ex-situ* conservation of components of biological diversity native to your country and originating outside your country?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures adopted for the *ex-situ* conservation of components of biodiversity native to your country and originating outside your country.

The country implements Strategic Component B: *Ex-situ conservation*. A scope of activities has been developed for conservation of wild relatives of cultivated plants and traditional crop varieties; creation of plant seed banks and germplasm banks; establishment of new breeding centers for rare and threatened plant species; establishment of open-air rehabilitation centers for threatened animals; conservation of urban biodiversity.

68. On Article 9(c), has your country adopted measures for the reintroduction of threatened species into their natural habitats under appropriate conditions?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for the reintroduction of threatened species into their natural habitats under appropriate conditions.

The programme of reintroduction of some species of animals (such as pheasant, francolin, kulan

and sand gazelle) and plants (pistachio vera) were actively implemented in 1980-ies. Today certain measures are undertaken to reintroduce the sand gazelle (2003-2004) in the South-Western Kopetdag. The feasibility study to reintroduce the Asiatic cheetah in the North-Western Turkmenistan (Ayrakly Height), foothills of the Eastern Kopetdag (Meana and Chaacha) and Badkhyz was made under the *Cheetah* Project, 2001-2002, WWF. The methods of cultivating Turkmen mandrake are developed now with the prospect of its reintroduction. Since 2003 two landsites of the pistachio coulisse planting cover the area of nine hectares in the foothills of Central Kopetdag near Ashgabat.

69.? On Article 9(d), has your country taken measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species.

The country has adopted certain standard acts which regulate and manage the collection of biological resources from natural habitats for ex-situ conservation purposes so as not to threaten ecosystems and in-situ populations of species. These are such Presidentail Decrees as *"On Hunting and Hunting Regulations"* (1998), *"On Rational Use of Poisonous Snakes, Poisonous Arthropoda and Derived Products"* (1992); *"On Measures for Protection of Wild-Growing Liquorice, Poisonous Snakes and Derived Products"* (1992); *"On Meausres for Conservation and Use of Karlyuk Caves and Other Natural Monuments of Fauna of the Kugitang Mountains in Charshanga Etrap, Lebap Velayat"* (1992) for conservation of the Koytendag blind loach and other relic species of the invertebrate fauna.

"Standard Provision for State Nurseries of Rare and Threatened Floral and Faunal Species of Turkmenistan" (1995); *"Provision on the Protection of Fish Stocks and Regulation of Fisheries in Territorial and Inland Waters of Turkmenistan"* (1998) and *"On Creation of the Park Zone in the Kopetdag Foothills"* serve as supporting mechanisms. In 2000 the standards for the environmental impact assessment (EIA) were approved which are expected to be the basis for the adoption of the ISO 14000 international standards to harmonize environmental activities. Rigorous and efficient observation of the legal regulations mentioned above is the guarantee of the conservation of biodiversity in Turkmenistan.

Box XLVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

A live genepool collection ex-situ is maintained at the Makhtumkuly Research and Production Experimental Center of Genetic Resources (1937 samples). Collections of the experimental nurseries of the Institute of Agriculture (758), Institute of Grain Crops (307) and Botanical Garden (4716), 7718 samples in total – are one of the measures to regulate and manage the collection of biological resources from natural habitats. The samples of the local (Turkmen) origin make up 8.5 per cent of the total number. More than 100 ancient varieties, forms and types of popular selection of 19 species of cultivated plants grown and known in Turkmenistan from ancient times still remain the the national collections.

The national heritage of Turkmenistan is the unique genepool bank of wild fruit trees of the Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources. Here, in the dry subtropical zone there is a collection of wild fruit trees (*pomegranates, vines, apples, pears, apricost, almonds and many others*) and grape vines relatives of the cultivated species kept at the Central Asian Genetic Center. The cost of the collection is more than 40 million US dollars. The crop testings of olives, Zizyphus, persimmons, date-palms, and citrus plants are made at Etrek Experimental Center of Subtropical Plants. The Ashgabat Botanical Garden collection includes 4716 species, forms and varieties, among them 157 species and 67 forms of gymnospermous exotics (pine, juniper, and cypress) and 450 species of the local flora. The work has been initiated to establish a genepool bank of grain-crops and leguminous plants under the National "Ak Bugday" Museum of White Wheat.

To date the local variety of the white wheat has been preserved – "*ak bugday*" which had been cultivated five thousand years ago. Our local varieties of melons, grapes, wild species of numerous leguminous plants and forest fruit species such as figs, pomegranates, apples, pears and more than 40 other species make excellent source material for further selection. Therefore, our wild-growing genetic resources are rightly considered a rarity phytocene pool of Turkmenistan. 225 species of wild and cultivated plants used in traditional and modern scientific medicine have been given pharmacological and chemical description.

Moreover, the territory of the state forestry is used to form artificial afforestation for the desert areas concurrently with the expansion of the mountainous foresting operations. Sanitary and hygienic functions in the country are fulfilled by the artificial forest/park plantations. Forests of the Turkmen juniper cover approximately 858 hectares of uplands and those of the pistachio – more than 35 thousand hectares. Field-protecting forest plantations make up more than 15 thousand hectares of land. Pasture-protecting forest plantations cover 680 thousand hectares of sands. Since 1998 unique woodland has been created in the forest park zone near Ashgabat. To date, the forest/park area covers more than 24 thousand hectares planted with nearly 30 million saplings and seedlings of almost 100 species of conifers, deciduous trees and shrubs.

Among the wild relatives of domestic animals survived species of the Turkmen wild goats *Capra falconeri* and *Capra aegagrus* are the progenitors of domestic goats, while species and subspecies of the *Ovis* genus are the progenitors of domestic sheep. Only in our country there is a sole surviving representative of the *Equus genus* – Turkmen kulan *(E. hemionus onager*). Since an-

cient times the following breeds of animals have been bred locally: *Carnivora* (Turkmen greyhound *Tazy*, and Turkmen sheep dog *Alabay*), *Suidae* (cattle, S*araji* and C*aracul* sheep), *Perissodactyla* (*Akhalteke* and *Yomud* horses) and *Tylopoda* (Turkmen dromedary camel). Breeding nurseries for rare faunal species such as sand gazelle, francolin and pheasant are established in the nature reserves. Since 1990 the sand gazelles have been bred on the Ogurchisky island in the Caspian Sea.

Each year the Ministry of Nature Protection opens a season of amateur hunting in the assigned hunting grounds. Hunting is regulated by terms; and some kinds of hunting require special licensing. The President of Turkmenistan and Ashgabat City authorities have made a decision to design and construct new Zoological Gardens which would be a national museum of animate nature occupying nearly 40 hectares of land. The project will be put in operation in early 2007. The Zoo collection will include about 300 specimens of animals, the majority of which inhabit the vast expanses of Turkmenistan.

The country's herbarium pool is the storage of primordial scientific documents of the floral biodiversity which contains more than 250 thousand herbarium sheets (including types and isotypes of 36 species) of higher plants, as well as mycological, lichen and bryophyte herbaria collected countrywide in Turkmenistan and neighbouring Iran.

Article 10 - Sustainable use of components of biological diversity

70.? On Article 10(a), has your country integrated consideration of the conservation and sustainable use of biological resources into national decision-making?

a) No	
b) No, but steps are being taken	
c) Yes, in some relevant sectors (please provide details below)	X
d) Yes, in most relevant sectors (please provide details below)	

Further information on integrating consideration of conservation and sustainable use of biological resources into national decision-making.

One of the BSAP objectives, *"To develop a plan for biological resource management that aims to reduce overexploitation and ensure its implementation by 2006,"* is targeted at conservation and sustainable use of biological resources (Strategy C) of the hunting, fishery and forestry sectors of economy. The NEAP documents and environmental legislation serve as supporting mechanisms: *"On Nature Protection"* (1991), *"On Protection and Rational Use of Flora"* (1993), *"Standard Provision for State Nurseries of Rare and Threatened Floral and Faunal Species of Turkmenistan"* (1995); *"On Protection and Rational Use of Fauna"* (1997), *"On Hunting and Hunting Regulations"* (1998); Law of Turkmenistan *"On Land"* (2004) and *"Water Code»* (2004). The *"Strategy of Sustainable Development of Turkmenistan"* and Global Ecological Review 4" are under development now. (ICSD, 2004)

"Assessment Report on the Development of the Central Asian Regional Decision-Making Support System for Sustainable Development" (UNEP, 2002) was prepared and *"Indicators for Sustainable Development of Central Asian Countries"* (UNEP, 2004).

71.? On Article 10(b), has your country adopted measures relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures adopted relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity.

Implementation of the regional *"Strategic Action Plan"* (2004 "5+5"; GEF) will allow the member-countries (Russia, Kazakhstan, Azerbaijan, Iran and Turkmenistan) to address some national challenges of sustainable management of fishery.

The country has laid the foundation for transition to the sustainable use of biological resources. Thus, in the nearest future a complex for artificial breeding of sturgeon (*Acipenser*) species and caviar production will be built in the coastal zone of the Caspian Sea. This project is aimed at conservation of valuable fish species in the Caspian Sea through their sustainable reproduction. The prospects for the development of the tourist business in the coastal area will be studied under the project *"Conservation and Sustainable Use of Biodiversity of Global Importance in Hazar Nature Reserve at the Caspian Sea Coast"* (UNDP, GEF, 2005-2010). 17 recreational zones have been allotted in the coastal area, one of them being in the territory of Hazar reserve, five others in the adjacent places. This circumstance will allow the region to gain direct economic benefits from the development of ecological, cognitive, hunting and other kinds of tourism.

72.? On Article 10(c), has your country put in place measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements.

In 2002 the Law *"On Protection of Health of Citizens"* was adopted which serves as the grounds for the Ministry of Health to grant licenses to manufacture officially approved medical drugs.

73. ? On Article 10(d), has your country put in place measures that help local populations develop and implement remedial action in degraded areas where biological diversity has been reduced?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that help local populations develop and implement remedial action in degraded areas where biodiversity has been reduced.

Crisis situation in the Caspian and Aral coastal regions has led to the destruction of the ecosystems and accelerated reduction of biological resources. The Law *"On Legal Regime of the State of Emergency*» (1990) and Decrees *"On Ecological Status of the Aral Seaside Areas* (1990) and "*? n Measures for Radical Improvement of Ecological Situation in the Caspian Sea Basin"* (1991) were adopted to render support to the local population. Furthermore, in 1993 the heads of the Central Asian states made an Agreement on joint actions to address the problems of the Aral Sea and Aral seaside areas, which was the first document to introduce the concept of sustainable development. At the local level *"The National Programme for Improvement of Social and Ecological Situation in the Aral Seaside Area"* (2001) was adopted and *Progress Report on the Aral Sea Basin Programme* (2002) was prepared. *"Programme for Specific Actions to Improve Ecological and Socio-Economic Situation in the Aral Sea Basin for the Period of 2003-2010"* was developed. The NEAP planned activities schedule is aimed at improvement of the extremal sanitary and epidemiological situation in the Aral seaside area through the increase of fresh water stocks and improvement of the ground water quality. The new Law of Turkmenistan *"On Land"* (2004) and *"Water Code"* (2004) have been published.

The Biodiversity Protocol is under development under the CEP programme. Implementation of the regional *"Strategic Action Plan"* (2004 "5+5"; GEF) will allow the member-countries (Russia, Kazakhstan, Azerbaijan, Iran and Turkmenistan) to solve individual national problems of sustainable management of fishery in the Caspian Sea. *"Sustainable Development of Caspian Coastal Communities"* small-grant programme (2004-2006, TASIC-EU) under the CEP second phase is aimed at the reduction and prevention of the excessive use of biological resources in the region with the concurrent mitigation of the social and economic living conditions of the local communities.

74. ? Has your country identified indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity? (decision V/24)

a) No	X
b) No, but assessment of potential indicators and incentive measures is under way	
c) Yes, indicators and incentive measures identified (please describe below)	

Further comments on the identification of indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity.

The country has not identified indicators and incentive measures for the sectors of national economy relevant to the conservation and sustainable use of biodiversity.

75. ? Has your country implemented sustainable use practices, programmes and policies for the sustainable use of biological diversity, especially in pursuit of poverty alleviation? (decision V/24)	
a) No	X
b) No, but potential practices, programmes and policies are under review	
c) Yes, some policies and programmes are in place (please provide details below)	
d) Yes, comprehensive policies and programmes are in place (please provide details below)	
Further information on sustainable use programmes and policies.	

76. ? Has your country developed or explored mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity? (decision V/24)	
a) No	X
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please describe below)	
Further comments on the development of mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity.	
The country needs to develop a legislative basis to introduce an economic incentive system (such as, tax remissions/concessions) to involve the private sector in initiatives on the sustainable use of biodiversity.	

77. Has your country initiated a process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	
b) No, but the principles and guidelines are under review	X
c) Yes, a process is being planned	
d) Yes, a process has been initiated (please provide detailed information)	
Further information on the process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.	
The country needs to create informational environment to apply Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity. The first step would be to design a relevant model project which would allow starting the capacity building.	

78. Has your country taken any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, some technologies developed and transferred and limited financial resources provided (please provide details below)	
d) Yes, many technologies developed and transferred and significant financial resources provided (please provide details below)	

Further comments on the development and transfer of technologies and provision of financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

In accordance with the Convention Resolution (VII/12), as the NEAP and BSAP were published in 2002 before the adoption of the Addis Ababa Principles in Montreal in 2003, Turkmenistan as a Party to the Convention needs to include these principles in the national legislation and other legal regulations, as well as sectoral plans and programs aimed at sustainable use of biodiversity.

Biodiversity and Tourism

79. ? Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?	
a) No	
b) No, but mechanisms are under development	X
c) Yes, mechanisms are in place (please specify below)	
d) Yes, existing mechanisms are under review	

Further comments on the establishment of mechanisms to assess, monitor and measure the impact of tourism on biodiversity.

In Turkmenistan the concept of "ecological tourism" has not yet become a prevailing element. Therefore, mechanisms to assess, monitor and measure the impact of tourism on biodiversity may be considered only indirectly through the existing environmental legislation and activities of the State Committee for Tourism and Sports. The country has adopted the Law *"On State Specially Protected Areas"* (1992) that prohibits the activities related to tourism in their territories.

80. ? Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts? (decision V/25)	
a) No	
b) No, but programmes are under development	X
c) Yes, programmes are in place (please describe below)	

Further comments on educational and training programmes provided to tourism operators.

At present there are one-year traning courses for tourism operators in Turkmenistan; it deems necessary on the licensing basis to pay closer attention so as to increase their awareness of the impacts of tourism on biodiversity, as it is reflected in the BSAP.

81. Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management? (decision VII/14)	
a) No	
b) No, but relevant programmes are being considered	X
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments in the capacity-building and financial resources provided to indigenous and local communities to support their participation in tourism policy-making, development planning, product development and management.

In 1993 Turkmenistan became a member of the World Tourism Organization and has been purposefully developing its tourist sector which possesses a great potential for the dynamic growth. The country has worked out more than 50 tourist routes; however, there is still no state policy of the ecological tourism development to involve indigenous and local communities. There is also a demand to conduct a full inventory of the sites suitable for development of ecological tourism.

First steps in this area have been made in the framework of the ongoing UNDP Project "Improved System of Protected Areas Management in Turkmenistan (2003-2005), which gives attention to ecotourism in capacity building.

82. Has your country integrated the Guidelines on Biodiversity and Tourism Development in the development or review of national strategies and plans for tourism development, national biodiversity strategies and actions plans, and other related sectoral strategies? (decision VII/14)	
a) No, but the guidelines are under review	
b) No, but a plan is under consideration to integrate some principles of the guidelines into relevant strategies	
c) Yes, a few principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	X
d) Yes, many principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	

Further information on the sectors where the principles of the Guidelines on Biodiversity and Tourism Development are integrated.

Although the Guidelines on Biodiversity and Tourism have not been fully integrated in the BSAP National Review, some of their provisions have been considered under the Strategic Component C *"Sustainable Use"*. The integrated scope of practical actions of the Component "C.5. Development of sustainable ecotourism" provides for a range of activities. First of all, it is to work out a management plan for the development of scientific and ecological tourism, to involve the communities to participate in identification of recreational and aesthetic resources, to prepare a guidebook to develop photographic safaris in the country, etc. (7 activities in total). The government programme of tourism development adopted in 1995 and recognized by the

WToO General Assembly provides for wide attraction of foreign investments ensuring them the most-favoured-nation treatment.

The first experience of ecological tourism as a method of sustainable resource management will be approved under the project *"Conservation and Sustainable Use of Biodiversity of Global Importance in Hazar Nature Reserve at the Caspian Sea Coast"* (UNDP, GEF, 2005-2010).

Box XLIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

In Turkmenistan the concept of "ecological tourism" has not yet become an element of the state policy, although the tourist sector has begun to develop approximately since 90-ies of the ?? century. In 1993 Turkmenistan became a member of the World Tourism Organization. The country has the richest possibilities and prospects to advance in the world tourist market. Today there are 17 working travel agencies, 10 of them are private businesses. More than 60 thousand tourists are served annually, more than 12 thousand of them being foreign visitors. About 150 agreements on cooperation with 80 foreign travel companies have been concluded.

Nature reserves and scientific research institutes of the country have retained the educational environment for development of scientific and ecological tourism and capacity for ecological education (libraries and museums) but they do not have any legal grounds to perform these activities. It could be possible to organize an ecological education and information center on the ecotourism development at Repetek reserve. (BSAP, ?.5.5.). In implementation of the sustainable SPA resource management under the national and regional ECONET Projects and the first Sumbar national park, the defining place would be taken by the ecological tourism and legal standard acts regulating the issues of ecotourism development in the protected areas. The supportive mechanism here will be *"The Strategy of Economic, Political and Cultural Development of Turkmenistan for the Period till 2020."*

International and domestic, or in-country, tourism is of primary importance for the country, with less frequent exotic tourism and ecological education. As of today more than 50 tourist routes have been worked out to visit places of historical interest and other sites, however ecological tourism has just begun to be talked about. The first environmental tourism training center was established in Turkmenistan with the support of the TEMPUS Project (2004-2005). The work of the Center is aimed at training of ecological tourism specialists on the basis of European HEIs and working out of programmes for sustainable development of tourism in the perspectives of natural and cultural environment conservation.

c) Usually the concept of "ecological tourism" is associated with sightseeing tours to the specially protected areas. At present legal and economic conditions are not advantageous for investing in ecotourism although it could have comprised a significant share (up to 30%) in the tourism server. The country has not developed mechanisms of ecological tourism development which raises doubts about its viability in the protected areas. Moreover, ecotourism has not been integrated in the regional social and economic development programmes and has not been considered in complex with the development of agriculture, forestry and oil-and-gas industry, health

resort and hotel business, and other sectors. The country needs to work out Strategy and Action Plan for the ecotourism development.

f) Among the principal constraints in the ecotourism development the following are the most notable:

- lack of interaction in the ecotourism development at the national and international levels;
- incomplete legislative basis in the area of ecotourism;
- tourism operators are not sufficiently aware on the impact of tourism on biodiversity.

Article 11 - Incentive measures

83. ? Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?

a) No	
b) No, but relevant programmes are under development	X
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on the programmes to identify and adopt incentives for the conservation and sustainable use of biodiversity.

Basic provisions that act as incentives for the conservation and sustainable use of components of biological diversity are incorporated into national environmental legislation. Unfortunately, these basic provisions are not supported by subordinate legislation and incorporated in the budgetary and tax legislations. In accordance with the Law *"On the Interior of the Earth"* (1992) and Presidential Decrees *"On Tax on Use of Depths"* (1992), *"On Establishment of Payment for Water Consumption"* (1994) and *"Water Code"* (2004), rational use of the biological resources justifies establishment of payment for the right to use them. Ecological expertise which is an EIA equivalent serves as a preventative control measure to mitigate adverse environmental impacts on biological diversity.

84. ? Has your country developed the mechanisms or approaches to ensure adequate incorporation of both market and non-market values of biological diversity into relevant plans, policies and programmes and other relevant areas? (decisions III/18 and IV/10)

a) No	X
b) No, but relevant mechanisms are under development	
c) Yes, mechanisms are in place (please provide details below)	
d) Yes, review of impact of mechanisms available (please provide details below)	

Further comments on the mechanism or approaches to incorporate market and non-market values of biodiversity into relevant plans, policies and programmes.

85. ? Has your country developed training and capacity-building programmes to implement incentive measures and promote private-sector initiatives? (decision III/18)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place	
d) Yes, many programmes are in place	

86. Does your country take into consideration the proposals for the design and implementation of incentive measures as contained in Annex I to decision VI/15 when designing and implementing incentive measures for the conservation and sustainable use of biodiversity? (decision VI/15)	
a) No	
b) Yes (please provide details below)	X

Further information on the proposals considered when designing and implementing the incentive measures for the conservation and sustainable use of biodiversity.

A new approach to create conditions for co-existance of Bukhara deer and leopards and rural population in the Sumbar valley (South-Western Kopetdag) was developed under the project *"In-situ Conservation of Bukhara Deer and Leopard Populations"* (WWF, 2002-2006). The system of economic incentives in line with the requirements of the Law *"On Nature Protection"* (1999) was applied: penalty for extermination of the protected species could be counter-balanced with incentives for promoting their conservation. Local population was compensated in kind (with sheep) for each domestic animal killed by leopards.

The first 200 sheep were bought as an insurance flock with financial support from WWF. The main components of the sustainable financial resource management were wide participation of the local population (workshops, leaflets, creation of the Flock Management Board and Stock-Breeders Community) and insurance of the flock by the local cattle-stock owners. During 5-year work period the flock of sheep has grown to 600 heads; the necessary infrastructure has been put in place and is duly maintained; the responsibility for the flock rests with Syunt-Khasardag nature reserve and Council of the Elders. All these measures allowed radical changing of the situation: the population of leopards grew from 70-75 heads in 1999 to 85-90 heads in 2004 and is stable now.

87. Has your country made any progress in removing or mitigating policies or practices that generate perverse incentives for the conservation and sustainable use of biological diversity? (decision VII/18)	
a) No	
b) No, but identification of such policies and practices is under way	X
c) Yes, relevant policies and practices identified but not entirely removed or mitigated (please provide details below)	
d) Yes, relevant policies and practices identified and removed or mitigated (please provide details below)	

Further information on perverse incentives identified and/or removed or mitigated.

At the departmental level of control the Ministry of Nature Protection and State Committee for Fishery developed the scale of rates for damages to the components of biodiversity which was

approved by the Ministry of Finance and Economy in 2000.

Box L.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
The current system of the government management of biological resources does not fully promote conservation and sustainable use of components of biological diversity. A new economic mechanism is needed to encourage and attract additional financial resources. The first positive experience of the use of economic incentives deserves attention of the concerned governmental structures.

Article 12 - Research and training

88. On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?	
a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please provide details below)	X

Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.

The current scientific and technical education programmes and HEI curricula have general ecological bias not specifically focused on definition, conservation and sustainable use of biodiversity and its components.

The country's main educational centers:

Makhtumkuly Turkmen State University; specialities: "Biology", "Ecology, environment protection and rational use of natural resources";

Seidi Turkmen State Teacher's Institute; speciality: "Biology";

Turkmen State Medical Institute; speciality: "Pharmacology";

Turkmen Polytechnical Institute; speciality: "Environment protection and rational use of natural resources";

Niyazov Agricultural University; specialities: "Agronomy," "Veterinary medicine."

Agrobusiness Center is created on the basis of Niyazov Agricultural University. The Center trains medium-level specialists for agricultural enterpeises. Basic Ecology is taught as a part of the Biology and Geography cycle and Natural History course in secondary schools, Lyceums and colleges. Environmental education of pre-school children has also made some progress.

While realizing the GTZ CCD/NIDFF Joint Project *"Combat of Land Degradation in Three*

Provinces of Turkmenistan" (2002–2004), some training in natural resource management was provided to the local population, such as establishment and development of nurseries for desert shrubs and forest cultures; optimization of pastures; development of fruit and vegetable gardening in the desert environment; forest regeneration on the degraded mountainsides.

Ecoeducation is conducted within the frames of Transeuropean cooperation under TEMPUS TASIC Programmes on manpower training that include the following projects, some of which have been completed while others are still under implementation:

Turkmen Agricultural University – *"Development of International Magistracy for Water Resources and Environmental Management" (2003-2006);*

Turkmen Institute for Tourism and Sports – *"Tourism Training Center for Conservation of Natural and Cultural Environment of Turkmenistan"* (2004-2007);

Turkmen Polytechnical Institute – *"Development of Teaching Programmes on Nature Protection and Rational Use of Water Resources"* (2005-2007).

89. ? On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?

a) No	
b) Yes (please provide details below)	X

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

The country promotes and encourages applied research which contributes to the conservation and sustainable use of biological diversity. The principal national priorities of BSAP include scientific research (G.); institutional strengthening and capacity building through training (D.); ecological education and public awareness (?.). The Project *"Turkmenistan National Capacity Self Assessment"* (2004-2006) will assess the national capacity to ensure implementation of the commitments effluent of the three Global Rio-Conventions. Examination of the long-term needs for institutional capacity to implement the Convention on Biological Diversity will be carried out under the *"Conservation of Biodiversity in Turkmenistan: Phase II"* Project (2005-2006). The preparation process has been started on the *"Capacity Building for ABS (Access and Benefit-Sharing) in Central Asia and Mongolia"* Project.

Funding of scientific research on biodiversity, procurement of equipment and its exploitation is performed through state budget allotments. Research centers and research departments of nature reserves do not have experience in biodiversity conservation management and attraction of foreign funds for these purposes.

Review of the thematic research subjects of the National Institute of Desert, Flora and Fauna (NIDFF), Nature Reserves, Ashgabat Botanical Garden, Scientific Research Institute of Agriculture, Scientific Research Institute of Grain Crops, National Institute of Raw Drug Materials has shown that 17 themes dealt with biodiversity in a broad sense and only 6 themes were focused on the local biodiversity subjects.

Makhtumkuly Youth Organization holds annual competitions between young researchers and specialists on scientific studies in humanitarian, technical and natural sciences, including biodiversity. The competition is financed through the Fund of the President of Turkmenistan.

90.? On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?	
a) No	
b) Yes (please provide details below)	X

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

The country promotes and encourages application research which contributes to the conservation and sustainable use of biological diversity. The principal national priorities of BSAP include scientific research (G.); institutional strengthening and capacity building through training (D.); ecological education and public awareness (?.). The Project *"Turkmenistan National Capacity Self Assessment"* (2004-2006) will assess the national capacity to ensure implementation of the commitments effluent of the three Global Rio-Conventions. Examination of the long-term needs for institutional capacity to implement the Convention on Biological Diversity will be carried out under the *"Conservation of Biodiversity in Turkmenistan: Phase II"* Project (2005-2006). The preparation process has been started on the *"Capacity Building for ABS (Access and Benefit-Sharing) in Central Asia and Mongolia"* Project.

Funding of scientific research on biodiversity, procurement of equipment and its exploitation is performed through state budget allotments. Research centers and research departments of nature reserves do not have experience in biodiversity conservation management and attraction of foreign investments for these purposes.

Review of the thematic research subjects of the NIDFF, Nature Reserves, Ashgabat Botanical Garden, Scientific Research Institute of Agriculture, Scientific Research Institute of Grain Crops, National Institute of Raw Drug Materials has shown that 17 themes dealt with biodiversity in a broad sense and only 6 themes were focused on the local biodiversity subjects.

Makhtumkuly Youth Organization holds annual competitions between young researchers and specialists on scientific studies in humanitarian, technical and natural sciences, including biodiversity. The competition is financed through the President's Fund of Turkmenistan.

Box LI.

Please elaborate below on the implementation of this article specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) The current scientific and technical education programmes and HEI curricula have general ecological bias not specifically focused on definition, conservation and sustainable use of biodiversity and its components. The scientific research basis of the country in general allows effective conducting of targeted research programmes. Availability of rich primary scientific materials including collections of animals and plants allows achieving progress in any bioecological projects. The themes of scientific research institutions are prevailed with the studies of biodiversity in a wide sense with only few themes focused on the local biodiversity subjects.

b) In pursuance of the President's Decree "On the Red Data Book of Turkmenistan," the

second edition of the Red Data Book was prepared in 1999 which included information about application of the findings of the long-term biodiversity studies.

c) Fundamental studies of biodiversity performed by several generations of researches have created rich information data base of the country (identification reference books, catalogues, regional summaries and monographic publications) and established a scientific and methodological basis for biodiversity monitoring of individual groups of organisms and types of ecosystems. Outcomes of the recent studies are applied in practical activities.

d) The country promotes and encourages applied studies which contribute to the conservation and sustainable use of biological diversity. The principal national priorities of BSAP include scientific research (G.); institutional strengthening and capacity building through training (D.); ecological education and public awareness (?.). Within the framework of several projects an assessment of the national capacity to ensure implementation of the commitments effluent of the three Global Rio-Conventions is conducted and examination of the long-term needs for institutional capacity to implement the Convention on Biological Diversity, including biosafety issues, is carried out. Funding of scientific research on biodiversity, procurement of equipment and its exploitation is made through state budget allotments.

e) Under the "Nature Chronicles" Programme of scientific research departments of the nature reserves the principles for organization of stationary observation network and selection of parameters for biodiversity components monitoring have been unificated and material collection methods have been developed.

f) The main constraints encountered in implementation of the strategy:

lack of the state policy to support fundamental researches and train specialists in biodiversity;
lack of investments from international donors to support infrastructure of scientific studies of biodiversity.

Article 13 - Public education and awareness

91. Is your country implementing a communication, education and public awareness strategy and promoting public participation in support of the Convention? (Goal 4.1 of the Strategic Plan)	
a) No	
b) No, but a CEPA strategy is under development	X
c) Yes, a CEPA strategy developed and public participation promoted to a limited extent (please provide details below)	
d) Yes, a CEPA strategy developed and public participation promoted to a significant extent (please provide details below)	

Further comments on the implementation of a CEPA strategy and the promotion of public participation in support of the Convention.

Turkmenistan ratified Aarhaus Convention on public access to environmental information. Education and public awareness are carried out at the government level involving non-governmental organizations as well. In compliance with the Laws of Turkmenistan "On State Ecological Expertise" and "Assessment of Environmental Impact of Intended Economic and Other Activities in Turkmenistan," the public participates in discussions on issues concerning introduction and construction of industrial enterprises and other economical projects through public hearings, participation in workshops and meetings. Representatives of NGOs, CSOs and

community-based organizations are involved in ecological monitoring, distribution of environmental information and ecological education.

One of the main objectives of the BSAP (2002) is to increase the level of public awareness on the importance of biodiversity to 50 per cent and increase level of ecological education by 10 per cent by the end of 2007. Strategy ? . "Information Accessibility and Exchange" outlines the actions to implement this objective.

92. Is your country undertaking any activities to facilitate the implementation of the programme of work on Communication, Education and Public Awareness as contained in the annex to decision VI/19? (decision VI/19)

a) No	
b) No, but some programmes are under development	
c) Yes, some activities are being undertaken (please provide details below)	X
d) Yes, many activities are being undertaken (please provide details below)	

Further comments on the activities to facilitate the implementation of the programme of work on CEPA.

In the "Strategy of Social and Economic Development of Turkmenistan till 2010" ecological security is identified as one of the priorities of the country development. In accordance with this Strategy, Turkmenistan implements activities aimed at public education and awareness of biodiversity and rational use of biological resources. The following activities are carried out for these purposes: trainings, workshops, public hearings, mass media broadcasts, dissemination of educational booklets, promotional materials, recommendations on sustainable use of bioresources. A school book on Ecology has been prepared for publishing in the national language with the support of the Ministry of Nature Protection.

93. Is your country strongly and effectively promoting biodiversity-related issues through the press, the various media and public relations and communications networks at national level? (decision VI/19)

a) No	
b) No, but some programmes are under development	
c) Yes, to a limited extent (please provide details below)	
d) Yes, to a significant extent (please provide details below)	X

Further comments on the promotion of biodiversity-related issues through the press, the various media and public relations and communications networks at national level.

Public awareness of biodiversity and importance of its conservation is carried out at the government level and with the support of international projects and organizations. To disseminate local and international news in the field of ecology, of the workshops held, and emergency situations, the Ministry of Nature Protection publishes information bulletins, organizes TV and radio talk shows, and promotes scientific and popular scientific publications on ecology in the periodical press. The joint efforts of the Ministry of Nature Protection and governmental mass media include the following:

- National television broadcasts: weekly programme "Nature of Turkmenistan" ("Türkmen tebigaty") on Altyn Asyr Channel; daily programme about flora and fauna of Turkmenistan

on Channel 4 (broadcasted in 7 languages).
- Weekly radio programme "Beauty of Native Land" ("Ülkämizin göz?lligi") on Watan Channel.
- Articles and addresses in governmental periodicals: newspapers: "Neutral Turkmenistan", "Türkmenistan", "Watan", "Galkynys"; magazines: "Revival", international scientific magazine "Problems of Desert Development" and scientific magazine"Türkmenistanda ylym we tehnika".

The quarterly "Problems of Desert Development" magazine has been published since January 1967. The magazine covers scientific problems and publishes publications on biodiversity, rational use of natural resources, modern methods of plant cultivation, pasture management, etc.

The issues of biodiversity in Turkmenistan are also presented in scientific papers and popular works which are available in libraries. Internet resources on biodiversity of Turkmenistan are placed on the websites of international organizations (Grid-Arendal, WWF, UNDP Turkmenistan office, CEP Webpage on biodiversity, etc.), however it is obviously insufficient.

94. Does your country promote the communication, education and public awareness of biodiversity at the local level? (decision VI/19)	
a) No	
b) Yes (please provide details below)	X

Further information on the efforts to promote the communication, education and public awareness of biodiversity at the local level.

At the local level the efforts to promote the communication, education and public awareness of conservation and rational use of biodiversity are made through environmental projects and small grants. GTZ CCD/NIDFF Project "Combat Land Degradation in Three Provinces of Turkmenistan" encourages involvement of the local population in the natural resources management. Efforts are made to establish and develop nurseries for desert shrubs, to promote gardening (horticulture) and vegetable growing in the local conditions, to establish forest nurseries, to encourage private hothouse gardening. Educational booklets have been published as a part of the Project. Small grants are realized under CEP Programme aimed at sustainable use of bioresources which involve local population and promote communication, education and public awareness of biodiversity. In 2004-2005 a series of workshops on pest control of the melon fly were conducted for local population; Crane Day festivities are held in the places of crane winterings.

95. Is your country supporting national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, some activities supported (please provide details below)	X
d) Yes, many activities supported (please provide details below)	

Further comments on the support of national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness.

In Turkmenistan provisions of the Global Initiative on Education and Public Awareness have not been fully analyzed. Nevertheless, the couthry has ratified the Aarhus Convention on the public access to ecological information, and in this connection the Global Initiative priorities

are supported by the state. The questions of ecological education and public awareness are reflected in the national programmes and policies. A package of activities is set forth in the BSAP Strategic Components E "Ecological Education and Public Awareness" and H "Information Accessibility and Exchange."

96. Has your country developed adequate capacity to deliver initiatives on communication, education and public awareness?	
a) No	
b) No, but some programmes are under development	
c) Yes, some programmes are being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on the development of adequate capacity to deliver initiatives on communication, education and public awareness.

The Ministry of Nature Protection carries out a targeted programme to deliver initiatives on communication, education and public awareness which involves all kinds of mass media and is supported by non-governmental organizations as well. Within the frames of international and national projects and small grants programmes workshops are conducted, information bulletins are released, ecological activities are held in kindergartens, schools and higher educational institutions, competiotions and scientific conferences are organized. Furthermore, the following institutions serve as sources for dissemination of information on biological resources:

- National Museum of Turkmenistan
- Ashgabat Botanical Garden
- NIDFF Zoo Museum
- Museums in Nature Reserves
- National Herbarium of the country – collections of NIDFF, HEIs and Nature Reserves.
- Mycological, lichen and bryophyte herbaria; collections of various animal species of Turkmenistan.

97. Does your country promote cooperation and exchange programmes for biodiversity education and awareness at the national, regional and international levels? (decisions IV /10 and VI/19)	
a) No	
b) Yes (please provide details below)	X

Further comments on the promotion of cooperation and exchange programmes for biodiversity education and awareness, at the national, regional and international levels.

Promotion of cooperation and exchange programmes for biodiversity education and awareness is implemented through national, regional and international projects. Experience sharing and dissemination of educational programmes on biodiversity are done through conferences, trainings and workshops, and publishing and dissemination of educational guidebooks, brochures and booklets.

98. Is your country undertaking some CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention?	
a) No (please specify reasons below)	
b) Yes, some activities undertaken for some issues and thematic areas (please provide details below)	X
c) Yes, many activities undertaken for most issues and thematic areas (please provide details below)	
d) Yes, comprehensive activities undertaken for all issues and thematic areas (please provide details below)	

Further comments on the CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention.

Some thematic issues related to biodiversity of forests, mountains, waters and agriculture were implemented in environmental projects and programmes. The realized CEP Project "Sustainable Development of Caspian Coastal Communities – Azerbaijan, Kazakhstan, Russian Federation and Turkmenistan" (2004 - 2006, TASIC-EU) was aimed at reduction and prevention of excessive use of natural resources of the Caspian Sea. The small-grants programme of this project allowed increasing public participation in the management and rational use of bioresources. In the course of the project impelementaion the CEPA activities were widely realized.

The GTZ/CCD/NIDFF Project "Participation of Local Population in Natural Resources Management in Turkmenistan" makes provisions for improvement of living conditions of local population through development of the mutual assistance capacities and adoption of desertification combating methods. The methods to combat desertification widely use biological resources; local population gets involved in establishing and developing of greenhouse gardening, forest nurseries and resistant plants growing.

99. ? Does your country support initiatives by major groups, key actors and stakeholders that integrate biological diversity conservation matters in their practice and education programmes as well as into their relevant sectoral and cross-sectoral plans, programmes and policies? (decision IV/10 and Goal 4.4 of the Strategic Plan)	
a) No	X
b) Yes (please provide details below)	

Further comments on the initiatives by major groups, key actors and stakeholders that integrate biodiversity conservation in their practice and education programmes as well as their relevant sectoral and cross-sectoral plans, programmes and policies.

100. Is your country communicating the various elements of the 2010 biodiversity target and establishing appropriate linkages to the Decade on Education for Sustainable Development in the implementation of your national CEPA programmes and activities? (decision VII/24)	
a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes developed and activities undertaken for this purpose (please provide details below)	
d) Yes, comprehensive programmes developed and many activities undertaken for this purpose (please provide details below)	
Further comments on the communication of the various elements of the 2010 biodiversity target and the establishment of linkages to the Decade on Education for Sustainable Development.	

Box LII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Turkmenistan ratified the Aarhus Convention on public access to ecological information and fulfils all its requirements. The Ministry of Nature Protection conducts regular communication, education and public awareness work.

National policies (NEAP and BSAP) provide for ecological education of students and increase of wide public awareness (2002 –2010) and identify actions in the communication, education and public awareness area.

Public awareness of biodiversity and its conservation is carried out at the governmental level and with support from international projects and organizations. In order to disseminate ecological information, bulletins are released, television and radio broadcasts organized, scientific and popular articles on biodiversity and its sustainable use published in periodical press.

The biological resources disseminating sources are the National Museum of Turkmenistan, Ashgabat Botanical Garden, Zoo Museum, Museums of Nature Reserves, Herbarium stocks and various collections of flora and fauna.

Internet resources on biodiversity of Turkmenistan are limited. They are placed at several websites of some international organizations (Grid-Arendal, WWF, UNDP Turkmenistan office, CEP webpage on biodiversity, etc.). At present a special site on biodiversity of Turkmenistan is not available.

The issues of communication, education and public awareness of biodiversity are dealth with through implementation of national, regional and international environmental projects. Public awareness of biodiversity and its rational use is carried out through conferences, training courses and workshops, publishing and dissemination of educational materials, manuals, brochures and

booklets.

NGOs actively participate in dissemination of ecological information thus promoting ecological education of local population. They take part in implementation of international and national projects, publish information bulletins, conduct ecological activities in kindergartens, schools and HEIs, and participate in competitions, conferences, etc. Local population is involved in implementation of international projects on sustainable use of biological resources.

Constraints:

- shortage of accessible information and knowledge in the national language,
- lack of capacity to support local communities.

Article 14 - Impact assessment and minimizing adverse impacts

101. On Article 14.1(a), has your country developed legislation requiring an environmental impact assessment of proposed projects likely to have adverse effects on biological diversity?	
a) No	
b) No, legislation is still in early stages of development	
c) No, but legislation is in advanced stages of development	
d) Yes, legislation is in place (please provide details below)	X
e) Yes, review of implementation available (please provide details below)	

Further information on the legislation requiring EIA of proposed projects likely to have adverse effects on biodiversity.

A package of environmental laws regulates the factor of unfavorable consequences of adverse effects on the environment.

"National Plan to Prevent and Liquidate Oil Spills" developed in 2001 and Presidential Decree *"On Approval of Regulations for Protection of Shoaling Waters of Turkmenistan from Water-Craft Polluting"* adopted in 2005 are subsequent to international agreements on environment protection.

Adopted legislative norms and by-laws are inseparably connected with the existing Guidelines on Environmental Impact Assessment (EIA, 2001) which is an essential working document for planning of certain categories of projects and types of activity including ecological effects on biological diversity. At the project development stage an analysis of its ecological impact on animals and plants is made and recommendations are developed to materially reduce adverse effects, such as purification of ballast waters of the Caspian Sea, sewage disposal plants, Saimonov Bay cleanout, etc. The EIA Guidelines for Central Asia Region were developed to apply provisions of the Convention on Environmental Impact Assessment in a Transboundary Context.

102. ? On Article 14.1(b), has your country developed mechanisms to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biological diversity?	
a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	X

Further comments on the mechanisms developed to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biodiversity.

On the basis of existing national EIA standards (2001), the Ministry of Nature Protection has worked out Rules for environmental impact assessment of proposed projects and Methods of calculation of polluting damage to soil, water and air caused through violation of environmental laws. The Methods are currently under consideration by the Ministry of Economy and Finance.

103. ? On Article 14.1(c), is your country implementing bilateral, regional and/or multilateral agreements on activities likely to significantly affect biological diversity outside your country's jurisdiction?	
a) No	
b) No, but assessment of options is in progress	
c) Yes, some completed, others in progress (please provide details below)	
d) Yes (please provide details below)	X

Further information on the bilateral, regional and/or multilateral agreements on activities likely to significantly affect biodiversity outside your country's jurisdiction.

Turkmenistan ratified the UN Framework Convention on Climate Change (1995) and Kyoto Protocol (1997) and has started preparation of the National Anthropogenic Greenhouse Gas Emission Survey (GHG) which is not regulated by Montreal Protocol (1993). Turkmenistan participates in official cooperation through signing documents at the level of the Framework Convention on Marine Environment Protection of the Caspian Sea (2004) and Agreement of the Heads of States on joint actions to address the problems of the Aral Sea and Aral seaside area (1993) in transboundary context. Also signed are the prococols of the Convention on Ozone Layer Protection (Vienna, 1993) and Convention on Control of Transboundary Transportaion of Hazardous Wastes and Their Elimination (Basle, 1989).

The Presidentail Decree *"On Measures to Further Improve the State of the Environment and Creation of Favourable Climatic Conditions"* (2000) is targeted at creation of park zones in the foothills of Kopetdag. Scientific information center of the International Committee of Sustainable Development under the International Aral Saving Fund has begun "Integrated Assessment of the Environment Status" (2005-2006) at national and sub-regional levels. It is published on disk for sub-region *"Global Ecological Review"* (GEO, 2002).

Within the frames of the GEF Project "First National Turkmenistan Report on the UN Framework Convention on Climate Change" (first phase: 1997-2000; second phase: 2002-2003) vulnerability of the most important sectors of economy and ecosystems was explored. The studies to estimate the vulnerability and adaptation to the climate change, including some components of agrobiodiversity, allowed developing of a package of recommendations within

the frames of the National Action Plan on implementation of preliminary activities to reduce the GHG emissions. The NEAP realization process is under way.

104. ? On Article 14.1(d), has your country put mechanisms in place to prevent or minimize danger or damage originating in your territory to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction?	
a) No	
b) No, mechanisms are still in early stages of development	X
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place based on current scientific knowledge	

105. ? On Article 14.1(e), has your country established national mechanisms for emergency response to activities or events which present a grave and imminent danger to biological diversity?	
a) No	
b) No, mechanisms are still in early stages of development	X
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	

Further information on national mechanisms for emergency response to the activities or events which present a grave and imminent danger to biodiversity.

The issue of Turkmenistan's signing of the European Economic Committee Convention on transboundary effects of industrial accidents is at the discussion stage. However, the country has the State Committee for Emergecy Situations and guilty persons have legal liabilities in accordance with the legislation of Turkmenistan. The Law *"On Prevention and Liquidation of Emergency Situations"* (1998) provides for scientific studies on ecological security problems. The problem of environmental emergencies is covered as a separate item in the Law *"On State Ecological Expertise"*. The Crisis Center of the Ministry of Defence deals with emergency situations and there is a Program for prevention and liquidation of emergencies, such as forest fires.

106. Is your country applying the Guidelines for Incorporating Biodiversity-related Issues into Environment-Impact-Assessment Legislation or Processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14? (decision VI/7)	
a) No	X
b) No, but application of the guidelines under consideration	
c) Yes, some aspects being applied (please specify below)	
d) Yes, major aspects being applied (please specify below)	

Further comments on application of the guidelines.

In the course of practical EIA adoption biodiversity has been considered at the stage of planning to regulate subsequent assessments of environmental consequences. Examination of the status of environment including components of biodiversity is completed before the beginning of the intended construction works.

107. On Article 14 (2), has your country put in place national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity? (decision VI/11)	
a) No	
b) Yes (please specify the measures)	X

Further comments on national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity.

The country has developed legal protection for environmental components. The basic environmental Law *"On Nature Protection"* (1991) stipulates legal, economical and social basis for environment protection. The Criminal Code and the Code of Administrative Violations of Turkmenistan contain articles dealing with violations of property rights on forests, animals and plants, regulations on water resources protection and land tenure, fire safety requirements, etc. Special Presidential Decree *"On Measures to Improve Natural Environment"* (1999) declares the beginning of a high-scale countrywide ecological action which has been first started with planting coniferous and deciduous trees around Ashgabat. The Ministry of Nature Protection has developed Methods of calculating damage caused by pollution of soil, water and air inflicted throuhg violations of environmental legislation (2005).

108. Has your country put in place any measures to prevent damage to biological diversity?	
a) No	
b) No, but some measures are being developed	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures in place to prevent damage to biological diversity.

The country has not developed special measures to prevent damage to biological diversity, however this problem is indirectly considered within the national EIA framework. Ecological expertise is performed without fail at the projecting phase. No bank would open financing of any project before receipt of the positive ecological expertise conclusion. Methods of calculating damage caused by pollution of soil, water and air have been developed (2005). In accordance with the current legislation building of enterprises in the protected areas is not permitted, except with the MNP approval in exceptional cases.

109. Is your country cooperating with other Parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress? (decision VI/11)	
a) No	X
b) No, but cooperation is under consideration	
c) No, but cooperative programmes are under development	
d) Yes, some cooperative activities being undertaken (please provide details below)	

e) Yes, comprehensive cooperative activities being undertaken (please provide details below)	

Further comments on cooperation with other Parties to strengthen capacities for the prevention of damage to biodiversity.

Issues of cooperation with other Parties to the Convention to strengthen capacities at the national level for the prevention of damage to biodiversity have not yet been considered in Turkmenistan.

Box LIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) At the political and legal level Turkmenistan quite successfully uses measures to assess the impact and narrow down the adverse consequences to biodiversity. Legal protection of environmental components serves as the main instrument of rational nature management. Further steps of harmonization of national legislation will allow the country, as a jural state, to more actively participate in ecological reform adopting implementing mechanisms of international environmental laws.

b) Realization of precautionary measures allows Turkmenistan adequate implementation of the objectives of biodiversity conservation in accordance with Article 14 of the Strategic Plan of the Convention.

d/e) All legal environmental activity of Turkmenistan is aimed at the expansion of forest areas and prevention of forest fires. Projects that are potentially hazardous to biodiversity undergo mandatory EIA procedure, especially projects related to oil production, transportaion and processing in the Caspian Sea. The major part of the preventative measures is realized through international agreements; partially it is done at the national level.

f) The country has not yet developed Action Plan for Integrated Biodiversity Conservation Planning to promote implementation of activities for realization of regional and international cooperation in information sharing and exchange of resources and technologies.

Article 15 - Access to genetic resources

110. ? Has your country endeavored to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms, in accordance with paragraphs 2, 4 and 5 of Article 15?

a) No	
b) Yes (please provide details below)	X

Further information on the efforts taken by your country to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms.

In the context of the Agreement of Cooperation between ICARDA and the Ministry of Agriculture signed in 2003, the joint programme "Conservation, Study and Use of Genetic Resources of Agricultural Plants" is implemented.

International centers of CIMMYT, ICARDA, Institute of Plant Cultivation (Russia) have established scientific programmes for testing sent samples on the 50% interest basis. Scientific Reasearch Institute of Grain Crops and Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources study samples to select promising samples and keep them for further selection works. Turkmenistan cooperates with USA, Israel, Uzbekistan and other countries in exchanging of genetic resources of plants.

Agreement of Cooperation (1995) is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation (VIR) of Russia on exchange and transfer of germplam of agricultural plants.

Agreement of Cooperation (2003) is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation (VIR) of Ukraine on exchange and transfer of germplam of fruit plants.

111. ? Has your country taken measures to ensure that any scientific research based on genetic resources provided by other Parties is developed and carried out with the full participation of such Parties, in accordance with Article 15(6)?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to ensure that any scientific research based on genetic resources provided by other Contracting Parties is developed and carried out with the full participation of such Contracting Parties.

The BSAP (2002) provides for measures to ensure that other countries participate in developing and carrying out scientific researches based on genetic resources, and develops and adopts provision on the terms and conditions allowing access of representatives of foreign countries to biodiversity information.

112. ? Has your country taken measures to ensure the fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources with any Contracting Party providing such resources, in accordance with Article 15(7)?

a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive legislation is in place (please provide details below)	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place (please provide details below)	
f) Yes, comprehensive policy and administrative measures are in place (please provide details below)	

Further information on the type of measures taken.
The country has not yet developed specific measures to ensure fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources, however the BSAP (2002) provides a review of potential measures, namely: Action L.1. Harmonise national legislation with international biodiversity conventions. L.1.5 – Develop a Law on "Fair and Equitable Sharing of Benefits in Regard to Biological and Genetic Resources". Strategy I. Cooperation (technical, scientific, international, transfer of technologies). Action I.2. Assistance to international co-operation and exchange of information, resources and technologies. Action I.2.7. Develop international programmes for scientific exchange for experts in biodiversity conservation. However, Turkmenistan has not yet begun implementation of the planned activities.

113. ? In developing national measures to address access to genetic resources and benefit-sharing, has your country taken into account the multilateral system of access and benefit-sharing set out in the International Treaty on Plant Genetic Resources for Food and Agriculture?	
a) No	X
b) Yes (please provide details below)	

Further information on national measures taken which consider the multilateral system of access and benefit-sharing as set out in the International Treaty on Plant Genetic Resources for Food and Agriculture.
Turkmenistan has not yet developed special laws or standard regulations related to the multilateral access and benefit-sharing in regard to biological and genetic resources. The questions of developing legislation on biosafety, access to genetic resources and benefit-sharing are reflected in the BSAP materials. Strategy L. Legislation L.1.5. Develop a Law on "Fair and Equitable Sharing of Benefits in Regard to Biological and Genetic Resources". L.1.6. Develop mechanism for enforcing procedural and institutional rules concerning fair and equitable sharing ob benefits of biodiversity.

114. Is your country using the Bonn Guidelines when developing and drafting legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contracts and other arrangements under mutually agreed terms for access and benefit-sharing? (decision VII/19A)	
a) No	
b) No, but steps being taken to do so (please provide details below)	X
c) Yes (please provide details below)	

Please provide details and specify successes and constraints in the implementation of the Bonn Guidelines.

The possibilities of using the Bonn Guidelines in Turkmenistan are under active scrutiny. These issues were discussed in the context of the National Conference "Access to genetic resources, benefit-sharing and protection of traditional knowledge" (Ashgabat, Turkmenistan, October 11, 2005) and International Workshop on incorporeal right (intellectual property right) and protection of traditional knowledge (Tashkent, Uzbekistan, October 18-20, 2005). These meetings discussed questions of possible adoption of the Bonn Guidelines and capacity building of the countries in the region in regard to the access and benefit-sharing (ABS) and traditional knowledge (TK). The regional governments were recommended the following:

- Provide support to the initiatives in the field of ABS and TK capacity building;
- Establish national working groups to develop and implement strategy, policy and action plan on ABS and TK involving all stakeholders;
- Pay closer attention to the importance of identifying financial sources to fund ASB and TK activities;
- Develop national policies, strategies, action plans and legislatively adopt them;
- Involve stakeholders in implementation of the Action Plan on ASB and TK.

115. Has your country adopted national policies or measures, including legislation, which address the role of intellectual property rights in access and benefit-sharing arrangements (i.e. the issue of disclosure of origin/source/legal provenance of genetic resources in applications for intellectual property rights where the subject matter of the application concerns, or makes use of, genetic resources in its development)?

a) No	
b) No, but potential policies or measures have been identified (please specify below)	
c) No, but relevant policies or measures are under development (please specify below)	
d) Yes, some policies or measures are in place (please specify below)	X
e) Yes, comprehensive policies or measures adopted (please specify below)	

Further information on policies or measures that address the role of IPR in access and benefit-sharing arrangements.

In 1995 Turkmenistan signed Declaration of continued membership in three international agreements. They are: the Convention establishing World Organization of Intellectual Property (WOIP), Agreement on Patent Cooperation. The same year the President of Turkmenistan signed the document of Turkmenistan's joining the Madrid Protocol of International Registration of Laws.

At present the following laws are under development: "On Titles of Points of Goods' Origin", "On Brand Name", "On Unfair Competition," "On Protection of Selection (Breeding) Achievements".

116. Has your country been involved in capacity-building activities related to access and benefit-sharing?	
a) Yes (please provide details below)	X
b) No	

Please provide further information on capacity-building activities (your involvement as donor or recipient, key actors involved, target audience, time period, goals and objectives of the capacity-building activities, main capacity-building areas covered, nature of activities). Please also specify whether these activities took into account the Action Plan on capacity-building for access and benefit-sharing adopted at COP VII and available in annex to decision VII/19F.

The issue of capacity building directly related to the access to genetic resources is on on today's agenda. Nevertheless, the MNP Project "Turkmenistan: National Capacity Self Assessment" (NCB) supported by UNDP/GEF (2004-2006) aims at realistic assessment of Turkmenistan's capacity to fulfill its commitments to three global ecological conventions including the one on biological diversity. Project proposal "Regionally Harmonized National Consultative Process to Implement Bonn Guidelines on ABS in Central Asia and Mongolia" is under development. In accordance with the national needs there is a plan to develop a package of activities to evaluate institutional capacity for implementation of the proposed ABS measures. Upon the project's completion a national strategy on education and public awareness on ABS and national measures for access and benefit-sharing will be worked out. As a result, institutional and human capacity will be built at the regional, national and local levels.

Box LIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Turkmenistan is in the process of preparation of informational environment for special laws and standard regulations on the access to and fair and equitable sharing of the benefits arising from the commercial and other use of biological and genetic resources. The possibilities of using the Bonn Guidelines in Turkmenistan are under active scrutiny. These issues were discussed in the context of the National Conference "Access to genetic resources, benefit-sharing and protection of traditional knowledge" (Ashgabat, Turkmenistan, October 11, 2005) and International Workshop on incorporeal right (intellectual property right) and protection of traditional knowledge (Tashkent, Uzbekistan, October 18-20, 2005). These meetings discussed questions of possible adoption of the Bonn Guidelines and capacity building of the countries in the region in regard to the access and benefit-sharing (ABS) and traditional knowledge (TK). The regional governments were recommended the following:

- Provide support to the initiatives in the field of ABS and TK capacity building;
- Establish national working groups to develop and implement strategy, policy and action plan on ABS and TK involving all stakeholders;
- Pay closer attention to the importance of identifying financial sources to fund ASB and TK activities;
- Develop national policies, strategies, action plans and legislatively adopt them;
- Involve stakeholders in implementation of the Action Plan on ASB and TK.

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The issue of capacity building directly related to the access to genetic resources is on on today's agenda. Nevertheless, the MNP Project "Turkmenistan National Capacity Self Assessment" (NCB) supported by UNDP/GEF (2004-2006) aims at realistic assessment of Turkmenistan's capacity to fulfill its commitments to three global ecological conventions including the one on biological diversity. Project proposal "Regionally Harmonized National Consultative Process to Implement Bonn Guidelines on ABS in Central Asia and Mongolia" is under development. In accordance with the national needs there is a plan to develop a package of activities to evaluate institutional capacity for implementation of the proposed ABS measures. Upon the project's completion a national strategy on communication and public awareness on ABS and national measures for access and benefit-sharing will be worked out. As a result, institutional and human capacity will be built at the regional, national and local levels.

Article 16 - Access to and transfer of technology

117. ? On Article 16(1), has your country taken measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment?	
a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity or make use of genetic resources and do not cause significant damage to the environment.

The country does not conduct any works on biotechnology; however BSAP provides for a series of measures relevant to the conservation and sustainable use of biological diversity.

Strategy I. Cooperation (technical, scientific, international, transfer of technologies):

I.1. - Assistance to regional cooperation and information exchange (I.1.1. –I.1.6.).

I.2. – Assistance to international cooperation and exchange of information, resources and technologies (I.2.1. –I.2.7.).

118. ? On Article 16(3), has your country taken measures so that Parties which provide genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms?	
a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place	
d) Yes, comprehensive legislation is in place	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative arrangements are in place	
g) Not applicable	

119. ? On Article 16(4), has your country taken measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of Government institutions and the private sector of developing countries?	
a) No	
b) No, but potential measures are under review	X
c) Yes, some policies and measures are in place (please provide details below)	
d) Yes, comprehensive policies and measures are in place (please provide details below)	

e) Not applicable	

Further information on the measures taken.

Box LV.

Please elaborate below on the implementation of this article specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.
The problem to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity has never been raised in the country; however today it is of strategic importance. For its implementation it is necessary, above all, to create an informational field and involve decision-makers in the process of its discussion.

Programme of Work on transfer of technology and technology cooperation

120. Has your country provided financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation? (decision VII/29)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, some programmes being implemented (please provide details below)	
d) Yes, comprehensive programmes being implemented (please provide details below)	

Further comments on the provision of financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation.

121. Is your country taking any measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation? (decision VII/29)	
a) No	
b) No, but some measures being considered	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation.

The National Program of the Turkmen President Saparmurat Turkmenbashi "Strategy of socio-economic reforms in Turkmenistan for the period till 2010" provides for wide use of the world newest achievements to ensure dynamic development of the sectors of economy of Turkmenistan and create information database on advanced technologies. Technical and technological development of all branches of economy is intended to be conducted stage-by-stage. At the first stage, as a main measure, the policy of selective support of the sectors which are most potential for the development of the state is foreseen through creation of realistic conditions for investors in these sectors. Under the existing conditions of the economic structure of Turkmenistan, at this stage generators of means could be traditionally prevalent sectors of the main specialization of the country – raw materials and connected with them processing industries which have entry to foreign markets.

Substantial technological breakthrough aimed at increasing crop capacity and livestock yield needs to be made in the agricultural sector of the country's economy. In plant cultivation the works will be continued on the selection and seed-growing of cotton, wheat and other grain-crops, as well as food and fodder crops. In livestock-breeding the genetic potential of productive cattle and poultry is intended to be increased on the basis of further development of biotechnology and bloodstock-breeding.

122. Has your country made any technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building? (annex to decision VII/29)

a) No	X
b) No, but assessments are under way	
c) Yes, basic assessments undertaken (please provide details below)	
d) Yes, thorough assessments undertaken (please provide details below)	

Further comments on technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building.

123. Has your country made any assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies? (annex to decision VII/29)

a) No	
b) No, but assessments are under way	X
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessments undertaken (please provide details below)	

Further comments on the assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies.

Turkmenistan does not conduct targeted works in genetic engineering and biotechnology, therefore legislative and administrative measures in this field have not been developed, such as the problem of genetically modified organisms (GMO). GMO products are imported to the country and they can oust old local varieties of vegetables from the market. Turkmenistan has not yet made any assessments and risk analysis of the potential benefits with the introduction of new technologies, although BSAP (2002) considered the necessity to develop mechanisms for ensuring application of existing procedural and institutional rules and legislation regarding biosafety (L.1.4.) as a problem demanding solution.

124. Has your country identified and implemented any measures to develop or strengthen appropriate information systems for technology transfer and cooperation, including assessing capacity building needs? (annex to decision VII/29)

a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are in place and being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on measures to develop or strengthen appropriate information systems for technology transfer and cooperation.

The National Program of the Turkmen President Saparmurat Turkmenbashi "Strategy of socio-economic reforms in Turkmenistan for the period till 2010" provides for expansion of cooperation with foreign countries and international organizations in the sphere of science and advanced technologies and training of highly qualified human resources capable of solving set objectives to turn Turkmenistan into a highly developed, secular and democratic country.

In the BSAP (2002) Strategy I. *Cooperation (technical, scientific, international, transfer of technologies)* Action I.2. – *Assistance to international cooperation and exchange of information, resources and technologies* there is a provision for Activity I.2.4. – *Develop and implement the regulations on information access in biodiversity and herbarium data by representatives of foreign countries.*

Turkmenistan has not yet signed an agreement on cooperation with the Global Trust Fund for Agricultural Biodiversity, nonetheless with the support of this Fund and through the International Institute of Plant Genetic Resources (IPGRI) the project "*Conservation of important collections of apple species in Kazakhstan and Turkmenistan*" is carried out in Turkmenistan (2005-2007).

125. Has your country taken any of the measures specified under Target 3.2 of the programme of work as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention? (annex to decision VII/29)

a) No	X
b) No, but a few measures being considered	
c) Yes, some measures taken (please specify below)	
d) Yes, many measures taken (please specify below)	

Further comments on the measures taken as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention.

Box LVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

The National Program of the Turkmen President Saparmurat Turkmenbashi "Strategy of socio-economic reforms in Turkmenistan for the period till 2010" provides for wide use of the world newest achievements to ensure dynamic development of the sectors of economy of Turkmenistan and create information database on advanced technologies. Technical and technological development of all branches of economy is intended to be conducted stage-by-stage. At the first stage, as a main measure, the policy of selective support of the sectors which are most potential for the development of the state is foreseen through creation of realistic conditions for investors in these sectors. Under the existing conditions of the economic structure of Turkmenistan, at this stage generators of means could be traditionally prevalent sectors of the main specialization of the country – raw materials and connected with them processing industries which have access to foreign markets.

Substantial technological breakthrough aimed at increasing crop capacity and livestock yield needs to be made in the agricultural sector of the country's economy. In plant cultivation the works will be continued on the selection and seed-growing of cotton, wheat and other grain-crops, as well as food and fodder crops. In livestock-breeding the genetic potential of productive cattle and poultry is intended to be increased on the basis of further development of biotechnology and bloodstock-breeding.

The National Program of the Turkmen President Saparmurat Turkmenbashi "Strategy of socio-economic reforms in Turkmenistan for the period till 2010" provides for expansion of cooperation with foreign countries and international organizations in the sphere of science and advanced technologies and training of highly qualified human resources capable of solving set objectives to turn Turkmenistan into a highly developed, secular and democratic country.

Turkmenistan does not conduct targeted works in genetic engineering and biotechnology, therefore legislative and administrative measures in this field have not been developed, such as the problem of genetically modified organisms (GMO). GMO products are imported in the country to oust old local varieties of vegetables from the market. Turkmenistan has not yet made any assessments and risk analysis of the potential benefits with the introduction of new technologies, although BSAP (2002) considered the necessity to develop mechanisms for ensuring application of existing procedural and institutional rules and legislation regarding biosafety (L.1.4.) as a problem demanding solution.

Article 17 - Exchange of information

126. ? On Article 17(1), has your country taken measures to facilitate the exchange of information from publicly available sources with a view to assist with the implementation of the Convention and promote technical and scientific cooperation?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	?
d) Yes, comprehensive measures are in place	

The following question (127) is for DEVELOPED COUNTRIES

127. ? On Article 17(1), do these measures take into account the special needs of developing countries and include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on?	
a) No	
b) Yes, but they do not include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	
c) Yes, and they include categories of information listed in Article 17 (2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	

Box LVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Regional Ecological Center of Central Asia (REC) carries out exchange of information on the issues of nature protection, environment and sustainable development on institutional basis in Turkmenistan. REC ensures access to international and national databases. The Scientific Information Center of the Intergovernmental Commission for Sustainable Development (ICSD SIC) was established to facilitate decision-making process at the national level in the regional context and standardizing of information gathering (including ecological data) on sustainable development of the Central Asian countries. The Center ensures functioning of the intergovernmental ecological monitoring system, data bank and other systems of natural environment of the Aral basin. ICSD SIC performs gathering and analysis of information on Central Asia and its preparation for decision-makers, defines concepts and strategies for sustainable development of the region.

In June 2000 SIC was given the status of the UNEP/GRID Arendal Cooperation Center and Regional Cooperation Center on Global Ecological Review (GER-3). *"Assessment Report of the*

Development of Central Asian Regional Support System for Decision-Making in Sustainable Development" (Ashgabat, 2002) was prepared within the frames of the objective *"Strengthen regional system of information exhchage."* Collection, analysis and management of data on environmental additive effects are the basic elements of assessment and reporting. Exchange of thematic information on conservation of national biodiversity is made through ECONET and IBA network projects.

Exchange of thematic information on the Caspian biodiversity is done mostly in the context of the Caspian Environment Programme (CEP). In accordance with the Framework Convention on Marine Environment Protection of the Caspian Sea, the information exchange is regulated by the Special Article 21 on bilateral basis or through the future Secretariat of the Convention.

Article 18 - Technical and scientific cooperation

128. ? On Article 18(1), has your country taken measures to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	X

Further information on the measures to promote international technical and scientific cooperation.

The country effectively develops international technical and scientific cooperation with Central Asian countries, Russia and Iran and international funds, such as World Bank, GEF, UNEP, UNDP, WWF, TACIS, UNIAS, USAID-CDR, INTAS, IBA, CRDF, IPGRI, which support implementation of national and regional projects in the field of in-situ and ex-situ conservation of biological diversity. Partnership cooperation has been significantly accelerated since signing of the Agreement on joint scientific and technological cooperation in the filed of agricultural research of dry areas between the Ministry of Agriculture of Turkmenistan and ICARDA in September 2003. In the context of activity of the ICSD scientific information center some work is done on intergovernmental cooperation in the field of nature protection. The National Herbarium and zoological collections of museums, as well as scientific researches and innovations serve as instruments of cooperation in the field of biodiversity. All these contribute to the development of the capacity volume of the ecological system of Turkmenistan.

129. ? On Article 18(4), has your country encouraged and developed methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention?

a) No	
b) No, but relevant methods are under development	X
c) Yes, methods are in place	

130. ? On Article 18(5), has your country promoted the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?

a) No	
b) Yes (please provide some examples below)	X

Examples for the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.

Turkmenistan attaches great importance to cooperation with international funding organizations for the implementation of joint research programmes and joint ventures. With the support from international donors the following projects have been completed and are implemented now:

"*Important Bird Areas of Central Asia"* (IBA) of the International Programme "Important Bird Areas" (IBA), developed by the International Association for Bird Protection (BirdLife International);

"*Studies of Biology and Conservation of Threatened Sturgeon Species Pseudoscaphirhynchus in Central Asia"* (CRDF);

"Correlates of extinction risk for Central Asian biodiversity" (INTAS).

In the context of the Caspian Environment Programme (World Bank) the "ECOTOX" ecotoxicological project to save the Caspian seal was implemented. The outcomes of the research projects *"Improvement of the Protected Area Management System in Turkmenistan"* (UNDP) and *"ECONET Projection for Long-Term Biodiversity Conservation in Central Asia"* (UNEP/GEF/WWF) allow designing scenarios for correlation of the area development and environment protection. With the support of the Global Environment Facility (GEF) and UNDP the following projects have been completed and are under implementation now:

"Biodiversity Strategy and Action Plan for Turkmenistan"(GEF);

"*Conservation of Biodiversity in Turkmenistan*" (GEF). Phase II.;

"*National Capacity Self Assessment"* (GEF/UNDP);

"*Conservation and Sustainable Use of Biodiversity of Global Importance in Hazar Nature Reserve at the Caspian Sea Coast"* (GEF/UNDP);

"Conservation of Biological and Landscape Diversity of Kugitang Mountains in Turkmenistan" (GEF/UNDP);

"Regionally-Uniform National Consultative Process for Implementation of the Bonn Guidelines in CAM» (GEF\UNIAS).

The work of the World Wildlife Fund (WWF) becomes more intense in Turkmenistan:

"Conservation of Kulan in Turkmenistan" (WWF);

"C*onservation of Tugai Deer in Turkmenistan"* (WWF);

"Cheetah" (WWF);

"*Promotion of In-situ Conservation of Buchara Deer Population"* (WWF);

"*Promotion of In-situ Conservation of Buchara Deer and Leopard Populations"* (WWF);

"*Conservation of Leopard in Kopetdag"* (WWF).

The second phase of the regional project "In situ/on farm conservation of agrobiodiversity (*fruit cultures and their wild relatives*) in Central Asia" begins in 2006 (UNEP and GEF/IPGRI). With the support of the US Agency for International Development (USAID-CDR), in the con-

text of the Turkmen-Israeli joint project *"Collection, Description and Genepool Exchange of Pistachio"* a training course was conducted for a group of the NIDFF specialist on the basis of the Institute of Desert Studies (Israel).

A complex for artificial breeding of sturgeon will be built in the coastal zone of the Caspian Sea. The foundation of the National Museum of Animate Nature has been laid in Ashgabat.

131. Has your country established links to non-governmental organizations, private sector and other institutions holding important databases or undertaking significant work on biological diversity through the CHM? (decision V/14)	
a) No	
b) No, but coordination with relevant NGOs, private sector and other institutions under way	X
c) Yes, links established with relevant NGOs, private sector and institutions	

The following question (132) is for DEVELOPED COUNTRIES

132. Has your country further developed the CHM to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation? (decision V/14)	
a) No	
b) Yes, by using funding opportunities	
c) Yes, by means of access to, and transfer of technology	
d) Yes, by using research cooperation facilities	
e) Yes, by using repatriation of information	
f) Yes, by using training opportunities	
g) Yes, by using promotion of contacts with relevant institutions, organizations and the private sector	
h) Yes, by using other means (please specify below)	

Further comments on CHM developments to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation.

133. Has your country used CHM to make information available more useful for researchers and decision-makers? (decision V/14)	
a) No	
b) No, but relevant initiatives under consideration	X
c) Yes (please provide details below)	

Further comments on development of relevant initiatives.

Such regional projects as *"Identification of Transboundary Ecological Problems in CEP,"* ECONET, IBA, *"In situ/on farm Conservation of Agrobiodiversity (fruit cultures and their wild relatives) in Central Asia"* and others to a certain extent serve as CHM to make available information more useful for researchers and decision-makers. The existing Internet website www.ecostan.info/dbank on rare and threatened plant species of Kopetdag is also an example of technical and scientific cooperation.

134. Has your country developed, provided and shared services and tools to enhance and facilitate the implementation of the CHM and further improve synergies among biodiversity-related Conventions? (decision V/14)	
a) No	X
b) Yes (please specify services and tools below)	

Further comments on services and tools to enhance and facilitate the implementation of CHM and further improve synergies among biodiversity-related Conventions.

The country intensifies implementation of the project *"National Capacity Self-Assessment"* (GEF/UNDP) aimed at facilitation of CHM development and further promotion of interrelations between the conventions related to biodiversity issues.

Box LVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) The country effectively develops capacity volume of the ecological system including technical and scientific cooperation with Cental Asian countries, Russia and Iran and international funds. In the context of activity of the ICSD scientific information center work is conducted on intergovernmental cooperation in the field of nature protection. The National Herbarium and zoological collections of museums, as well as scientific researches and innovations serve as instruments of cooperation in the field of biodiversity.

b) In compliance with the objectives of this Convention, the country has laid foundation for technical and scientific cooperation in using local and traditional technologies. An example of the technical and scientific cooperation is the Internet website on rare and threatened plants of Kopetdag www.ecostan.info/dbank .

c) Turkmenistan attaches great importance to cooperation with international funding or-

ganizations for the implementation of joint research programmes and joint ventures.

d) The country intensifies implementation of the project *"National Capacity Self Assessment"* (GEF/UNDP) aimed at facilitation of CHM development and further promotion of interrelations between the conventions related to biodiversity issues.

f) lack of available information (INTERNET); lack of developed mechanisms to transfer scientific technology and expertise.

Article 19 - Handling of biotechnology and distribution of its benefits

135. ? On Article 19(1), has your country taken measures to provide for the effective participation in biotechnological research activities by those Contracting Parties which provide the genetic resources for such research?	
a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place	
d) Yes, comprehensive legislation are in place	
e) Yes, comprehensive statutory policy and subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative measures are in place	

136. ? On Article 19(2), has your country taken all practicable measures to promote and advance priority access by Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Parties?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place	
d) Yes, comprehensive measures are in place	

Box LIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Turkmenistan has not yet taken practicable measures to promote and advance priority access, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources. In Turkmenistan the questions of access, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources are resolved on the basis of contractual relationship between the participants and users of PGR. At the present stage any other models of interaction pertaining to the access to genetic resources are not provided for in Turkmenistan.

At the same time, in the context of the BSAP Strategic Component L "Legislation" a package of activities has been planned in subsection L.1. "Harmonize national legislation with international biodiversity conventions" in which special emphasis was made on Activity L.1.6. "*Develop mechanisms for enforcing procedural and institutional rules concerning fair and equitable sharing of benefits of biodiversity.*" However, at present time implementation of the planned activities is difficult due to inadequate legislative grounds.

Project proposal "Regionally Harmonized National Consultative Process to Implement Bonn Guidelines on ABS in Central Asia and Mongolia" is prepared with the support from UN University/Institute of Advanced Studies (UNU/IAS). In accordance with the national requirements it is planned to develop national measures to ensure access and benefit-sharing and to build institutional and human capacity at the regional, national and local levels.

Article 20 – Financial resources

Box LX.

Please describe for each of the following items the quantity of financial resources, both internal and external, that have been utilized, received or provided, as applicable, to implement the Convention on Biological Diversity, on an annual basis, since your country became a Party to the Convention.	
a) Budgetary allocations by national and local Governments as well as different sectoral ministries	Within 1996-2006 period – 15%
b) Extra-budgetary resources (identified by donor agencies)	
c) Bilateral channels (identified by donor agencies)	Within 1996-2006 period – 35%
d) Regional channels (identified by donor agencies)	Within 1996-2006 period – 50%
e) Multilateral channels (identified by donor agencies)	
f) Private sources (identified by donor agencies)	
g) Resources generated through financial instruments, such as charges for use of biodiversity	

Box LXI.

Please describe in detail below any major financing programmes, such as biodiversity trust funds or specific programmes that have been established in your country.
NEAP provided for 1.4 billion Manats for biodiversity conservation in 2004. One out of three planned activities was realized and 0.09 billion (6.7%) of the total allocated amount was spent. The country has not established specific national funds or targeted financing programmes intended for the BSAP implementation. The main national source of financing biodiversity is the state budget and international donors' investments. Private sector does not invest in biodiversity because in this field there is no mutually beneficial cooperation between the government and private sectors. In this connection a necessity arises to conduct targeted projects to provide training to the stakeholders (representatives of the public, such as private business persons, and governmental financial structures) in the sphere of development of incentive measures and mechanisms of intersectoral cooperation.

137. ? On Article 20(1), has your country provided financial support and incentives to those national activities that are intended to achieve the objectives of the Convention?	
a) No	
b) Yes, incentives only (please provide a list of such incentives below)	
c) Yes, financial support only	X
d) Yes, financial support and incentives (please provide details below)	
Further comments on financial support and incentives provided.	
The country has not developed a programme of budget allocations for conservation of rare species at the governmental level. Research institutes, national nature reserves and stations are financed by the state budget.	

The next question (138) is for DEVELOPED COUNTRIES

138. ? On Article 20(2), has your country provided new and additional financial resources to enable developing country Parties to meet the agreed incremental costs to them of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes (please indicate the amount, on an annual basis, of new and additional financial resources your country has provided)	
Further comments on new and additional financial resources provided.	

The next question (139) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

139. ? On Article 20(2), has your country received new and additional financial resources to enable it to meet the agreed full incremental costs of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes	

140. ? Has your country established a process to monitor financial support to biodiversity, including support provided by the private sector? (decision V/11)	
a) No	X
b) No, but procedures being established	
c) Yes (please provide details below)	
Further comments on processes to monitor financial support to biodiversity, including support provided by the private sector.	

141. ? Has your country considered any measures like tax exemptions in national taxation systems to encourage financial support to biodiversity? (decision V/11)	
a) No	X
b) No, but exemptions are under development (please provide details below)	
c) Yes, exemptions are in place (please provide details below)	
Further comments on tax exemptions for biodiversity-related donations.	

142. Has your country reviewed national budgets and monetary policies, including the effectiveness of official development assistance allocated to biodiversity, with particular attention paid to positive incentives and their performance as well as perverse incentives and ways and means for their removal or mitigation? (decision VI/16)	
a) No	X
b) No, but review is under way	
c) Yes (please provide results of review below)	
Further comments on review of national budgets and monetary policies, including the effectiveness of official development assistance.	

143. Is your country taking concrete actions to review and further integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans and relevant sectoral policies and plans? (decisions VI/16 and VII/21)	
a) No	
b) No, but review is under way	X
c) Yes, in some initiatives and plans (please provide details below)	
d) Yes, in major initiatives and plans (please provide details below)	

Further comments on review and integration of biodiversity considerations in relevant initiatives, policies and plans.

The country is taking particular actions to integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans.

144. Is your country enhancing the integration of biological diversity into the sectoral development and assistance programmes? (decision VII/21)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, into some sectoral development and assistance programmes (please provide details below)	
d) Yes, into major sectoral development and assistance programmes (please provide details below)	

Further comments on the integration of biodiversity into sectoral development and assistance programmes

Projects on biological diversity are discussed in the Ministry of Nature Protection and funded through the Ministry of Economy and Finance.

The next question (145) is for DEVELOPED COUNTRIES

145. Please indicate with an "**X**" in the table below in which area your country has provided financial support to developing countries and/or countries with economies in transition. Please elaborate in the space below if necessary.

Areas	**Support provided**
a) Undertaking national or regional assessments within the framework of MEA (decision VI/8)	
b) *In-situ* conservation (decision V/16)	
c) Enhance national capacity to establish and maintain the mechanisms to protect traditional knowledge (decision VI/10)	
d) *Ex-situ* conservation (decision V/26)	
e) Implementation of the Global Strategy for Plant Conservation (decision VI/9)	

f) Implementation of the Bonn Guidelines (decision VI/24)	
g) Implementation of programme of work on agricultural biodiversity (decision V/5)	
h) Preparation of first report on the State of World's Animal Genetic Resources (decision VI/17)	
i) Support to work of existing regional coordination mechanisms and development of regional and sub regional networks or processes (decision VI/27)	
j) Development of partnerships and other means to provide the necessary support for the implementation of the programme of work on dry and subhumid lands biological diversity (decision VII/2)	
k) Financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative (decision VII/9)	
l) Support to the implementation of the Action Plan on Capacity Building as contained in the annex to decision VII/19 (decision VII/19)	
m) Support to the implementation of the programme of work on mountain biological diversity (decision VII/27)	
n) Support to the implementation of the programme of work on protected areas (decision VII/28)	
o) Support to the development of national indicators (decision VII/30)	
p) Others (please specify)	
Further information on financial support provided to developing countries and countries with economies in transition.	

The next question (146) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

146. Please indicate with an "**X**" in the table below in which areas your country has applied for funds from the Global Environment Facility (GEF), from developed countries and/or from other sources. The same area may have more than one source of financial support. Please elaborate in the space below if necessary.

Areas	**Applied for funds from**		
	GEF	**Bilateral**	**Other**
a) Preparation of national biodiversity strategies or action plans	***x***		
b) National capacity self-assessment for implementation of Convention (decision VI/27)	***x***		
c) Priority actions to implement the Global Taxonomy Initiative (decision V/9)			

d) *In-situ* conservation (decision V/16)	***x***		
e) Development of national strategies or action plans to deal with alien species (decision VI/23)			
f) *Ex-situ* conservation, establishment and maintenance of *Ex-situ* conservation facilities (decision V/26)			
g) Projects that promote measures for implementing Article 13 (Education and Public Awareness) (decision VI/19)			
h) Preparation of national reports (decisions III/9, V/19 and VI/25)	***x***		
i) Projects for conservation and sustainable use of inland water biological diversity (decision IV/4)			
j) Activities for conservation and sustainable use of agricultural biological diversity (decision V/5)			
k) Implementation of the Cartagena Protocol on Biosafety (decision VI/26)			
l) Implementation of the Global Taxonomy Initiative			
m) Implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity			
n) Others (please specify)			

Further information on application for financial support.

Turkmenistan cooperates with some international organizations which provide support to implementation of projects on in-situ and ex-situ biodiversity conservation at national and regional levels: Global Environment Facility (GEF), UN Environment Programme (UNEP), International Plant Genetic Resources Institute (IPGRI), World Bank, UN Development Programme (UNDP), World Wildlife Fund (WWF), EU Technical Assistance Programme to CIS countries and Mongolia (TACIS), Caspian Environment Programme (CEP), UNIAS, US Agency for International Development (USAID-CDR), International Association promoting cooperation with researchers from independent, former-Soviet, countries (INTAS).

Box LXII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Turkmenistan, in accordance with Paragraph 1 of Article 20, provides for financial support in the amount stipulated in the state budget for those types of national-level activity that are aimed at implementing measures which fulfill the commitments to the Convention. Research institutes,

national nature reserves and stations are financed by the state budget. International funds have been used for the development of national policies and action plans for conservation of biodiversity, self-assessment of national capacity to implement the Convention (resolution VI/27), in-situ conservation (resolution V/16), preparation of national reports (resolutions III/9, V/19 and VI/25). Turkmenistan was a beneficiary of the joint projects with the Global Environment Facility (GEF), UN Environment Programme (UNEP), International Plant Genetic Resources Institute (IPGRI), World Bank, UN Development Programme (UNDP), World Wildlife Fund (WWF), EU Technical Assistance Programme to CIS countries and Mongolia (TACIS), Caspian Environment Programme (CEP), UNIAS, US Agency for International Development (USAID-CDR), International Association promoting cooperation with researchers from independent, former-Soviet, countries (INTAS) which provide support to projects on in-situ and ex-situ conservation of biodiversity. The Programme for conservation of rare plant and animal species has been left outside the state budget financing.

D. THEMATIC AREAS

147. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the thematic programmes of work of the Convention (marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, inland waters biodiversity, dry and sub-humid lands and mountain biodiversity).

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Programme of Work					
	Agricultural	Forest	Marine and coastal	Inland water ecosystem	Dry and subhumid lands	Mountain
(a) Lack of political will and support	0	0	0	0	0	0
(b) Limited public participation and stakeholder involvement	2	2	2	2	2	2
(c) Lack of main-streaming and integration of biodiversity issues into other sectors	2	2	2	2	2	2
(d) Lack of precautionary and proactive measures	1	0	1	1	2	2
(e) Inadequate capacity to act, caused by institutional weakness	2	2	2	2	2	2
(f) Lack of transfer of technology and expertise	3	3	2	3	3	3
(g) Loss of traditional knowledge	2	2	2	2	2	2

(h) Lack of adequate scientific research capacities to support all the objectives	2	2	2	2	2	2
(i) Lack of accessible knowledge and information	2	2	2	2	2	2
(j) Lack of public education and awareness at all levels	2	2	2	2	2	2
(k) Existing scientific and traditional knowledge not fully utilized	1	2	2	2	2	2
(l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	1	2	2	2	1	2
(m) Lack of financial, human, technical resources	1	1	1	1	1	1
(n) Lack of economic incentive measures	1	1	1	1	1	0
(o) Lack of benefit-sharing	3	3	3	3	3	3
(p) Lack of synergies at national and international levels	2	2	2	2	2	2
(q) Lack of horizontal cooperation among stakeholders	2	2	1	2	2	2
(r) Lack of effective partnerships	2	2	2	2	2	2
(s) Lack of engagement of scientific community	2	2	2	2	2	2
(t) Lack of appropriate policies and laws	1	1	1	1	1	1
(u) Poverty						
(v) Population pressure						
(w) Unsustainable consumption and production patterns	2	1	1	2	2	1
(x) Lack of capacities for local communities	2	2	2	2	2	2
(y) Lack of knowledge and practice of ecosystem-based approaches to management	1	1	1	1	1	1

(z) Weak law enforcement capacity	1	1	1	1	1	1
(aa) Natural disasters and environmental change	1	1	1	1	1	1
(bb) Others (please specify)						

Inland water ecosystems

148. Has your country incorporated the objectives and relevant activities of the programme of work into the following and implemented them? (decision VII/4)

Strategies, policies, plans and activities	No	Yes, partially, integrated but not implemented	Yes, fully integrated and implemented	N/A
a) Your biodiversity strategies and action plans		X		
b) Wetland policies and strategies		X		
c) Integrated water resources management and water efficiency plans being developed in line with paragraph 25 of the Plan of Implementation of the World Summit on Sustainable Development		X		
d) Enhanced coordination and cooperation between national actors responsible for inland water ecosystems and biological diversity		X		

Further comments on incorporation of the objectives and activities of the programme of work

a) BSAP provides for a range of activities within the frames of Strategic Component C "Sustainable use" which are aimed at solution of tasks pertaining to sustainable use of biological resources including inland water biodiversity.

b) The issues of protection and rational use of water resources, including wetlands, are regulated by the Water Code of Turkmenistan (2004). The wetland strategy and action plan are under development now in light of Turkmenistan's plan to join the Ramsar Convention.

?) In Turkmenistan the issues of inland water ecosystems and biodiversity are managed at the governmental level by the State Committee for Fishery which has a department for fish protection "Turkmenryboohrana," Ministry of Nature Protection and Ministry of Water Resources of Turkmenistan. The authority and responsibilities of these agencies are demarcated by appropriate Provisions. Many problems of water ecosystem biodiversity are solved in close cooperation both at the governmental level and in the process of joint implementation of major environmental projects, for instance in the CEP context .

149. Has your country identified priorities for each activity in the programme of work, including timescales, in relation to outcome oriented targets? (decision VII/4)	
a) No	
b) Outcome oriented targets developed but priority activities not developed	
c) Priority activities developed but not outcome oriented targets	
d) Yes, comprehensive outcome oriented targets and priority activities developed	X

Further comments on the adoption of outcome oriented targets and priorities for activities, including providing a list of targets (if developed).

Integrated water resources management and enhancement of efficiency of water resources use is one of the priorities of the most important national state policies of Turkmenistan. State programmes "Strategy of Socio-Economic Reforms in Turkmenistan for the Period till 2010" and "Strategy of Economic, Political and Cultural Development of Turkmenistan for the Period till 2020" are oriented at achievement of concrete results.

The NEAP Programme provides for a range of activities for the period of 2002-2010 directly aimed at the rational use of water. Also provided are measures to improve water resources management, to use water-saving technologies and biological and chemical methods of waste and mineralized water treatment, drainage water recycling, etc. The Plan forsees implementation of two major water-management projects directly aimed at addressing the problems of rational use of water resources: joint (with Iran) construction of Dostluk water reservoir on the Tejen River (put in operation in 2005) and creation of the Turkmen Lake.

A package of activities to increase water-use efficiency in Turkmenistan is outlined in the National Action Plan to Combat Desertification (NAPCD, 1996).

The CEP TDA includes the target to ensure sustainable use of rivers and fresh water reservoirs in the Caspian coastal region. To implement it a revision of water-reserves regulations on major rivers is required to secure the water level needed for anadromous fish spawning by 2007.

Transboundary strategies, action plans and activities on water resources management and water efficiency in the Central Asian region are outlined in the Regional Environmental Action Plan (2001) for the period of 2002-2012. The Action Plan determines the main directions of the Central Asian countries' activities to solve short-term and long-term priority problems of nature protection.

The activities to reduce water supply deficit in the region are forseen for implementation by all parties; they include development and introduction of water-saving and water-protective technologies in all sectors of economy.

A package of actions is scheduled in the field of water-resources quality management at the regional level. Specifically, these are the following: to develop a mechanism for realization of existing intergovernmental agreements on protection and rational use of transboundary waterways; to rehabilitate national quality monitoring systems of surface waters of transboundary rivers; to develop and use uniform standardized water quality documentation taking into account international requirements; to create conditions for information exchange on environmental status of transboundary water reservoirs.

Regional plans of integrated water resources management in Central Asia are under development (International workshop in Almaty, October 31 – November 2, 2005).

150. Is your country promoting synergies between this programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level? (decision VII/4)	
a) Not applicable (not Party to Ramsar Convention)	X
b) No	
c) No, but potential measures were identified for synergy and joint implementation	X
d) Yes, some measures taken for joint implementation (please specify below)	
e) Yes, comprehensive measures taken for joint implementation (please specify below)	

Further comments on the promotion of synergies between the programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level.

Turkmenistan has developed and submitted for the government approval a package of documents for joining the Ramsar Convention as a Member Party in the nearest future. The BSAP provides for a range of targets and activities compatible with the principles of the Ramsar Convention.

Within the frames of Strategic Component ? .7. "Conservation of migration corridors" there is Activity **A.7.1.: "**Provide protection for areas where migrating species of birds concentrate (for example, in the wetlands of Hazar zapovednik/reserve, related to the Ramsar Convention)." To harmonize national legislation with international biodiversity conventions, Activity **L.1.1.** is planned: "Prepare supporting documents to join international biodiversity conventions (e.g. Ramsar, and others)." Moreover, in the context of Strategic Component **F.2**. "Coordination and maintenance of biodiversity data" there is a plan to "Prepare database on biodiversity of wetlands under the Ramsar Convention" **(F.2.5**.).

151. Has your country taken steps to improve national data on: (decision VII/4)			
Issues	**Yes**	**No**	**No, but development is under way**
a) Goods and services provided by inland water ecosystems?	X		
b) The uses and related socioeconomic variables of such goods and services?			
c) Basic hydrological aspects of water supply as they relate to maintaining ecosystem function?	X		
d) Species and all taxonomic levels?	X		
e) On threats to which inland water ecosystems are subjected?	X		

Further comments on the development of data sets, in particular a list of data sets developed in case you have replied "**YES**" above.

a) The State Committee for Fishery of Turkmenistan (Goscomrybhoz) and Gosryboohrana Department of fish protection maintain statistical data on commercial fishery of government-run and private organizations and enterprises in the inland and marine waters. Turkmen Society of Hunters and Fishermen maintains statistics on amateur and sports' fish catch and prey of waterfowl and natatorial birds and water mammals (nutria, musk-rat and others). The same organizations maintain records on fish, birds and animal poaching.

b) The standards for water use and protection, including ecological safety of water consumption, are stipulated by the Water Code of Turkmenistan. (25.10. 2004).

?) Regional Environmental Action Plan provides for measures to improve national and regional data quality concerning basic hydrological aspects of water supply. The following actions are planned to maintain ecosystem functions:

- Rehabilitate national quality monitoring systems of surface waters of transboundary waterways;
- Develop and use uniform standardized documentation for water quality compliant with international requirements;
- Create conditions for exchange of information on ecological state of transboundary water bodies.

d) Biodiversity extinction risk assessment is made at species, subspecies and population levels in the Red Data Book of Turkmenistan.

Specifically, it provides a list of the threatened fish species (subspecies) inhabiting inland waters, and proposes measures for their conservation.

e) Comprehensive assessment of threats to which inland water ecosystems are subjected in Turkmenistan is laid out in the BSAP, NEAP and REAP. Among the main threatening factors are irrevocable river water consumption for irrigation and industrial and domestic needs, chemical pollution of natural waters, mineralized and polluted drainage water discharge into rivers, inexpedient practices, poaching.

152. Has your country promoted the application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems? (decision VII/4)	
a) No, the guidelines have not been reviewed	X
b) No, the guidelines have been reviewed and found inappropriate	
c) Yes, the guidelines have been reviewed and application/promotion is pending	
d) Yes, the guidelines promoted and applied	
Further comments on the promotion and application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems.	

Box LXIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Legal grounds for the inland water ecosystems protection is the Water Code of Turkmenistan (2004) which specifically identifies a package of activities to conserve water content of rivers and protect them from polluting, giving special concern to protection of small rivers.

At present systematic hydrological observations are carried out on all major rivers and other water reservoirs by the "Turkmenhydromet" State Service. At the Amudaya River these observations are directly connected with the solving of the task, at the regional intergovernmental level, to ensure that the specified value of fluvial flow is passed into the Aral Sea in order to restore its ecosystem.

National Institute of Desert, Flora and Fauna (NIDFF) of the Ministry of Nature Protection of Turkmenistan conducts long-term monitoring observations of the status of fish populations in the inland water ecosystems, as well as of water-fowl and migrant birds. Special emphasis is placed on the species listed in the Red Data Book of Turkmenistan.

In 2001-2003 the NIDFF implemented the regional international research project "Correlates of extinction risk for Central Asian biodiversity"supported by INTAS. The studies were made in cooperation with the Imperial College (United Kingdom), IUCN, Swedish Threatened Species Unit (Sweden), Institute of Zoology of the Academy of Sciences of Uzbekistan, Institute of Zoology and Institute of Botany of Kazakhstan, and Institute of Regional Studies (Kyrgyzstan). In the context of this project coordinated methods of the extinction risk assessment of vertebrates (including fish) of the Central Asian region were worked through using categories and criteria of the IUCN Red List.

In 2004-2005 the NIDFF implemented the international scientific research project "Evolutionary and conservation studies of imperiled sturgeon species of the genus *Pseudoscaphirhynchus* in Central Asia" supported by the US Civil Research Fund (CRDF). The studies were carried out in cooperation with the University of Alabama and Saint-Louis University, USA. Within the frames of this project the status assessment of populations of rare sturgeon species – large and small Amudar shovelnose sturgeons (*Pseudoscaphirhynchus kaufmanni and hermanni)* inhabiting the Amudarya River and included in the Red Data Book of Turkmenistan and Red Data Books of Uzbekistan, Kazakhstan and Tajikistan, and IUCN Red List was made. In the course of the project implementation, methods of monitoring observations were worked out using modern technologies of field studies and scientific equipment of the latest design.

Development of Provisions on protected areas and riversides of the Amudarya River and water protection zones of major water reservois is fully completed. The Programme for concrete actions to improve ecological and socioeconomical situation in the Aral Sea basin for the period of 2003-2010 (ASBP-2) includes the Draft agreement on water quality management of the Amudarya River and discontinuance of the catchment drainage water discharges prepared by the ASIF Executive Committee.

Marine and coastal biological diversity

General

153. Do your country's strategies and action plans include the following? Please use an "**X**" to indicate your response. (decisions II/10 and IV/15)	
a) Developing new marine and coastal protected areas	X
b) Improving the management of existing marine and coastal protected areas	X
c) Building capacity within the country for management of marine and coastal resources, including through educational programmes and targeted research initiatives (if yes, please elaborate on types of initiatives in the box below)	X
d) Instituting improved integrated marine and coastal area management (including catchments management) in order to reduce sediment and nutrient loads into the marine environment	n/a
e) Protection of areas important for reproduction, such as spawning and nursery areas	X
f) Improving sewage and other waste treatment	X
g) Controlling excessive fishing and destructive fishing practices	X
h) Developing a comprehensive oceans policy (if yes, please indicate current stage of development in the box below)	N/a
i) Incorporation of local and traditional knowledge into management of marine and coastal resources (if yes, please elaborate on types of management arrangements in the box below)	X
j) Others (please specify below)	X
k) Not applicable	

Please elaborate on the above activities and list any other priority actions relating to conservation and sustainable use of marine and coastal biodiversity.

a) National Caspean Action Plan (NCAP) of Turkmenistan includes the target to create specially protected areas and reserved zones in the fattening places. The Caspean SAP sets a target to create new and expand existing marine and coastal protected areas and, where appropriate, transboundary areas, to cover prioritized vulnerable coastal and marine ecotopes.

b) National Biodiversity Conservation Action Plan for Turkmenistan provides for implementation of the following activities within the limits of Stategic Component A.8. "Increase the role of the local population in management of protected areas":

- Develop mechanisms that incorporate stakeholder opinions more effectively into the decision-making process relating to protected areas (? .8.1.);
- Integrate PA management with other government management structures and programmes to involve local government (? .8.2.).

In the context of the NCAP project there are provisions for actions directed at preparation of the draft national law on the coastal zone planning and management and development of the coastal zone palnning and management methodology.

c) The Caspian SAP provides for a range of activities to be impelemented within 5-10

years directed at expansion of the coastal communities' participation in the Caspian environment management. As a result, understanding of the importance of environmental issues by the local and regional authorities will increase. For that, Caspian Environment Center needs to be established in each of the littoral countries to inform the public on ecological problems of the Caspian Sea. Establishment of the CEP press bureau will allow improving public awareness of the state of marine environment of the Caspian Sea in the country at the regional and international levels. The Center will assist mass media in dissemination of information to ensure broad public access to the most important information of the status of marine environment of the Caspian Sea. Educational materials focused on environmental problems of the Caspian Sea will promote academician partnership at the school and university levels. The small-grants fund intended for the programmes of social development of the coastal communities will allow the population, in cooperation with the private sector and international donors, to participate in decision-making concerning local environmental problems. Other objectives include the following:

- Organize environmental educational programmes for representatives of local authorities and national ministries whose activities affect the state of the Caspian environment.
- Realize national EIA procedures for all intended projects encouraging public participation and promote signing and application of the Convention on Environmental Impact Assessment in a Transboundary Context provisions by all littoral states.
- Conduct two times a year CEP conferences financed by national and international partners to promote creation of networks of local authorities of the coastal countries and expansion of their participation in realization of the Caspian environmental policy.
- Promote development of positive sides of ecotourism and design one pilot project in each of the Caspian countries.

e) The Caspian SAP sets an objective to implement, within each country, activities for identification, protection, restoration and management of natural spawning areas of sturgeon and other transit food fish species within the frames of regional agreements, including the development of an appropriate financial strategy.

f) In the context of Strategic Component J.1. (Review of environmental impact assessment methods), the BSAP provides for implementation of the following activities: J.1.3. Conduct research to identify indicator organisms for monitoring pollution in sea water. The NEAP provides for a whole range of activities aimed at improvement of quality of the sewage discharged by the enterprises located in the Caspian coastal zone.

g) The Caspian SAP provides for implementation of targets aimed at ensuring sustainable use of food fish resources of the Caspian Sea. For that the regional cooperation needs to be strengthened in the field of fish resources management including development of regional standards of catching practices of the food fish species and evidence-based determination of the catch quota system. It is necessary to improve mechanisms of conformity, law compliance, and monitoring of the sturgeon catch in accordance with the CITES Paris Declaration; and to develop selective methods of management.

i) The BSAP provides for individual activities in the context of Strategy Component A.8. (Increase the role of the local population in management of protected areas), such as creation of NGOs, to incorporate local and traditional knowledge into management of marine and coastal resources (? .8.3.).

j) Under the CEP there is the Regional Thematic Center on Desertification Combat which conducts studies of the Caspian coast and the problems of land degradation and pollution.

Implementation of Integrated Marine and Coastal Area Management

154. Has your country established and/or strengthened institutional, administrative and legislative arrangements for the development of integrated management of marine and coastal ecosystems?	
a) No	
b) Early stages of development	X
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	

Further comments on the current status of implementation of integrated marine and coastal area management.

The NCAP of Turkmenistan provides for a whole range of institutional, administrative and legislative arrangements for realization of integrated management of marine and coastal ecosystems for the period till 2012. The agreement with the IRI on the Etrek River water consumption is expected to be renewed. A comprehensive programme for studies of causes and consequences of the sea level fluctuations will be worked out. The following actions are planned: to draft a national legislation on the coastal zone planning and management; develop an integrated programme for the study of hydrochemical, hydrogeological and biological composition of the Garabogazgol Bay; work out a provision binding companies to allot financial resources for elimination of consequences of oil-and-gas fields' developments; establish a scientific research center for the Caspian studies; increase public awareness of environmental problems; create an ecological education system; develop and adopt a systematic plan to monitor land degradation; utilize local drains through building sardobas; prepare a plan for recultivation of the previously polluted land; develop methods for the coastal zone planning and management based on international experience and conduct training of local specialists; develop a programme of ecological education and ecotourism on the basis of the department of nature protection of Balkan velayat; expand the network of hydromeeorological overland and offshore observations; upgrade the instrument park; increase use of fresh and low-mineralized ground waters for irrigation; construct water conduits from the Karakum River to villages Bugdaily-Ekerem-Esenguly and Madau-Gyzylatrek; reconstruct recreational zones in Awaza, Heles, Karshy and Bekdahs; reconstruct Garabogazsulphate Production Association; fortify shifting sands along the road sections Jebel-Hazar, Goturdepe-Vyshka, Goturdepe-Hazar and around wells and industrial units; expand the network of the earth's crust motion control grounds.

The Caspian Strategic Action Plan (CSAP) provides for implementation, within 5 years, of a scope of activities to ensure sustainable use and management of coastal areas through integrated coastal zone management, including the following: to review and revise, where appropriate, national rules for the coastal zone planning and management; strengthen technical capacities at the local and city managerial level and provide economic tools to encourage efficient land use; establish regional and national centers and GIS databases for the coastal zone planning and management in transboundary context; implement a pilot project of integrated coastal zone planning and management in each littoral country resting upon environment simulation and national directives.

155. Has your country implemented ecosystem-based management of marine and coastal resources, for example through integration of coastal management and watershed management, or through integrated multidisciplinary coastal and ocean management?	
a) No	X
b) Early stages of development	
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	
Further comments on the current status of application of the ecosystem to management of marine and coastal resources.	

Marine and Coastal Living Resources

156. Has your country identified components of your marine and coastal ecosystems, which are critical for their functioning, as well as key threats to those ecosystems?	
a) No	
b) Plans for a comprehensive assessment of marine and coastal ecosystems are in place (please provide details below)	
c) A comprehensive assessment is currently in progress	
d) Critical ecosystem components have been identified, and management plans for them are being developed (please provide details below)	?
e) Management plans for important components of marine and coastal ecosystems are in place (please provide details below)	
f) Not applicable	
Further comments on the current status of assessment, monitoring and research relating to marine and coastal ecosystems, as well as key threats to them	

Integrated assessment of ecosystem components which are important for conservation of biodiversity of Turkmenistan was made in the National Country Study on the Status of Biodiversity (2002), developed in compliance with the country commitments to the Convention on Biological Divesity. The Study also contains full analysis of situation with conducting assessments, monitoring and research studies including those related to marine and coastal ecosystems, as well as key factors of threat to these ecosystems. Relevant strategic approaches, targets and specific activities to address the existing problems are outlined in the BSAP. For the BSAP preparation the materials of the National Report on the Action Plan on the Caspian Habitat Conservation (2001) were used as they included assessment of the habitats, their records and monitoring, and materials concerning conservation of the existing and restoration of degenerating habitats in the Turkmen sector of the Caspian Sea. Components of marine and coastal ecosystems of the Caspian Sea that are of critical importance for their functioning and their key threat factors were also described in the NCAP of Turkmenistan.

The most important state document that gives assessment of the status of marine and coastal ecosystems is the NEAP which also defines a scope of activities to improve monitoring and as-

sessment of the environmental status (including marine environment).

Assessment of the extinction risk of biodiversity at the species, subspecies and population levels is provided in the Red Data Book of Turkmenistan. It provides, in particular, a list of imperiled species (subspecies) of cyclostomata and fish inhabiting Turkmen sector of the Caspian Sea and proposed measures of their conservation.

Within the framework of the MNP Turkmenistan project "Capacity Building of Informational Systems for Environmental Management in Central Asia," the works to improve informational systems of natural ecosystems protection, harmonize environmental standards, consolidate all environmental plans and initiatives, and develop staged programme implementation started in 2005.

The Caspian SAP provides for a range of activities to be implemented within the 5-10-year period which aim at identifying and restoring of the prioritized vulnerable marine and coastal habitats, which include the following: to develop and adopt standardized methodology of "health" assessment of prioritized coastal habitats, implement and monitor at least five projects of restoration of prioritized coastal habitats; improve and adopt standardized methodology of "health" assessment of prioritized marine habitats; design, implement and monitor at least five projects of restoration of prioritized marine habitats in the Caspian littoral countries.

157. Is your country undertaking the following activities to implement the Convention's work plan on coral reefs? Please use an "**X**" to indicate your response.

Activities	Not implemented nor a priority	Not implemented but a priority	Currently implemented	Not applicable
a) Ecological assessment and monitoring of reefs				X
b) Socio-economic assessment and monitoring of communities and stakeholders				X
c) Management, particularly through application of integrated coastal management and marine and coastal protected areas in coral reef environments				X
d) Identification and implementation of additional and alternative measures for securing livelihoods of people who directly depend on coral reef services				X
e) Stakeholder partnerships, community participation programmes and public education campaigns				X
f) Provision of training and career opportunities for marine taxonomists and ecologists				X

g) Development of early warning systems of coral bleaching				X
h) Development of a rapid response capability to document coral bleaching and mortality				X
i) Restoration and rehabilitation of degraded coral reef habitats				X
j) Others (please specify below)				X

Please elaborate on ongoing activities.

Marine and Coastal Protected Areas

158. Which of the following statements can best describe the current status of marine and coastal protected areas in your country? Please use an "**X**" to indicate your response.	
a) Marine and coastal protected areas have been declared and gazetted (please indicate below how many)	
b) Management plans for these marine and coastal protected areas have been developed with involvement of all stakeholders	
c) Effective management with enforcement and monitoring has been put in place	X
d) A national system or network of marine and coastal protected areas is under development	
e) A national system or network of marine and coastal protected areas has been put in place	X
f) The national system of marine and coastal protected areas includes areas managed for purpose of sustainable use, which may allow extractive activities	X
g) The national system of marine and coastal protected areas includes areas which exclude extractive uses	X
h) The national system of marine and coastal protected areas is surrounded by sustainable management practices over the wider marine and coastal environment.	X
i) Other (please describe below)	
j) Not applicable	

Further comments on the current status of marine and coastal protected areas.

Hazar State Nature Reserve (Krasnovodsk Reserve until 1994) established in 1932 functions at the south-eastern coast of the Caspian Sea.

The project of the Ministry of Nature Protection of Turkmenistan "Improvement of the Protected Area Management System in Turkmenistan" (2003-2006) funded by UNDP is being completed.

Implementation of a five-year UNDP/GEF project "Conservation and Sustainable Use of Bio-

diversity of Global Importance in Hazar Reserve at the Caspian Coast" begins in 2006.

The Caspian SAP provides for a range of activities to be implemented in a 5-year period to ensure presentation of all main coastal and marine habitats in the regional protected area system, including: to improve efficiency of the Caspian coastal protected areas management in compliance with the existing legislation; establish new and expand existing coastal protected areas and transboundary areas, where appropriate, to cover prioritized vulnerable coastal and marine ecosystems; create regional information network for the Caspian protected areas.

Mariculture

159. Is your country applying the following techniques aimed at minimizing adverse impacts of mariculture on marine and coastal biodiversity? Please check all that apply.	
a) Application of environmental impact assessments for mariculture developments	X
b) Development and application of effective site selection methods in the framework of integrated marine and coastal area management	X
c) Development of effective methods for effluent and waste control	X
d) Development of appropriate genetic resource management plans at the hatchery level	X
e) Development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature.	
f) If seed collection from nature cannot be avoided, development of environmentally sound practices for spat collecting operations, including use of selective fishing gear to avoid by-catch	
g) Use of native species and subspecies in mariculture	X
h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids.	
i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity	X
j) Minimizing the use of antibiotics through better husbandry techniques	X
k) Use of selective methods in commercial fishing to avoid or minimize by-catch	X
l) Considering traditional knowledge, where applicable, as a source to develop sustainable mariculture techniques	
m) Not applicable	

Further comments on techniques that aim at minimizing adverse impacts of mariculture on marine and coastal biodiversity.

In compliance with the Law of Turkmenistan "On State Ecological Expertise" enterprises, foreign companies and organizations submit materials concerning the intended activity (building, reconstruction, etc.) for environmental expertise to the Ministry of Nature Protection before the commencement of the concerned activity. In accordance with the provisions of the Report on Environmental Impact Assessment (EIA TDS 579-2001) and Environment Protection Action

Plan (EPAP) ecological risks and consequences of the project are assessed. Also reflected are preventative measures to avoid advese effects on the environment, flora and fauna. The EIA and EPAP expert appraisal specifically take into account the existence of specially protected areas in the allotted territory and describes flora and fauna characteristics. Also taken into account are the presence of rare, endemic and relic species, including those registered in the Red Data Book of Turkmenistan; the presence of the food species, place of their concentration, migration ways, etc. If needed, the Ecological Expertise Conclusion may demand measures to exclude or reduce the project's negative impact on ecosystems and floral and faunal objects.

In Turkmenistan mariculture was not developed but recently some projects have been implemented. In accordance with the Presidential Decree, in the Caspian coastal zone 30 km away from Turkmenbashy seaport a modern complex for artificial breeding of the Caspian sturgeon species and caviar production is being built. The CEP small-grant project "Restoration of commercial resources of crayfish in the Turkmen waters of the Caspian Sea" is under implementation. At the Caspian coast, near Bekdash village, the project "Cultivation of *Artemia salina* in ponds" is under way. The aquaculture objects in all of these projects are local species of invertebrates and fish.

Alien Species and Genotypes

160. Has your country put in place mechanisms to control pathways of introduction of alien species in the marine and coastal environment? Please check all that apply and elaborate on types of measures in the space below.	
a) No	
b) Mechanisms to control potential invasions from ballast water have been put in place (please provide details below)	X
c) Mechanisms to control potential invasions from hull fouling have been put in place (please provide details below)	
d) Mechanisms to control potential invasions from aquaculture have been put in place (please provide details below)	X
e) Mechanisms to control potential invasions from accidental releases, such as aquarium releases, have been put in place (please provide details below)	
f) Not applicable	

Further comments on the current status of activities relating to prevention of introductions of alien species in the marine and coastal environment, as well as any eradication activities.

Witin the frames of the BSAP Component G.4 "Studies of invasive (alien) species" of Strategy G "Scientific research," Activity G.4.1. "Study methods of combating invasive alien species (e.g. brown rats, *Mnemiopsis*, and melon fly) threatening indigenous ecosystems, species and varieties" is foreseen to be implemented.

The rules of protection of shoaling waters of Turkmenistan from watercraft pollution/hull fouling (2005), taking into account particular sanitary, epidemiological and ecological hazards of ballast water brought by boats from other seas and reivers, fully prohibit discharges of ballast into inland and territorial waters of Turkmenistan. Discharge of ballast water into inland waters of Turkmenistan is allowed to be performed in accordance with the Convention on Prevention Water Craft Pollution (? ARPOL 73/78) with the regard to the water craft structure and equipment.

Fishery regulations for the Caspian Sea (1984) contain provisions regulating fish-breeding and acclimatization transportations and measures to prevent introductions of unwanted alien species. Permissions for export-import transportation of fish and other faunal and floral hydrobionts may be issued only by special permits of the Ministry of Nature Protection of Turkmenistan and if sanitary-epidemiological and phyto-sanitary certificates are present.

Box LXIV.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

The project of the Ministry of Nature Protection of Turkmenistan "Improvement of the Protected Area Management System in Turkmenistan" (2003-2005) funded by UNDP was completed.

The project was aimed at improvement of management system of specially protected areas in Turkmenistan (which include Hazar State Nature Reserve at the Caspian coast).

In 2003-2005 the regional project "ECONET Projection for Long-Term Conservation of Biodiversity in Central Asia" was implemented, in the context of which the issues of creation of regional protected areas network as the basis for intergovernmental environmental cooperation and management were worked out.

Implementation of a five-year UNDP/GEF project "Conservation and Sustainable Use of Biodiversity of Global Importance in Hazar Reserve at the Caspian Coast" begins in 2006.

Under the CEP small-grants programme in 2003-2004 Emerol Ltd. Company (Ireland) implemented the project "Pure Water Energy: Implementation of Methodology of Purification of Ground Water from Oil Pollution at the Eastern Coast of the Caspian Sea" which was aimed at the reduction of pollution level in the Saimonov Bay.

Commercial catch quota on various fish species in the Turkmen sector of the Caspian Sea is regulated at the regional level within the framework of the Commission on biological resources of the Caspian Sea. The list of permitted commercial and amateur fishing gears, as well as technical parameters of the permitted fishing gears, and fishing net mesh size are determined by the Regulations for Fishery in the Caspian Sea (1984 ?.). Drift fishing of herring in the sea is prohibited due to the high rate of sturgeon fry side-catch.

During traditional Caspian vobla abd sazan fishery in Gasanguly fishing grounds during their spawning migration weekdays prohibited for fishing are established in coordination with the local fish providers to ensure passing of the fish from the sea to the spawning areas in the estuary of the Atrek River.

Integrated assessment of ecosystem components which are important for conservation of biodiversity of Turkmenistan was made in the National Country Study on the Status of Biodiversity (2002), developed in compliance with the country commitments to the Convention on Biological Divesity. The Study also contains full analysis of situation with conducting assessments, monitoring and research studies including those related to marine and coastal ecosystems, as well as key factors of threat to these ecosystems. Relevant strategic approaches, targets and specific activities to address the existing problems are outlined in the BSAP. For the BSAP preparation the materials of the National Report on the Action Plan on the Caspian Habitat Conservation (2001) were

used as they included assessment of the habitats, their records and monitoring, and materials concerning conservation of the existing and restoration of degenerating habitats in the Turkmen sector of the Caspian Sea. Components of marine and coastal ecosystems of the Caspian Sea that are of critical importance for their functioning and their key threat factors were also described in the NCAP of Turkmenistan.

The most important state document that gives assessment of the status of marine and coastal ecosystems is the NEAP which also defines a scope of activities to improve monitoring and assessment of the environmental status (including marine environment).

Assessment of the extinction risk of biodiversity at the species, subspecies and population levels is provided in the Red Data Book of Turkmenistan. It provides, in particular, a list of imperilled species (subspecies) of cyclostomata and fish inhabiting Turkmen sector of the Caspian Sea and proposed measures of their conservation.

Within the framework of the MNP Turkmenistan project "Capacity Building of Informational Systems for Environmental Management in Central Asia," the works to improve informational systems of natural ecosystems protection, harmonize environmental standards, consolidate all environmental plans and initiatives, and develop staged programme implementation started in 2005.

Hazar State Nature Reserve (Krasnovodsk Reserve until 1994) established in 1932 successfully functions at the south-eastern coast of the Caspian Sea. Now the reserve presents the whole system of protected areas covering Turkmen coastal and offshore territories which are most important for biodiversity conservation. The areas protected by Hazar Reserve are the largest wintering and resting places at the Caspian Sea for migrant birds, the majority of which are waterfowl and natatorial birds. The Caspian seal is protected on Ogurchinsky Island.

In Turkmenistan mariculture was not developed in the past but recently some projects have been implemented. In accordance with the Presidential Decree, in the Caspian coastal zone 30 km away from Turkmenbashy seaport a modern complex for artificial breeding of the Caspian sturgeon species and caviar production is being built. The CEP small-grant project "Restoration of commercial resources of crayfish in the Turkmen waters of the Caspian Sea" is under implementation. At the Caspian coast, near Bekdash village, the project "Cultivation of *Artemia salina* in ponds" is under way. The aquaculture objects in all of these projects are local species of invertebrates and fish.

Turkmenistan takes part in the regional monitoring of *Mnemiopsis leidyi*, discussions of the problems and consequences of its invasion into the Caspian Sea for fish and other marine biological resources, and development of combat measures. At present the *Mnemiopsis leidyi* invasion is perhaps the primary threat to biodiversity and bioresources of the Caspian Sea and Caspian fishery. Annual outputs of sprat catch made by the Turkmen fishing enterprises in the Caspian Sea in 1999-2003 were about 3-4 times smaller as compared to 1991, at the same fishing activity. In accordance with the expert judgment, this is the direct consequence of the mass reproduction of *Mnemiopsis leidyi*. *Mnemiopsis leidyi* also makes mechanical obstacles for net fishing in the sea decreasing its efficiency and for sanitary and hygienic state of the coastal zone. Within the 6 years since *Mnemiopsis leidyi* has been first seen in the Turkmen water area of the Caspian Sea, the National Institute of Desert, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan has carried out a certain scope of studies and observations that allowed giving a general description of the alien population changes in the eastern Mid-Caspian shoaling water. In 2002 the "Expert" non-governmental initiative group (Turkmenbashi city) implemented the project "*Mnemiopsis*: a Real Threat" (ISAR), in the context of which the study of the *Mnemiopsis leidyi* population number and distribution in Turkmenbashi Bay of the Caspian Sea was made. In 2005 monitoring of the *Mnemiopsis leidyi* population number and distribution in the Turkmen sector of the

Caspian Sea has been started by the specialists of Hazar reserve. However, among the specialists and representatives of environmental and fishery organizations of Turkmenistan there is no unanimous opinion on the ways to address the problem of regulating the *Mnemiopsis leidyi* population number in the Caspian Sea. The proposal to introduce *Beroe ovata* is either supported as correct and dictating prompt realization, or recognized as promising but not yet sufficiently worked out, or fully rejected due to the fears that the new introducers would not solve the task of the *Mnemiopsis leidyi* suppression but rather create additional environmental problems.

Although special mechanisms to control potential invasions from ballast water and hull fouling have not been put in place, the analysis of such threats to the Caspian Sea was made and principal avtivities to prevent such invasions were proposed. (National Institute of Desert, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan prepared and published relevant booklets).

The Caspian SAP provides for a range of activities to be implemented in a 5-year period to improve control of potential invasions of invasive species and management of the introduced and invaded species.

Agricultural biological diversity

161. ? Has your country developed national strategies, programmes and plans that ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components? (decisions III/11 and IV/6)	
a) No	
b) No, but strategies, programmes and plans are under development	X
c) Yes, some strategies, programmes and plans are in place (please provide details below)	
d) Yes, comprehensive strategies, programmes and plans are in place (please provide details below)	

Further comments on agrobiodiversity components in national strategies, programmes and plans.

The country has not developed a special programme that ensures sustainable use of agrobiodiversity components. There is a series of legislative documents that serve to create the necessary prerequisites for development of the legal standard basis for agrobiodiversity management:

- Law "On Farmers' Associations" (1995)
- Law "On Seeds" (1996).
- Law "On Selection (Breeding) Achievements and Protection of Selectionists' Rights" is under the Government's consideration now.
- Law "On Food Security" (2000)
- Land Code (2004)

Presidential Decrees of Turkmenistan:

- "On Raising Interested Economical Motives and Increasing Production and Improving Quality of Agricultural Products" (1993);
- "On Establishment of State Fund for Agricultural Development of Turkmenistan" (1996);
- "On Implementation of Projects for Plant Protection and Veterinary" (1997);
- "On State Inspectorate on Plant Quarantine" (1998) - Provision;
- "On Establishment of National Institute of Raw Drug Materials of Turkmenistan" (1999);

- "On Measures to Increase Effectiveness of Agricultural Sciences in Turkmenistan" (2003);
- Agreement/Memorandum of Cooperation between ICARDA and the Ministry of Agriculture (2003) in the context of which the joint programme "Conservation, Study and Use of Agricultural Plant Genetic Resources" is implemented;
- Presidential Decree "On Measures to Improve Agricultural Seed-Growing in Turkmenistan" (1993);
- Presidential Decree "On Measures to Improve Land-Reclamation" (2004).

Furthermore, the national target has been included into the Biodiversity Strategy and Action Plan for Turkmenistan (2002) as a strategic component "To improve ex-situ conservation of agrobiodiversity and natural gene pools by 30% by the end of 2008"

The following national programmes are under impelemetation: "Strategy of socioeconomic reforms in Turkmenistan for the period till 2010," "On Grain," and President Saparmurat Turkmenbashy Programme "Strategy of economic, political and cultural development of Turkmenistan for the period till 2020."

In accordance with the Programme, development of agriculture will be directed to full satisfaction of needs of population in food. Around 70 per cent of the increase of gross output in agriculture will be made through the increase in crop capacity and livestock and poultr? yield. The intended crop outputs will be achieved through 2 or 3 harvestings of some agricultural crops a year owing to reuse of areas under basic agricultural crops. Implementation of parameters of agricultural economic development in many respects depends on success of the agrarian reform and creation of favourable conditions for the activity of agricultural commodities producers. The government pursues the policy of support of agrarians and forms an economic mechanism based on the economic management methods.

162. ? Has your country identified ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use, including food security, of agricultural biological diversity? (decision V/5)

a) No	X
b) No, but potential measures are under review	
c) Yes, some measures identified (please provide details below)	
d) Yes, comprehensive measures identified (please provide details below)	

Further information on ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use of agricultural biodiversity.

Turkmenistan has not yet joined the Cartagena Protocol on Biological Safety. The country has not yet started control of imported GMO products which can make negative effects on biodiversity and human health. The issue of joining the Cartagena Protocol is of current importance for Turkmenistan today; there is an imminent necessity for its positive consideration. The rationale for joining the Protocol has been developed and submitted to the Cabinet of Ministers.

It is also necessary to work out legal grounds to regulate export-import of the GMO-containing products.

Programme element 1 – Assessment	
163. Has your country undertaken specific assessments of components of agricultural biodiversity such as on plant genetic resources, animal genetic resources, pollinators, pest management and nutrient cycling?	
a) No	
b) Yes, assessments are in progress (please specify components below)	X
c) Yes, assessments completed (please specify components and results of assessments below)	

Further comments on specific assessments of components of agricultural biodiversity.

Turkmenistan is one of the centers of origin for a range of most important agricultural plants; it possesses rich floral and faunal genetic resources, including wild relatives and adapted to local conditions varieties of cultivated from ancient times agricultural plants and domestic animals.

There are special services for conservation of agricultural genetic diversity, livestock and other species: Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources, Scientific Research Institute of Agriculture, Scientific Research Institute of Grain Crops, State Service for Seed-Growing and Sort-Testing, Etrek Experimental Center of Subtropical Plants, "Turkmenmallary" Joint Live-Stock Association, Scientific Research Institute of Cattle-Breeding and Veterinary, "Turkmenatlary" State Association.

The genepool of plants includes 7718 samples of which the samples of the local (Turkmen) origin make up 8.5 per cent of the total number.

To date the local variety of the white wheat -"*ak bugday*"- which was cultivated five thousand years ago has been preserved in the country. In March 2005 the Turkmen National Genepool Bank was opened in the building of the National "Ak Bugday" Museum of White Wheat which functions under the Research Institute of Grain Crops. Opening of the first country genepool bank is of great importance for the storage of collected samles of grain-crops, leguminous plants and other species and their wild relatives.

Local varieties of melons, grapes, wild species of numerous leguminous plants and forest fruit species such as figs, pomegranates, apples, pears and more than 40 other species make excellent source material for further selection.

In the context of the Memorandum of Cooperation between ICARDA and the Ministry of Agriculture signed in September 2003, the joint programme "Conservation, Study and Use of Agricultural Plant Genetic Resources" is implemented.

The country has made assessment of several plant cultures. Thus, the Scientific Research Institute of Grain Crops has a computerized database for wheat, pomegranate, and apple. Catalogues on individual cultures – fruit and vines have been published in a small number of copies. There are a card catalogue and lists of samples by cultures. The card catalogue registers all data of the collection studies (phenology, resistance to pests and diseases, composition, crop capacity, biological data, etc.). The sample assessment is used for preparation of reports, catalogues and publications. The samples have passport data (definitions) and partially – descriptions and agronomical data.

164. Is your country undertaking assessments of the interactions between agricultural practices and the conservation and sustainable use of the components of biodiversity referred to in Annex I of the Convention (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance)?	
a) No	X
b) Yes, assessments are under way	
c) Yes, some assessments completed (please provide details below)	
d) Yes, comprehensive assessments completed (please provide details below)	

Further comments on assessment of biodiversity components (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance).

The country has not undertaken assessments of the interaction between agricultural practices and the conservation and sustainable use of the components of biodiversity.

165. Has your country carried out an assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agro-ecosystem services for food production and food security?	
a) No	X
b) Yes, assessment is under way	
c) Yes, assessment completed (please specify where information can be retrieved below)	

Further comments on assessment of the knowledge, innovations and practices of farmers and indigenous and local communities.

On the basis of the Presidential Decree "On the Right of Land Owning and Land Use in Turkmenistan," the country has started the process of building land lease relationship which only indirectly touches local farmers' knowledge and attitudes to innovations. However, any direct assessments of farmers' knowledge and practices in sustaining agricultural biodiversity have not been carried out.

166. Has your country been monitoring an overall degradation, status quo or restoration/rehabilitation of agricultural biodiversity since 1993 when the Convention entered into force?	
a) No	X
b) Yes, no change found (status quo)	
c) Yes, overall degradation found (please provide details below)	
d) Yes, overall restoration or rehabilitation observed (please provide details below)	

Further comments on observations.

Since 2002 the Center to Combat Desertification has been working under the NIDFF. The specialists of the Center have been conducting monitoring of the general degradation of land, including agricultural biodiversity. Thus, within the frames of the project "Combat Land Degradation in Three Provinces of Turkmenistan," the work has been done for the local population to

adopt and use desertification combat methods. It has resulted in the beginning of the process aimed at sustainable land use by the whole village or a group of villages.

Turkmenistan has developed the National framework programme of land resources management and formed the Advisory Board. A secretariat of the Subregional Educational Programme on Land Resources Management for Central Asia has been formed on the NIDFF basis.

Programme element 2 - Adaptive management	
167. Has your country identified management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods?	
a) No	
b) No, but potential practices, technologies and policies being identified	X
c) Yes, some practices, technologies and policies identified (please provide details below)	
d) Yes, comprehensive practices, technologies and policies identified (please provide details below)	
Further comments on identified management practices, technologies and policies.	

Programme element 3 - Capacity-building	
168. Has your country increased the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable agricultural biodiversity and to develop strategies and methodologies for *In-situ* conservation, sustainable use and management of agricultural biological diversity?	
a) No	
b) Yes (please specify area/component and target groups with increased capacity)	X
Further comments on increased capacities of farmers, indigenous and local communities, and their organizations and other stakeholders.	

The project “In situ/On Farm Conservation of Agrobiodiversity in Central Asia” has been developed in the framework of the Network of Plant Genetic Resources of Central Asia and Transcaucasia (CATCN-PRG) with support from International Plant Genetic Resources Institute (IPGRI). The objective of the project is to conserve agrobiodiversity (fruit species and their wild relatives) on farms. The project is designed to provide farmers, research organizations and local community with an opportunity to use knowledge, methodology and strategies for sustainable in-situ/on farm conservation and management of fruit cultures and their wild relatives. Conservation of these resources will allow farmers to increase the crop capacity of their farms and improve living standards in the province. In the period from 2000 to 2004 the project implemented two preliminary phases (PDF A and PDF B) during which field trips to the pilot/model sites were organized, fruit cultures prioretized (vines, pear, pomegranate, fig, almond, pistachio and apple), the strategy and methodology of the place of study developed and ap-

proved, agroecosystems and agroecozones justified, educational programme developed, farms and individual farmers retaining local varieties of fruit cultures identified. Implementation of the 5-year project itself is planned to begin in 2006.

Great contribution of international centers (IPGRI, ICARDA, CIMMYT and others) should be noted in the field of capacity building of agriculture: organization of joint research studies and productions, assistance in increasing capacity of research workers and adopting new research methods, creation of computerized databases and supply of technical and laboratory equipment. Young scientists participate in international workshops, meetings, conferences, English language courses and other trainings. Special trainings are conducted for farmers (mobile field workshops) to learn new agricultural technologies. All that allows capacity building and scientific research conducting in the field of management and sustainable use of agricultural biodiversity.

During the period of joint studies, the ICARDA and IPGRI centers provided an opportunity for 250 researchers of the country to receive training and participate in courses, workshops, regional and international conferences both in the Central Asian region and abroad. These are the following workshops:

Consulting workshop on rural development in the CWANA region (Cairo, Egypt, 2003)

Mobile workshop for farmes and researchers on demonstration testing in working environment (Turkmenistan, 2003)

Mobile workshop on germplasm improvement, seed growing and production testing of winter wheat (Turkmenistan, 2004)

Regional workshop on strengthening partnership for effective agricultural planning and scientific research in Central Asia (Tashkent, Uzbekistan, 2004)

Mobile workshop on improvement of rural living through effective management of water resources and soil fertility in working environment of Central Asia (India, 2004)

Three-month training for a researcher at the Scientific Research Institute of Agriculture (Aleppo, Cyria, 2000)

Two-week training on plant genetic resources (PGR) for a researcher (Aleppo, Cyria, 2001)

Regional training courses on conservation of apricot genetic resources in the context of the IPGRI project (Khojent, Tajikistan, 2003)

Regional training courses on joint approach to PGR management in the context of the IPGRI project (Almaty, Kazakhstan, 2003)

English language training for more than 10 young specialists (Tashkent, 2000-2004) etc.

169. Has your country put in place operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity?	
a) No	
b) No, but potential mechanisms being identified	
c) No, but mechanisms are under development	X – see further comments below
d) Yes, mechanisms are in place	

170. Has your country improved the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity?	
a) No	
b) No, but some measures and arrangements being identified	
c) No, but measures and arrangements are under development	
d) Yes, measures and arrangements are being implemented (please specify below)	X

Further comments on the measures taken to improve the policy environment.

An agreement is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Scientific Research Institute of Cotton on the cotton samples transfer;

Turkmenistan has a State programme of cotton and wheat purchases. The Agricultural Joint-Stock Company enters into a contract with cotton/wheat growers on equitable benefit-sharing on the basis of the received income. At that, under the contract the Agricultural Joint-Stock Company provides farmers with tractor services and fertilizers at half price and free irrigation water. Government taxes are very low. After the cotton is processed, the company gives cotton oil and cotton-cake to the farmers. A farmer has the right to sell his crop to the government or abroad through the commodity exchange. The debts to the state are repaid from the total profit received.

Scientific research institutions also make contracts with farmers or PGR users: Scientific Research Institute of of Agriculture and Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources signed an agreement on PGR exhange (saplings and other agricultural plant genetic resources).

Sale agreements between various organizations at a fixed interest rate (Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources plays an intermediary role).

Contract between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Petroleum refinery on planting of greenery in the refinery grounds, Turkmenbashi Stadium and other territories.

There are individual international agreements:

In the context of the Agreement of Cooperation between ICARDA and the Ministry of Agriculture signed in 2003, the joint programme “Conservation, Study and Use of Genetic Resources of Agricultural Plants” is implemented.

International centers of CIMMYT, ICARDA, Institute of Plant Cultivation VIR (Russia) have established scientific programmes of testing sent samples on the 50% interest basis. Scientific Reasearch Institute of Grain Crops and Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources renew samples, send back promising

samples and keep them for further selection works. Turkmenistan cooperates with USA, Israel, Uzbekistan and other countries in exchanging of genetic resources of plants.

Agreement of Cooperation (1995) is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation VIR of Russia on exchange and transfer of germplam of agricultural plants.

Agreement of Cooperation (2003) is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation VIR of Ukraine on exchange and transfer of germplam of fruit plants.

Agreement of Cooperation (1995) is signed between Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources and Institute of Plant Cultivation VIR of Russia on equitable sharing of benefits from teasel sale.

Programme element 4 – Mainstreaming	
171. Is your country mainstreaming or integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes?	
a) No	
b) No, but review is under way	
c) No, but potential frameworks and mechanisms are being identified	
d) Yes, some national plans or strategies mainstreamed and integrated into some sectoral plans and programmes (please provide details below)	X
e) Yes, some national plans or strategies mainstreamed into major sectoral plans and programmes (please provide details below)	

Further comments on mainstreaming and integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes.

The Biodiversity Strategy and Action Plan (BSAP) for Turkmenistan have been developed. At present in the context of implementation of the GEF/UNDP project "Turkmenistan National Capacity Self Assessment" activities are being worked out to be included in the action plan for capacity building in biodiversity in general. One of the project recommendations is the issue of the BSAP approval at the Council of Agroindustrial Complex level for political validation of the BSAP and integration in sectoral and cross-sectoral development plans and programmes.

The country has also developed the National Environmental Action Plan of the President of Turkmenistan Saparmurat Turkmenbashi (NEAP). The issues of conservation and sustainable use of biodiversity are the prioritized components of the NEAP. NEAP was approved by the President of Turkmenistan and, consequently, has been incorporated into sectoral plans and programmes. Now the activities on nature protection are implemented, including the ones on biodiversity conservation.

172. Is your country supporting the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its integration into wider strategies and action plans for biodiversity?	
a) No	
b) Yes, by supporting institutions in undertaking relevant assessments	X
c) Yes, by developing policy and planning guidelines	
d) Yes, by developing training material	
e) Yes, by supporting capacity-building at policy, technical and local levels	
f) Yes, by promoting synergy in the implementation of agreed plans of action and between ongoing assessment and intergovernmental processes.	

Further comments on support for institutional framework and policy and planning mechanisms.

The country implements the National Programmes "Strategy of socioeconomic reforms in Turkmenistan for the period till 2010" and "Grain."

President Saparmurat Turkmenbashi National Programme "Strategy of economic, political and cultural development of Turkmenistan for the period till 2020" has been developed and is under implementation now.

Agrobiodiversity management is performed by the Ministry of Agriculture of Turkmenistan through the system of executing offices united under the Council for Agroindustrial Complex (Gengesh). The Council was established by the Presidential Decree (2003) to promote development of the ministries and enterprises of agricultural and manufacturing sectors of economy; coordination of activities to strengthen food security of the country; increase primary and food production. Leading organizations of the Council include: Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources, Scientific Research Institute of Agriculture, Scientific Research Institute of Grain Crops, State Service for Seed-Growing and Sort-Testing, Etrek Experimental Center of Subtropical Plants, "Turkmenmallary" Joint Live-Stock Association, Scientific Research Institute of Cattle-Breeding and Veterinary, "Turkmenatlary" State Association.

The President of Turkmenistan decreed the establishment of the Agricultural Joint-Stock Company and approved the Provisions on this Company (2004). Its goal includes the task to ensure high agricultural production level.

173. In the case of centers of origin in your country, is your country promoting activities for the conservation, on farm, *In-situ*, and *Ex-situ*, of the variability of genetic resources for food and agriculture, including their wild relatives?	
a) No	X
b) Yes (please provide details below)	

Further comments on of the conservation of the variability of genetic resources for food and agriculture in their center of origin.

Within the context of the IDGRI project, the country has started the process of creating positive environment for decision making in the field of incentive measures development to encourage conservation of biodiversity on farms. There are some individual agreements on exchange of samples between scientific research institutions and farmers or PGR users. For instance,

Scientific Research Institute of of Agriculture and Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources signed an agreement on PGR exhange (saplings and other agricultural plant genetic resources).

Box LXV.

Please provide information concerning the actions taken by your country to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

Accumulated country experience of entomological studies is the basis for the country to join the common process to implement the International Initiative for the Conservation and Sustainable Use of Pollinators.

Box LXVI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

RE Q.169

During the period of joint studies, the ICARDA and IPGRI centers provided an opportunity for 250 researchers of the country to receive training and participate in courses, workshops, regional and international conferences both in the Central Asian region and abroad. These are the following workshops:

Consulting workshop on rural development in the CWANA region (Cairo, Egypt, 2003)

Mobile workshop for farmes and researchers on demonstration testing in working environment (Turkmenistan, 2003)

Mobile workshop on germplasm improvement, seed growing and production testing of winter wheat (Turkmenistan, 2004)

Regional workshop on strengthening partnership for effective agricultural planning and scientific research in Central Asia (Tashkent, Uzbekistan, 2004)

Mobile workshop on improvement of rural living through effective management of water resources and soil fertility in working environment of Central Asia (India, 2004)

Three-month training for a researcher at the Scientific Research Institute of Agriculture (Aleppo, Cyria, 2000)

Two-week training on plant genetic resources (PGR) for a researcher (Aleppo, Cyria, 2001)

Regional training courses on conservation of apricot genetic resources in the context of the IPGRI project (Khojent, Tajikistan, 2003)

Regional training courses on joint approach to PGR management in the context of the IPGRI project (Almaty, Kazakhstan, 2003)

English language training for more than 10 young specialists (Tashkent, 2000-2004) etc.

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There are special services for conservation of agricultural genetic diversity, livestock and other

species: Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources, Scientific Research Institute of Agriculture, Scientific Research Institute of Grain Crops, State Service for Seed-Growing and Sort-Testing, Etrek Experimental Center of Subtropical Plants, "Turkmenmallary" Joint Live-Stock Association, Scientific Research Institute of Cattle-Breeding and Veterinary, "Turkmenatlary" State Association.

The main lines of activity of the Scientific Research Institute of Agriculture include the following: to create new highly productive and adapted sorts and hybrids of fruit, grain, leguminous, industrial and cereal crops using methods of modern biochemistry, biotechnology and other biological sciences; and to supply top quality seeds of higher reproductions to producers.

The main lines of activity of the Scientific Research Institute of Grain Crops include the following: selection and seed-growing of grain, forage and leguminous crops.

The main lines of activity of the State Service for Seed-Growing and Sort-Testing include the following: to organize and peform state control of agricultural plant seed-growing; certify sowing materials; to license seed-growing activity of seed-farmers; etc.

Genetic resources of domestic animals are mainly preserved on specialized farms of the Association of Livestock Companies of Turkmenistan, "Turkmenmallary," where pedigree breeding is conducted to maintain genetic diversity.

Turkmenmallary Association of Livestock Companies of Turkmenistan was established by the Presidential Decree No. PP-2084 of December 23, 1996. The main lines of activity of the Association include the following: to increase effectiveness of cattle-breeding production and stock-raising; develop scientific basis of cattle-breeding and create necessary conditions for efficient use of scientific capacity of the Institute of Cattle-Breeding and Veterinary; to develop and implement the most effective state programmes for increasing livestock production output and effectiveness; develop lease forms of organization of production; and increase livestock population on the basis of rational use of pastures, strengthening of forage reserves, increasing of forage production and adoption of scientifically founded feed rations.

There is the Presidential Decree No. 3814 of August 4, 1998 "On Improvement of Veterinary Practices in Turkmenistan" aimed to improve veterinary practices.

To preserve and maintain genetic purity of the Akhal horse breed, "Turkmenatlary" Association was established in accordance with the Presidential Decree No. 439 of October 25, 1991. Its main lines of activity include: development of horse-breeding; breeding and selection; scientific quantity and quality breed records; researches to improve breed quality; receiving and raising of offspring.

In recent years camel-breeding has been strenuously developed on the government-run and private farms. The farmers maintain the local breed of camel, "arvana," which brings good profits to the farms.

Various breeds and hybrids of meat-end-egg hens are maintained by private farms. At present there is an agreement signed by the Scientific Research Institute of Cattle-Breeding and Veterinary and TICA (Turkish Agency for Development and Cooperation) to implement a new poultry farming project.

Fishery, its regulations, effective management and rational use of fish resources are placed on the State Committee for Fishery of Turkmenistan (Goscomrybhoz). Goscomrybhoz, together with the Ministry of Nature Protection of Turkmenistan, maintains the state inventory and records of fish, and other water animals and plants, and ensures that the study, systematization and record-keeping of data of the national stock of hydrobionts are properly performed. Direct protection, control and monitoring of the country's fish resources are made by the Gosryboohrana Department of the State Committee for Fishery.

Activity of the State Committee for Fishery is regulated by the following Presidential Decrees:

Provision "On State Committee for Fishery of Turkmenistan" (No. 430 of October 8, 1991)

Provision "On Protection of Fish Stocks and Regulation of Fisheries in Territorial and Inland Waters of Turkmenistan" (No. 3647 of March 20, 1998)

Provision "On Department for Fish Protection of the State Committee for Fishery of Turkmenistan (Gosryboohrana)" (No. 3727 of June 4, 1998)

The following legislative acts were developed and adopted in order to implement policies and activities promoting conservation and sustainable use of agrobiodiversity components:

Law "On Farmers' Associations" (05.06.1995)

Law "On Farms" (28.03.1994)

Law "On Seeds" (18.06.1996).

The Law "On Selection Achievements and Protection of Selectionists' Rights" is under the Government's consideration now.

Law "On Food Security" (No. 29-11, 15.06.2000)

Land Code (2004)

Forest Biological Diversity

General

174. Has your country incorporated relevant parts of the work programme into your national biodiversity strategies and action plans and national forest programmes?	
a) No	
b) Yes, please describe the process used	X
c) Yes, please describe constraints/obstacles encountered in the process	
d) Yes, please describe lessons learned	X
e) Yes, please describe targets for priority actions in the programme of work	X

Further comments on the incorporation of relevant parts of the work programme into your NBSAP and forest programmes

The BSAP (2002) identified the national target: "*Preservation and restoration of current status of forests by 2010, on 5% of their area*", which is directly related to the main goal set by the President of Turkmenistan. The country carries out countrywide multi-purpose forestation works that would allow increasing forest-covered areas to 10 million hectares in the 21st century. Specific forest protection activities are incorporated in the NBSAP, the following among them being the most urgent:

- ? .5. 4. Identify priority areas for restoration of archa *Juniperus* forest

- ? .5.5. Conservation and restoration of biodiversity of forest-steppe mountain communities**;**

- ? .5.6. Develop activities to increase the area of natural pistachio forest**;**

- ? .5.7. Conservation and restoration of tugai relict forests along the Amudarya River as a habitat for Bukhara deer.

- Conservation of wild relatives of fruit trees and shrubs, particularly walnut (*Juglans regia*), Turkmen pear (*Pyrus turcomanica*), Turkmen apple (*Malus turkmenorum*).

- Conservation of Turkmen juniper (*Juniperus turcomanica*) and Zeravshan juniper (*Juniperus seravschanica*).

Government Regulations and Programmes reflect the prospective character of the activities for conservation and restoration of forest biodiversity:

- Presidential Decree "On Development of Horticulture and Tree Planting in Turkmenistan" (1993) was approved at the level of the Council of Agroindustrial Complex.

Programmes: "Restoration of archa (juniper) forests in Turkmenistan," "Pistachio forestation," joint project of the Geok Gushak Joint-Stock Company and Finturi Ltd. (Turkey) "Integrated Forestry Development Programme for Turkmenistan for 2001-2005" and others.

In Turkmenistan the Geok Gushak Joint-Stock Company is responsible for the forestry management. The Geok Gushak principal goals and objectives are as follows:

- Growing and sale of planting stock of trees and shrubbery, as well as ornamental plant varieties;
- Forest protection activities in the state forest estates of Turkmenistan and rational use of forest resources;
- Ensure conducting of scientific studies for establishing green plantations, rational use of forest resources under scientific guidance of the Ministry of Nature Protection of Turkmenistan;
- Forest products manufacturing and processing.

During the period from 1970 to 1990 the lessons of forestation and restoration of forests were learned. The Turkmen juniper (archa) forest culture was established at the area of 858 hectares, and pistachio - around 10 thousand hectares. 15 thousand hectares of irrigated lands were planted with field-protection forest belts. Forest cultures (saxaul) were planted in the Karakum sands to cover an area of 680 thousand hectares.

Box LXVII.

Please indicate what recently applied tools (policy, planning, management, assessment and measurement) and measures, if any, your country is using to implement and assess the programme of work. Please indicate what tools and measures would assist the implementation.

Measures to implement and assess the programme of work

The main directions of the current forest policy of Turkmenistan may be described as follows:

- Effective protection of existing forests and their biological diversity;
- Restoration of degraded forest resources applying advanced technology;
- Countrywide multi-purpose afforestation;
- Encourage involvement of governmental, commercial, non-governmental and other organizations in forest plantation and maintenance works of the forest-planted areas.

In regard to the forestation the country emphasizes the importance of planting forest-belts

around cities and settlements, protecting engineering structures and croplands from desertification, controling river banks to prevent destruction, etc. No less important is improvement of methods of growing and increasing of sapling and seedling production in forest nurseries.

In pursuance of the main governmental goal and national target, since 1998 the works have been carried out near Ashgabat City in the foothills of Kopetdag to plant a unique forestland in accordance with the Presidential Decree "On Development of Horticulture and Tree Planting in Turkmenistan."

Today the forest park area makes up more than 24 thousand hectares. About 30 million of saplings and seedlings of almost 100 species of conifers, deciduous trees and shrubs have been planted.

Analysis of the plantations' growth and development shows that the choice of species meets the forest growing conditions and therefore the plantations' land-improvement effect makes positive environmental and climatic impact. Advanced agrotechnical methods have been practiced concurrently with the forest zone planting. Thus, an effective water-saving method of drip irrigation has been widely introduced. Forest fire prevention methods and pest and disease control methods have also been developed.

Some ministires and agencies have established forestry enterprises in order to successfully fulfill their tasks in the forest zone. By now the growth of density of wild animals and birds population has been noted for some forest zone sectors. Due to regular irrigation, watering conditions and forage reserves for wild animals have improved. It makes an additional capacity for conservation of biodiversity in forest ecosystems. Forestries are fully self-financing which is the most important constraining factor that impedes forestry growth capacity.

Box LXVIII.

Please indicate to what extent and how your country has involved indigenous and local communities, and respected their rights and interests, in implementing the programme of work.

The country considers the issues of involving indigenous and local communities in implementing the programme of work only at the planning level in the context of the BSAP activities. Thus, there are planned activities to increase public participation in conservation and sustainable use of forest resources (?. 4.):

?.4.1.- Direct ecological education activities in secondary schools to promote rules on forest utilization;

?.4.2.- Establish an experimental site in the mountains for strengthening the interaction between people and forest resources;

?.4.3.- Encourage involvement of the population in developing a forest resourse use strategy.

In the light of impelementation of the UN Convention to Combat Desertification and in the frame of the GTZ pilot project, the process of involving local population in conservation and restoration of forest plants is carries out.

Ubiquitous gasification and free gas utilization contribute to the natural renewal of montane and desert forests.

Box LXIX.

Please indicate what efforts your country has made towards capacity building in human and capital resources for the implementation of the programme of work.
At present all human and technical resources related to forestry are concentrated in the Geok Gushak Joint Stock Company. The Geok Gushak system includes 14 forestries with 1400 workers. Among engineering personnel there are employees with special forest-related education, as well as agronomists, geographers, biologists and other specialists. There is an active process of establishing forestry units under sectoral ministries. Thus, for example, the forestry unit of the oil-and-gas industrial complex employs more than 600 people with annual wage fund of 13.103.2 thousand Manats (2495.8 thousand US Dollars). The forestry unit maintains 2323 hectares of forest area. The energy complex also establishes its own forestry to maintain the forest zone.

Box LXX.

Please indicate how your country has collaborated and cooperated (e.g., south-south, north-south, south-north, north-north) with other governments, regional or international organizations in implementing the programme of work. Please also indicate what are the constraints and/or needs identified.
In Turkmenistan international cooperation in the forestry sphere is still in the making stage. The objectives of the cooperation are aimed at development of long-term prospects for national forest programmes and promotion of the regional interaction of Turkmenistan. Memorandum of mutual cooperation between Turkmenistan and Turkish Republic in the spere of forestry was signed in 1997. Turkmenistan participates in the prospective study of forests in Western and Central Asia FOWECA, FAO initiative. Nevertheless, the issue of necessity for closer cooperation at the regional and international levels remains important.

Expanded programme of work on forest biological diversity

Programme element 1 – Conservation, sustainable use and benefit-sharing	
175. Is your country applying the ecosystem approach to the management of all types of forests?	
a) No (please provide reasons below)	
b) No, but potential measures being identified (please provide details below)	
c) Yes (please provide details below)	X

Comments on application of the ecosystem approach to management of forests (including effectiveness of actions taken, lessons learned, impact on forest management, constraints, needs, tools, and targets).
The ecosystem approach to the management of forests is applied only in SPA. There are 8 nature reserves in the country which promote conservation of the forest ecosystems:

- Syunt-Hasardag: montane forest ecosystems, unique montane forest communities of Turkmen maple (*Acer turcomanica*) with relict mandrake (*Mandragora turcomanica*) and wild relatives of fruit plants such as apple-trees, pomegranate, pear, grapes and others.
- Kopetdag: montane forest ecosystems (mainly of Turkmen juniper *Juniperus turcomanica* endemic of Central Kopetdag). Mountain forests cover an area of 21.8 thousand ha.
- Badkhyz: an ecosystem of submontane elevation with unique pistachio woodland covering an area of 76 thousand ha.
- Repetek: sand deseert ecosystems. A sample forest ecosystem of black saxaul *(Haloxylon aphillum)* is preserved in the area of 2 thousand hectares.
- Koitendag: a montane forest ecosystem mainly of Zeravshan juniper *(Juniperus seravschanica)* of Southern Pamir-Alai.
- Amudarya state nature reserve includes an ecosystem of tugai forests in the flood-lands of the Amudarya River occurying an area of 48.5 thousand hectares, 5 thousand ha of them being forest-covered, mainly of poplars (*Populus pruinosa* and *Populus euphratica*).
- Kaplankyr: a desert ecosystem with rare species of trees and shrubs – saltwort (*Salsola chirensis*), acacia (*Ammodendron karelinii*), *Gypsophila antoninae*, and natural saxaul woodlands.

In mountain ecosystems there have been identified 122 rare communities, threatened and subject to protection, which include 16 valuable species of trees and bushes. They are walnut, pistachio, pomegranate, wild vine, Zizyphus, oriental plane-tree, Turkmen and Zeravshan junipers, Turkmen maple, hawthorn (*Crataegus pontica)*, Turkmen pear, rowan-tree *(Sorbus graeca)*, maple *(Acer pubescens)*, Bukhara almond-tree, Regel pear *(Pirus regeliana).*

176. Has your country undertaken measures to reduce the threats to, and mitigate its impacts on forest biodiversity?

Options	X	Details
a) Yes		Please specify below the major threats identified in relation to each objective of goal 2 and the measures undertaken to address priority actions

		Main threats: - overgrazing; - industrial construction activity; - illegal (unauthorized) felling; - climate change; - fires and natural disasters; - agricultural (farming) developing. Due to industrial and agricultutural development, habitats for various forest flora and faun species get reduced. Habitat loss is caused by both man-made (anthropogenic) reasons (ploughing, changing of hydrological regime, over-grazing, felling of trees and shrubbery, large construction building, mining, etc.) and natural causes (climate change, drought, fires, and natural disasters). One might say that today the most significant threats to forest biodiversity in Turkmenistan are over-consumption and reduction of habitats. Over-consumption (felling of trees and shrubbery and overgrazing) causes forest degradation and weakening of natural regeneration. For the majority of plant species (junipers, maples, pistachios and others) prevailing threat factors are felling and overgrazing (64.4%). - decreased flow of small rivers and streams, washing-off their banks with all forest plants by mudflows, floods; deflation (23.7%); - flower-picking, gathering bulbs, tubers and whole plants (12.8%); - eating and trampling of tubers, roots and whole plants by wild animals; fires; mass destruction of seeds by plant pests (9.9%). - low seed reproduction (5.9%): Turkmen juniper *(Juniperus turcomanica),* Turkmen pear and pear Boissier (Pyrus *turkomanica, and P. boissieriana),* pomegranate *(Punica granatum),* Turkmen apple-tree *(Malus turkmenorum).*
b) No		Please provide reasons below

Further comments on measures to reduce threats to, and mitigate the impacts of threatening processes on forest biodiversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

The existing national programme for forest biodiversity conservation includes such activities as scientific research, measures for in-situ and ex-situ conservation of species and habitats, prevention of alient species invasions, biodiversity information system, ecological education and public awareness, monitoring system, and training of personnel. In-situ conservation of species includes protective and recovering activities (where biodiversity has been significantly damaged).

Protection: In-situ conservation of species in SPA; regulation of explotable species; prevention of hybridization with alien species; protection from anthropogenic impacts, natural disasters, pests and diseases.

Total SPA's area is 1 916,01 hectares, 104 000 ha of them forest-covered. Apart from that, pro-

tected areas of forest biodiversity are Ashgabat Botanical Garden, National Independence park and forest zone around Ashgabat (more than 24.000 hectares).

The number of successful recovering activities of in-situ conservation of species and habitats includes: 1000 hectare area of juniper (archa) forestation of Kopetdag mountains and planting of pistachio woodland in the territory of Badkhyz reserve (more than 4000 ha), Meana-Chacha game-reserve and protected area of Kopetdag reserve.

Activities for ex-situ conservation of biodiversity are carried out by the country research-and-production institutions of the Ministry of Nature Protection, Ministry of Agriculture, Ministry of Education, Geok Gushak Joint-Stock Company and others.

To prevent the threat of extinction or reduction of some species of forest biodiversity their status has been changed. The most vulnerable species have been included into the Red Data Book of Turkmenistan (1999). They are Turkmen juniper *(Juniperus turcomanica),* walnut *(Juglans regia),* Afgan fig *(Fikus afghanistanica),* Greek rowan *(Sorbus graeca),* Persian rowan *(S. Persica,)* Turkestan rowan *(S. turkestanica),* Turkmen and Boissier pears *(Pirus turkomanica, P. boissieriana),* Turkmen apple *(Malus turkmenorum),* pomegranate *(Punica granatum),* and Badkhyz pistachio *(Pistacia badghysi).*

177. Is your country undertaking any measures to protect, recover and restore forest biological diversity?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No		Please provide reasons below

Further comments on measures to protect, recover and restore forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

In Turkmenistan the measures to protect, recover and restore forest biodiversity are carried out by scientific, manufacturing, educational and research institutions:

- Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources has collected a unique genepool bank of 1937 samples of wild relatives of cultivated fruit species.

- Etrek Research and Production Experimental Center of Subtropical Plants conducts production tests of growing olives, Zizyphus, citrus plants, date palm-trees and other species.

- Ashgabat Botanical Garden's collection includes 1200 species of trees and bushes, among them highly ornamental arboreal exotics (pine-tree, juniper, cypress), relict, endemic and endangered species of local forest biodiversity.

- National Institute of Desert, Flora and Fauna has a unique herbarium of local arboreous and shrubbery plants.

- Turkmenistan's forestries grow up to 20 million saplings and seedlings of forest species

annually. They are mainly local species: mulberry (*Morus*), poplar (*Populus*), platan (*Platanus*), vines (*Vitis*), almond (*Amygdalus*), pomegranate (*Punica*), Turkmen juniper (*Juniperus*) and others.

- In Turkmenistan's nature reserves nurseries have been established to grow rare and threatened species of plants, among them forest plants such as forest juniper *(Juniperus turcomanica, J.seravschanica),* almond (*Amygdalus communis*), pistachio (*Pistacea vera*), "dagdan-agach" (*Celtis caucasica*), platan (*Platanus orientalis*), and others.

178. Is your country undertaking any measures to promote the sustainable use of forest biological diversity?

Options	X	Details
a) Yes		Please specify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below
		Measures to promote sustainable use of forest biological diversity are at the planning stage. NBSAP includes several activities (? .2.1, ? .2.2, ? .2.3) to promote sustainable use of montane forests (? .2.).

Further comments on the promotion of the sustainable use of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

179. Is your country undertaking any measures to promote access and benefit-sharing of forest genetic resources?

Options	X	Details
a) Yes		Please specify priority actions in relation to each objective of goal 5 and describe measures undertaken
b) No	X	Please provide reasons below
		At the planning stage in NEAP and BSAP.

Further comments on the promotion of access and benefit-sharing of forest genetic resources. (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets)

Programme element 2 – Institutional and socio-economic enabling environment		
180. Is your country undertaking any measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing?		
Options	**X**	**Details**
a) Yes		Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below
		The country has just made the first steps to establishing institutional and legislative foundation which would allow, as the enabling organizational environment enhances, developing a national forest programme in future.
Further comments on the enhancement of the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

181. Is your country undertaking any measures to address socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity?		
Options	**X**	**Details**
a) Yes		Please identify priority actions in relation to each objective of Goal 2 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below
		Under consideration
Further comments on review of socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

182. Is your country undertaking any measures to increase public education, participation and awareness in relation to forest biological diversity?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities BSAP (2002) Strategy ?: "Ecological education and public awareness" provides for Activity ?.4. – Increase public participation in conservation and sustainable use of forest resources (?.4.1; ?.4.2; ?.4.3.).
b) No		Please provide reasons below A specific forest programme is not available. NBSAP in general (?.3.).

Further comments on measures to increase public education, participation and awareness in relation to forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Programme element 3 – Knowledge, assessment and monitoring

183. Is your country undertaking any measures to characterize forest ecosystems at various scales in order to improve the assessment of the status and trends of forest biological diversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below Under consideration

Further comments on characterization of forest ecosystems at various scales (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

184. Is your country undertaking any measures to improve knowledge on, and methods for, the assessment of the status and trends of forest biological diversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 2 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below
		At the planning stage (BSAP, NEAP).

Further comments on improvement of knowledge on and methods for the assessment of the status and trends (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

185. Is your country undertaking any measures to improve the understanding of the role of forest biodiversity and ecosystem functio ning?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below

Further comments on the improvement of the understanding of the role of forest biodiversity and ecosystem functioning (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

At the planning stage (BSAP, NEAP).

186. Is your country undertaking any measures at national level to improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biodiversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below

Further comments on the improvement of the infrastructure for data and information management (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Unavailability of funds, government-approved specific programmes and institutions.

Box LXXI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Turkmenistan demonstrates political will and governmental support for forestation activities.

The forest/park zone planted in the foothills of Kopetdag near the capital city deserves special attention. Planting of this unique woodland zone began in 1998 in compliance with the Presidential Decree No. 3784 dated July 22, 1998 "On Creation of a Park Zone in the Footfills of Kopetdag." That was a logical continuation of the Presidentail Decree "On Development of Horticulture and Tree Planting in Turkmenistan," which provided for restoration of good popular traditions of planting trees to make their native land buried in verdure.

Almost all sectors of economy were mobilized to plant trees in the forest zone at the foothills of Kopetdag. Ministries and agencies purchased planting stock at their own expense and organized planting and maintenance by their own strength in accordance with the recommendations developed by the Ministry of Nature Protection of Turkmenistan.

Today the forest area makes up more than 24 thousand hectares. About 30 million of saplings and seedlings of almost 100 species of conifers, deciduous trees and shrubs were planted.

During the last five years 25 million trees have been planted in five provinces of Turkmenistan. These are mainly greenbelts around provincial centers (in velayats and etraps), green zones near industrial enterprises and forest shelter-belts along highways and railroads.

Analysis of the plantations' growth and development shows that the choice of species meets the forest growing conditions and therefore the plantations' land-improvement effect makes positive

environmental and climatic impact. Advanced agrotechnical methods have been practiced concurrently with the forest zone planting. Thus, an effective water-saving method of drip irrigation has been widely introduced. Forest fire prevention methods and pest and disease control methods have also been developed.
Some ministires and agencies have established forestry enterprises in order to successfully fulfill their tasks in the forest zone. By now the growth of density of wild animals and birds population has been noted for some forest zone sectors. Due to regular irrigation, watering conditions and forage reserves for wild animals have improved. It makes an additional capacity for conservation of biodiversity in forest ecosystems. Apart from the forestation measures described above, the Government shows continuous concern to the conservation, recovery and sustainable use of forests.

Thus, the NEAP includes concrete activitites to protect juniper and wild relatives of fruit trees and shrubs in order to implement one of its main objectives "Wildlife management." The NBSAP national objective "To preserve the existing state of the forests and restore 10% of their area by the end of 2010" is embodied in 35 actions and 110 activities, such as to preserve and restore forests that are most valuable in ecological and economic regards: saxaul, juniper and nuciferous (pistachio, walnut) woodlands.

Biological diversity of dry and sub-humid lands

187. Is your country supporting scientifically, technically and financially, at the national and regional levels, the activities identified in the programme of work? (decisions V/23 and VII/2)	
a) No	
b) Yes (please provide details below)	X

Further comments on scientific, technical and financial support, at the national and regional levels, to the activities identified in the programme of work.

In Turkmenistan among arid and sub-humid lands the plain-desert ecosystem (80% of the country area) prevails over montane, riverine, lakeside and marine ecosystems. The National Programme *"Strategy of Economic, Political and Cultural Development of Turkmenistan for the Period up to 2020"* includes problems indirectly related to the fulfillment of the country's commitments to the Convention on Biological Diversity and Paneuropean Strategy.
During a period of more than 70 years of active scientific activity of researches of a wide variety of specialities and all-around governmental support, the country had accumulated sufficiently large factual material on biodiversity and its ecosystems. It allowed the country to conduct "The Country Study on the Status of Biodiversity" (1999) and prepare the first national report "Turkmenistan: the Status of Biological Diversity" (2002). All floral and faunal data are published and publicly available. An electronic version of the floral and faunal database is unavailable. Furthermore, the country has prepared a national review "Sustainable Development of Turkmenistan. Rio+10" in the context of the Summit on sustainable development.

The key ecosystems' biodiversity were identified: Karakum and Sundukly deserts and, at the regional level, North-Western, South-Western and Central Kopetdag, Koitendag, Boshoy Balkhan, Badkhyz mountains in the community size (genus, families, systems, etc.) that allowed to outline biogeographical zoning. Mapping of desertification process based on aerospace photosurvey materials allowed conducting a global assessment of the dry land degradation and preparing the desertification map of Turkmenistan (1981). The national action programme to combat desertification was developed (1997), and will be revised in the closest future. Various manifestations of progressive degradation covered 50% of the total area, including degradation

of the growing surface. The leading mountain ecosystems (juniper woods and montane steppes) within the biodiversity balance have partially degraded or are used at full stretch without restoration. The country has 8 national nature reserves (one biosphere reserve among them), 14 game-reserves, 250 natural monuments, dendrological parks, one botanical garden and three health resorts.

The Intergovernmental Commission for Sustainable Development (ICSD) and the State Committee (SC) for implementation Turkmenistan's commitments to UN environmental programmes and conventions serve as a working mechanism.

Today the National Institute of Desert, Flora and Fauna of the Ministry of Nature Protection is the country's scientific center of biodiversity studies. The institute applied studies are funded from the state budget. The programme document for restoration of endangered plant and animal populations is the Red Data Book of Turkmenistan (1999) which includes 109 species of plants and 152 species of animals. The country has a developed legislation the normative acts of which are aimed at preservation of all species of plants and animals. The fundamental laws: *"On Nature Protection"* (1991), "*On Protection and Rational Use of Flora"* (1993) and "*On Protection and Rational Use of Fauna"* (1997) support the country's environmental commitments reflected in the Constitution of Turkmenistan (1992).

Turkmenistan has started introduction of a mechanism of long-term regional cooperation and coordination in the field of conservation and sustainable use of biodiversity in the context of Paneuropean Strategy of Biodiversity Conservation. The regional project *"ECONET Projection for Long-Term Biodiversity Conservation in Central Asia"* (UNEP/GEF/WWF, 2003-2005) is almost completed. The ECONET programme of work is aimed at integration of the network into the framework of regional and national plans for sustainable development.

188. Has your country integrated actions under the programme of work of dry and sub-humid lands into its national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD? (decisions V/23, VI/4 and VII/2)

a) No	
b) Yes (please provide details below)	X

Further comments on actions under the programme of work of dry and sub-humid lands integrated into national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD.

The national strategy and action plan on biodiversity conservation (BSAP, 2002) includes measures aimed at conservation of biodiversity of dry and sub-humid lands in Turkmenistan. The target to preserve biodiversity has also been integrated into President Saparmurat Turkmenbashi's National Environmental Action Plan (NEAP). However, the problem of biodiversity was not reflected in the first national action programme to combat desertification (CCD). The biodiversity problem has been partially touched upon at the agricultural sector level in "The First National Report on the Framework UN Convention on Climate Change" in Turkmenistan (first phase: 1997-2000; second phase: 2002-2003).

The NBSAP has 12 national objectives to be implemented through 55 actions and 253 activities in the limits of 14 strategic components. The National Environmental Action Plan (NEAP, 2002) presents the biodiversity problem through 6 recommended activities which basically correspond to Article 8 of the Convention: "in-situ conservation." The country has a limited capacity to address some problems contained in the Global Taxonomic Initiative.

189. Has your country undertaken measures to ensure synergistic/collaborative implementation of the programme of work between the national UNCCD process and other processes under related environmental conventions? (decisions V/23, VI/4 and VII/2)	
a) No	
b) Yes, some linkages established (please provide details below)	?
c) Yes, extensive linkages established (please provide details below)	

Further comments on the measures to ensure the synergistic/collaborative implementation of the programme of work between the national UNCCD processes and other processes under related environmental conventions.

The joint project of the Ministry of Nature Protection and UNDP, also supported by GEF, *"Turkmenistan National Capacity Self Assessment"* (2004-2006) is aimed at assessment of the national capacity and identification of obstacles and their elimination in the process of implementation of the three global environmental conventions (biodiversity, desertification and climate) in Turkmenistan. The outcomes of the UNDP project *"Institutional and human Capacity build for better environmental government"* (2005-2007) will serve as a supporting mechanism.

Conservation of the national biodiversity is a priority of the state policy. The main capacity components in the field of biodiversity are the following:

Research activities and in-situ conservation of biodiversity *(National Institute of Desert, Flora and Fauna; National nature reserves*);

Ex-situ conservation *(Ashgabat Botanical Garden under the Ashgabat City authorities (khyakimlik);*

Makhtumkuly Research and Production Experimental Center of Plant Genetic Resources; Scientific Reasearch Institute of Agriculture; Scientific Reasearch Institute of Grain Crops);

Business/market (*National Institute of Raw Drug Materials; Niyazov Agroindustrial Complex "Buyan"*);

Ecological education *(Niyazov Turkmen Agricultural University, Makhtumkuly Turkmen State University, Seidi Turkmen State Teachers' Institute, Turkmen State Medical Institute).*

The country has begun implementation of the NEAP activities aimed at improvement of environmental conditions: *"Institutional and human Capacity build for better environmental government"* (UNDP, 2005-2007)

Programme Part A: Assessment

190. Has your country assessed and analyzed information on the state of dryland biological diversity and the pressures on it, disseminated existing knowledge and best practices, and filled knowledge gaps in order to determine adequate activities? (Decision V/23, Part A: Assessment, Operational objective, activities 1 to 6)	
a) No	
b) No, but assessment is ongoing	X
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessment undertaken (please provide details below)	

Further comments on the relevant information on assessments of the status and trends and dissemination of existing knowledge and best practices.

The objective to reduce the pressures on biodiversity caused by environmental pollution has not

been literally included in the NEAP and National Action Plan to combat desertification (1997). This problem has been only partially illustrated in the projects related to the Convention on Climate Change. In the context of the GEF project *"The First National Report on the UN Framework Convention on Climate Change"* in Turkmenistan (first phase: 1997-2000; second phase: 2002-2003) an analysis of ecological fragility and vulnerability of the most important sectors of economy was made. The studies to assess the vulnerability and adaptation to the climate change, including those of some components of agrobiodiversity (alfalfa, cotton and wheat), allowed to develop a package of recommendations in the frames of the National Action Plan for implementation of preliminary activities to reduce GHG emissions; however, they are not interrelated with the specific problems of biodiversity conservation.

In the first national report "Review of Biological Diversity Status" (2002) there was a reasonably full assessment and analysis of problems related to the status of biological diversity of drylands of Turkmenistan and pressures on them. A package of actions was developed to mitigate adverse environmental impact on biodiversity.

Programme Part B: Targeted Actions

191. Has your country taken measures to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences? (part B of annex I of decision V/23, activities 7 to 9)

a) No	
b) Yes, some measures taken (please provide details below)	X
c) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences.

The strategy and action plan for biodiversity conservation has been implemented in Turkmenistan since 2002 up to 2006 (BSAP, 2002), although no additional expenses on biodiversity conservation and capacity building have not been provided in the country state budget. A certain volume of work has been done on the funds provided by international donors and, partially, through governmental financing.

The monitoring guidelines are aimed to estimate the volume of implemented activites out of 253 types of activities planned in the BSAP by the end of 2005. The BSAP types of activities are the objectives of specific sectoral programmes. The BSAP actions are distributed within 14 strategic components. Today 25 activities within 9 strategic components have been implemented to different extents. Each component reflects a relevant article of the Convention on Biological Diversity.

Targeted actions

Strategic Component ? . "In-situ conservation"

Improvement of protected areas management system in Turkmenistan (2003-2006);

ECONET projection for long-term conservation of biodiversity in Central Asia (UNEP/GEF/WWF; 2003-2005);

Important bird areas in Central Asia (IBA);

Preparation of background materials necessary to create Balhan nature reserve (set of

documents) (? .3.1.),

Preparation of background materials necessary to create Central-Karakum nature reserve (set of documents) (? .5.2.),

- The project "Conservation and sustainable use of biodiversity of global importance in Hazar reserve at the Caspian coast" (UNDP/GEF, 2006-2010) is at the starting point of implementation stage.
- The PDF "? " phase (2002-2004) of the project "Conservation of biological and landscape diversity of Kugitang mountains in Turkmenistan" (UNDP/GEF) is completed.

Implementation of the Convention and Environmental Action Plan on the Caspian Sea (2004-2004) in the CEP context;

Conservation of leopard in Kopetdag (WWF;1999-2002);

Promotion of in-situ conservation of Bukhara deer and leopard populations (WWF;2002-2006).

Promotion of in-situ conservation of Bukhara deer populations (WWF, 1999-2003);

Cheetah (WWF, 2001-2002)

ECOTOX, (IUCN, 2000);

Correlates of extinction risk for Central Asian biodiversity (INTAS, 2001-2003);

Conservation of kulan in Turkmenistan (2001-2003; WWF)

? . Ex-situ conservation

In-situ/on farm conservation of agrobiodiversity in Central Asia (UNEP/GEF/IPGRI, 2002-2004);

? . Sustainable use

Artificial breeding of sturgeon species and caviar production (2005-2006; Florida Sturgeon Engineering; USA)

? . Incentives

Sustainable development of the Caspian coastal communities – Azerbaijan, Kazakhstan, Russian Federation, Turkmenistan (2004-2006, TACIS-EU) in the CEP context

G. Scientific research

Study of biology and conservation of imperilled sturgeon species Pseudoscaphirhynchus in Central Asia (CRDF, 2004-2005)

Sustainable development of the Caspian coastal communities – Azerbaijan, Kazakhstan, Russian Federation, Turkmenistan (2004-2006, TACIS-EU) in the context of the National Action Plan to Combat Desertification

Assessment and monitoring of pasture degradation process using remote control methods in Turkmenistan (Ben Gurion University, Israel, 2003-2006)

Assessment and monitoring of land degradation due to salinization and testing new phytoreclamation methods in Turkmenistan (Ben Gurion University Israel, 2001-2005)

Collection, description and exchange of pistachio germplasm (Ben Gurion University Israel, 1999-2004)

H. Information accessibility and exchange

Conservation of biodiversity in Turkmenistan (GEF, 2005-2007)

I. Cooperation

Agreements of Cooperation between the Ministry of Agriculture of Turkmenistan and ICARDA International Center in the field of agricultural sciences (2005)

Memorandum of Understanding on conservation, restoration and sustainable use of saiga and curlew (*Numenius tenuirostris vieillot*).

J. Impact assessment.

Regional Environmental Action Plan for Central Asia (ICSD, 2001)

Institutional and human Capacity build for better environmental government (UNDP, 2005-2007).

Turkmenistan: national capacity self assessment (UNDP/GEF; 2004-2006)

Creation of operational control of navigation canal depth and promotion of ecological security in Turkmenbashi Bay of the Caspian Sea (2002-2003; GEF) in the CEP context

L. Legislation

Presidential Decree "On Approval of Rules for Protection of Shoaling Waters of Turkmenistan from Watercraft Pollution (Hull Fouling)" (2005).

192. Has your country taken measures to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work?	
a) No	
b) Yes, some measures taken (please provide details below)	X
c) Yes, comprehensive measures taken (please provide details below)	
d) Yes, all identified capacity needs met (please provide details below)	

Further comments on measures taken to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work.

Box LXXII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

The country has conducted "The Country Study on the Status of Biodiversity" (1999) and prepared the first national report "Turkmenistan: the Status of Biological Diversity" (BSAP, 2002). The BSAP has provided a reasonably full assessment and analysis of problems related to the status of biological diversity of drylands of Turkmenistan and pressures on them. All floral and faunal data have been published and publicly available. The country has prepared a national review "Sustainable Development of Turkmenistan. Rio+10" in the context of the Summit on sustainable development.

Biodiversity of key ecosystems (desert and mountain) and dry and humid lands was identified; and biogeographical zoning was made. At the end of the last century a global assessment of the dry land degradation based on aerospace photosurvey materials was conducted, and the desertification map of Turkmenistan (1981) and President Saparmurat Turkmenbashi National Environmental Action Plan (NEAP, 2002) were developed. The first national action programme to combat desertification was developed (1997), and will be revised in the closest future to include issues of dry land biodiversity. The country has 8 national nature reserves (one biosphere reserve among them), 14 game-reserves, 250 natural monuments, dendrological parks, one botanical garden and three health resorts.

The Intergovernmental Commission for Sustainable Development (ICSD) and the State Committee (SC) for implementation Turkmenistan's commitments to UN environmental programmes and conventions serve as a working mechanism. The National Environmental Action Plan (NEAP, 2002) presents the biodiversity problem through 6 recommended activities which basically correspond to Article 8 of the Convention: "in-situ conservation." The country has begun implementation of the NEAP activities aimed at improvement of environmental conditions: "*Strengthening of Institutional and Human Potential for Improvement of Nature Management*" (UNDP, 2005-2007).

The programme document for restoration of endangered plant and animal populations is the Red Data Book of Turkmenistan (1999) which includes 109 species of plants and 152 species of animals. The country has a developed legislation the normative acts of which are aimed at preservation of all species of plants and animals.

Turkmenistan has started introduction of the mechanism of long-term regional cooperation and coordination in the field of conservation and sustainable use of biodiversity in the context of Paneuropean Strategy of Biodiversity Conservation. Upon completion of regional and national projects an environmental network will be created on the basis of integration in the context of regional and national palns for sustainable development. However, the problem of biodiversity was not reflected in the first national action programme to combat desertification (CCD). The biodiversity problem has been partially touched upon at the agricultural sector level in "The First National Report on the Framework UN Convention on Climate Change" in Turkmenistan (first phase: 1997-2000; second phase: 2002-2003).

The NBSAP has been developed (2002). The monitoring guidelines are aimed to estimate the volume of implemented activites, planned in the BSAP, by the end of 2005. Today 25 activities within 9 strategic components have been implemented to different extents. Each component reflects a relevant article of the Convention on Biological Diversity. A certain volume of work has been done on the funds provided by international donors and, partially, through governmental financing. The country has a limited capacity to address some problems contained in the Global Taxonomic Initiative.

Mountain Biodiversity

Programme Element 1. Direct actions for conservation, sustainable use ad benefit sharing	
193. Has your country taken any measures to prevent and mitigate the negative impacts of key threats to mountain biodiversity?	
a) No	
b) No, but relevant measures are being considered	
c) Yes, some measures taken (please provide details below)	X
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to prevent and mitigate the negative impacts of key threats to mountain biodiversity

The largest number of floral and faunal species is concentrated in mountainous regions of Turkmenistan which cover 1/5 of its territory. 2500 species of vascular plants, which make up 83.3% of the country's flora, grow in mountains and foothills, while in the Karakum desert covering 80% of the country's total area there are 757 species, or 25.2% of flora. Mountainous Turkmenistan is especially rich with endemic plants (18-20%), showing the highest endemic degree among montane regions of Central Asia.

Key threats to mountain biodiversity of Turkmenistan are:

- unauthorized felling and picking of wild plant species;

- poaching;

- overgrazing

- fires, natural disasters (mudflows)

NEAP provides for actions and activities to prevent threats and promote conservation and sustainable management of mountain biodiversity in Turkmenistan:

- establish Balhan nature reserve in the Bolshoi Balhan mountains;

- establish national parks in mountainous regions of South-Western and Central Kopetdag (Makhtumkuly and Archabil etraps), Koitendag (Pamir-Alai mountain spurs) and foothills of Serhetabad etrap.

BSAP defines actions aimed at conservation, sustainable use and restoration of the most important mountain ecosystems:

- identify areas for urgent restoration of juniper woodlands;

- ensure conservation and restoration of montane forest-steppe communities' biodiversity;

- expand areas of natural pistachio woodlands;

- ensure conservation of biological and landscape biodiversity of Kugitang mountains.

194. Has your country taken any measures to protect, recover and restore mountain biodiversity?	
a) No	
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	X
d) Yes, many measures taken (please provide details below)	

Further comments on the measures taken to protect, recover and restore mountain biodiversity

To preserve, conserve and restore mountain biodiversity, nature reserves have been established in all montane areas of Turkmenistan:

- Kopetdag reserve: Central and Eastern Kopetdag mountains (1976); area: 49.7 thousand hectares.

- Syunt-Hasardag reserve: South-Western Kopetdag mountains (1977); area: 30.3 thousand hectares.

- Badkhyz reserve: foothills of Parapamise (1941); area: 87.7 thousand hectares.

State programmes (measures) for mountain biodiversity conservation are mainly directed towards forest fire control, protection against unauthorized felling and picking wild-growing plants, overgrazing and poaching.

At present the following projects on mountain biodiversity conservation are implemented with the support from international organizations:

- Conservation of leopard (*Panthera pardus*) (WWF, since 1999)

- Conservation of kulan (*Equus hemionis*) (WWF, 2001-2006)

The project "Conservation of Biodiversity of Koitendag Mountains in Turkmenistan" is at the development and approval stage.

195. Has your country taken any measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems?	
a) No	X
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems

196. Has your country taken any measures for sharing the benefits arising from the utilization of mountain genetic resources, including preservation and maintenance of traditional knowledge?	
a) No	X
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	

Further comments on the measures for sharing the benefits arising from the utilization of mountain genetic resources

Programme Element 2. Means of implementation for conservation, sustainable use and benefit sharing

197. Has your country developed any legal, policy and institutional framework for conservation and sustainable use of mountain biodiversity and for implementing this programme of work?	
a) No	
b) No, but relevant frameworks are being developed	
c) Yes, some frameworks are in place (please provide details below)	?
d) Yes, comprehensive frameworks are in place (please provide details below)	

Further comments on the legal, policy and institutional frameworks for conservation and sustainable use of mountain biodiversity and for implementing the programme of work on mountain biodiversity.

In Turkmenistan the legislative basis for biodiversity conservation in general, and mountain biodiversity in particular, is the Constitution of Turkmenistan, as well as laws and standard legal acts:

- "On Nature Protection" (1991)
- "On Protection and Rational Use of Flora (1993) and Fauna (1997)"
- "On State Specially Protected Natural Areas" (1992)
- Land Code (1991) and Forest Code (1993)
- "On Measures for Conservation and Use of Karlyuk Caves and Other Natural Monuments of Fauna in Kugitang "(1992)
- "On Creation of a Forest/Park Zone in the Foothill of Kopetdag" (1998) and others.

The government body responsible for conservation and sustainable use of mountain biodiversity is the Ministry of Nature Protection of Turkmenistana and its subdivisions.

Apart from that, there are research-and-production organizations and institutions which are also involved in preservation and study of mountain biodiversity.

- (see response to item 177).

198. Has your country been involved in regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity?	
a) No	
b) No, but some cooperation frameworks are being considered	
c) Yes (please provide details below)	?

Further information on the regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity

Modern development of Turkmenistan is characterized by the efforts to integration in the Cetral-Asian Region. Common ecological problems of the integrated nature region promote adoption of joint and agreed actions from all countries of Central Asia (CA). Cooperation of Turkmenistan with other CA countries is also realized in the framework of the ISDC activities, where with support of UNEP a Regional Action Plan on Environment Protection has been developed and approved. This Action Plan includes aspects related to mountain ecosystems. In 2001 expediency of establishing a Regional Mountain Center (RMC) was substanciated and an Interim Working Group was formed to develop a RMC Charter and other foundation documents.

Programme Element 3. Supporting actions for conservation, sustainable use and benefit sharing

199. Has your country taken any measures for identification, monitoring and assessment of mountain biological diversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for identification, monitoring and assessment of mountain biodiversity

Monitoring and assessment of mountain biodiversity are carried out at the specially protected areas. The primary source of information on the status of biodiversity is annual reports of the state nature reserves, "Nature Chronicles." In specialized institutes and nature reserves of Turkmenistan, on the basis of long-term studies and observations, basic scientific methodologies (recommendations) for monitoring biodiversity of some types of ecosystems, including mountain ecosystems, were created.

One of the elements of the current monitoring system is the Red Data Book of Turkmenistan (1985, 1999) and archives and reports of the Ministry of Nature Protection, relevant institutions and departments of Turkmenistan.

200. Has your country taken any measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	?
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity

Turkmenistan has built capacity for scientific research in mountainous areas where there are 3 nature reserves:

- Koitendag reserve (1986) is located on the western macro-slope of Koitendag mountain ridge in Pamir-Alai mountain system. Karlyuk, Hojaburjibelent and Hojapil game-reserves have been established for protection of the unique caves and conservation of juniper woods and rare species of plants and animals.
- Kopetdag reserve (1976) occupies an area in Central Kopetdag. There are functioning Kalinin and Meana-Chacha game-reserves.
- Syunt-Hasardag reserve (1978) is in the dry subtropics of the South-Western Kopetdag. Syunt-Hasardag game-reserve was established in 1990. Their main objective is conservation of the global genepool of mountain biodiversity.

The problems of biodiversity conservation are studied in the research departments of the reserves which conduct long-term perennial studies of the country's mountain ecosystems. By now under the joint MNP/UNDP project all research departments of the reserves have been supplied with computer equipment. Unfortunately, due to some reasons the reserves' e-mail works poorly which impedes access to informational systems and somewhat lowers the level of work of the research departments.

More extensive scientific research of mountain diversity is made by the NIDFF (Plant Resources Laboratory – Useful Plants of Central Kopetdag, 1998-2001; Useful Plants of Eastern Kopetdag, 2002-2005).

201. Has your country taken any measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems

Within the BSAP Strategy ? . "Sustainable use" under Action ? .2 "Promote sustainable utilization of montane forests" the following activities are foreseen: (? .2.1) – Develop and implement a package of activities in forestry and sustainable use of forest resources; (? .2.2.) – Provide lo-

gistical support for creation of a pistachio tree nursery (basis for matrix planting of pistachio trees); (? .2.3.) – Disseminate international experience of forest restoration in degraded lands.

Phase PDF "A" of the project "Conservation of biological and landscape diversity of Kugitang mountains in Turkmenistan" (UNDP/GEF; 2002-2004) was completed and a project proposal for GEF funding has been prepared (BSAP ? .1.10. /? .5.10.). Partial supply of computer equipment was provided to Kopetdag (? .1.6.), Syunt-Hasardag (? .1.7.) and Koitendag (? .1.10.) reserves.

Besides that, in the context of the implemented projects there have been studies of the grafting technologies and optimal conditions for growing pistachio trees in the virgin lands of the submontane plain of Kopetdag.

Box LXXIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Outcomes

Turkmenistan demonstrates political will and governmental support for forestation activities.

The forest/park zone planted in the foothills of Kopetdag near the capital city deserves special attention. Planting of this unique woodland zone began in 1998 in compliance with the Presidential Decree No. 3784 dated July 22, 1998 "On Creation of a Park Zone in the Footfills of Kopetdag." That was a logical continuation of the Presidentail Decree "On Development of Horticulture and Tree Planting in Turkmenistan," which provided for restoration of good popular traditions of planting trees to make their native land buried in verdure.

Almost all sectors of economy were mobilized to plant trees in the forest zone at the foothills of Kopetdag. Ministries and agencies purchased planting stock at their own expense and organized planting and maintenance by their own strength in accordance with the recommendations developed by the Ministry of Nature Protection of Turkmenistan.

Today the forest area makes up more than 24 thousand hectares. About 30 million of saplings and seedlings of almost 100 species of conifers, deciduous trees and shrubs were planted.

During the last five years 25 million trees have been planted in five provinces of Turkmenistan. These are mainly greenbelts around provincial centers (in velayats and etraps), green zones near industrial enterprises and forest shelter-belts along highways and railroads.

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Such pace of tree-planting during a short time period and with high root-taking rate significantly exceeds paces of work done in the Soviet time. Thus, in 1970-1990 only 15 thousand hectares of field-protection forest were planted while green spaces around cities and towns were not practically made.

Analysis of the plantations' growth and development shows that the choice of species meets the forest growing conditions and therefore the plantations' land-improvement effect makes positive

environmental and climatic impact. Advanced agrotechnical methods have been practiced concurrently with the forest zone planting. Thus, an effective water-saving method of drip irrigation has been widely introduced. Forest fire prevention methods and pest and disease control methods have also been developed

Some ministires and agencies have established forestries in order to successfully fulfill their tasks in the forest zone. By now the growth of density of wild animals and birds population has been noted for some forest zone sectors. Due to regular irrigation watering conditions and forage reserves for wild animals have improved. It makes an additional capacity for conservation of biodiversity in forest ecosystems. Apart from the forestation measures described above, the Government shows continuous concern about conservation, recovery and sustainable use of forests.

Thus, the NEAP includes concrete activitites to protect juniper and wild relatives of fruit trees and shrubs in order to implement one of its main objectives "Wildlife management." The NBSAP national objective "To preserve the existing state of the forests and restore 10% of their area by the end of 2010" is embodied in 35 actions and 110 activities, such as to preserve and restore forests that are most valuable in ecological and economic regards: saxaul, juniper and nuciferous (pistachio, walnut) woodlands.

E. OPERATIONS OF THE CONVENTION

202. Has your country actively participated in subregional and regional activities in order to prepare for Convention meetings and enhance implementation of the Convention? (decision V/20)	
a) No	
b) Yes (please provide details below)	X

Further comments on the regional and subregional activities in which your country has been involved.

Turkmenistan actively participates in implementation of projects in the context of the UN Convention on Biological Diversity:

- Conservation of biodiversity of Kugitang mountains in Turkmenistan, UNDP/GEF, 2002-2004, Phase A;
- In-situ/on –farm conservation of agrobiodiversity in Central Asia, UNEP/GEF/IPGRI, 2002 –2004, Phase B;
- Conservation of Bukhara deer, leopard and kulan in specially protected areas, WWF, 2002-2005;
- Improvement of protected area management system in Turkmenistan, UNDP, 2003-2005;
- ECONET projection for long-term conservation of biodiversity in Central Asia, UNEP/GEF/WWF regional project, 2003-2005.
- Institutional capacity assessment and improvement of biodiversity information management, UNDP/GEF, 2005. (BSAP Phase 2).
- Turkmenistan: national capacity self assessment. UNDP/GEF, 2004-2006.
- Turkmenistan NEAP implementation support, OSCE, 2004.
- Capacity building for quality greenhouse gas inventory. GEF/Swiss Government. 2003-2006.
- Participation of local population in natural resources management in Turkmenistan. GTZ, 2002-2004.

- Assistance to Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan to fulfill their commitments to prevent global climate change. TACIS-EU, 2004-2006.
- Implementation of Conventions and Caspian Environmental Action Plan (phase 2). GEF, 2004-2007.
- Sustainable development of Caspian coastal communities. TACIS-EU, 2004-2006.
- Institutional strengthening to implement Montreal Protocol in Turkmenistan. GEF/UNEP.
- Capacity building for integrated environmental assessment and preparation of report on the status of environment in Turkmenistan. UNDP.2004.
- Capacity building of nature management information systems in Central Asia. ABD. 2005-2007.

203. Is your country strengthening regional and subregional cooperation, enhancing integration and promoting synergies with relevant regional and subregional processes? (decision VI/27 B)	
a) No	
b) Yes (please provide details below)	X

Further comments on regional and subregional cooperation and processes.

Turkmenistan has joined various international conservation agreements and become a part of the Framework Convention on Climate Change, Convention on Biological Diversity, Vienna Convention and Montreal Protocol on ozone-deleting substances, Convention to Combat Desertification, Basle Convention on the Control of Transboundary Transportation of Hazardous Wastes and their Elimination, Aarhus Convention on Access to Information and Public Involvement in the Process of Decision Making and Access to Justice on Environmental Issues. Turkmenistan strives to implement its commitments and decisions arising from these Conventions.

The following question (204) is for DEVELOPED COUNTRIES

204. Is your country supporting the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes? (decision VI/27 B)	
a) No	
b) No, but programmes are under development	
c) Yes, included in existing cooperation frameworks (please provide details below)	
d) Yes, some cooperative activities ongoing (please provide details below)	

Further comments on support for the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes.

205. Is your country working with other Parties to strengthen the existing regional and subregional mechanisms and initiatives for capacity-building? (decision VI/27 B)	
a) No	
b) Yes	

206. Has your country contributed to the assessment of the regional and subregional mechanisms for implementation of the Convention? (decision VI/27 B)	
a) No	
b) Yes (please provide details below)	
Further comments on contribution to the assessment of the regional and subregional mechanisms.	

Box LXXIV.

Please elaborate below on the implementation of the above decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

F. COMMENTS ON THE FORMAT

Box LXXV.

Please provide below recommendations on how to improve this reporting format.
1. Poor translation of the questionnaire; 2. Text boxes contain questions which are difficult to respond unambiguously; 3. Questions should be formulated in a way that is understood not only by the authors and experts in the hugely accumulated documentation of the Convention but also by the experts on biodiversity proper. Many questions are worded too vaguely and allow ambiguous interpretation, or are perceived as reiterated repetition or clarification of questions already asked in other sections. Such questions should be accompanied with detailed clarifications and, if possible, examples (samples of responses). 4. Repetitions make the format too large, which results in the adverse action: countries do not fill in all text boxes or leave many questions unanswered referring to similar previous responses;

5. The question *"National targets for specific programmes of work"* in Section B **"Priority Setting, Targets and Obstacles"** was the most difficult to formulate responses. Non-uniform list of parameters impedes understanding of what programmes of work are in question: whether it is related to industrial sectors as in the case with agriculture, or to ecosystems – inland waters, marine and coastal areas, forests, etc.? This situation of informational incompatibility complicates the task to determine the proper line of responses. It is necessary to harmonize the structure of this section and unify categories of the defined information.

6. The following sections are much better structured: *"Global strategy for plant conservation"* and *"Ecosystem approach"* which to some extent duplicate some questions of the first (difficult) section B. But section B should not be entirely deleted as it allows assessing the extent of implementation of the national strategy and action plan (BSAP).

7. It is desirable that the concrete information of the Global target, target for 2010 and development goal for 2010 are given as an annex to the next reporting format.

8. It would be also useful to provide a relevant glossary of terms and concepts to allow all participants of the reporting process to work constructively, without alternative versions of the terminology interpretation.

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LIST OF ACRONYMS

ADB - Asian Development Bank
AIC - Agro-Industrial Society
ARB - Access to genetic resources and distribution of benefits

BSAP – Biodiversity Strategy and Action Plan
BGU - Ben Gurion University, Israel

CAM - Central Asia and Mongolia
CATCN-PGR - Plant Genetic Resources Net (PGR) of Central Asia and Transcaucasia
CBD - Convention on Biological Diversity
CCD - Convention on Combating Desertification
CEP - Caspian Environment Programme
CG - Coordination Group
CHM - Clearing-House mechanism
CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora
CWANA – Countries of Western Asia and Northern Africa

EIA - Environment Impact Assessment
ESCATO – Economic and Social Commission for Countries of Asia and Pacific Ocean

FCCC - Framework Convention on Climate Change
FAO – United Nations Food and Agriculture Organization

GEF - Global Ecological Fund
GER - Global Environmental Review
GG - Greenhouse Gases
GIS - Geographic Information System
GMO - Genetically Modified Organisms

GTZ - German Technical Cooperation Society

ICARDA – International Center for Agriculture Research in Dry Areas
IFAD - International Fund for Agriculture Development
IPGRI - International Plant Genetic Resources Institute
ISDC - Inter-State Sustainable Development Commission
INTAS - International Association for Promoting Cooperation between Scientists of the Former USSR

IUCN - International Union for Conservation of Nature and Natural Resources

KOT - Key ornithological Territories

MNP - Ministry of Nature Protection
MA - Ministry of Agriculture

NCAP - National Caspian Action Plan
NEAP - National Environment Protection Action Plan
NGO - nongovernmental organization
NRIDFF – National Research Institute of Deserts, Flora and Fauna

OSCE - Organization for Security and Cooperation in Europe

PDF-A - Pre-project phase ?
PGR - Plant Genetic Resources

REAP – Regional Environment protection Action Plan

SC - State Commission
SIC - Scientific Information Center
SIMMIT – International Center for Corn and Wheat Improvement
SPA - Specially Protected Areas
SPECPGR – Scientific Production Experimental Center for Plant Genetic Resources
SS - Shareholding Society

TACIS – EU Programme for Technical Assistance to CIS countries and Mongolia
TAU - Turkmen Agriculture University
TDA - Transboundary Diagnostic Analysis
TEMPUS – Trans-Europeans Mobility Scheme for University Training
THFS – Turkmen Hunters and Fishermen Society
TIKA - Turkish Development and Cooperation Agency
TK - Traditional Knowledge
TNPS – Turkmen Nature Protection Society
TSU - Turkmen State University

UN - United Nations Organization
UNDP - United Nations Development Programme
USAID - United States Agency for International Development
UNEP - United Nations Environment Programme

UNESCO – United Nations Education, Science and Culture Organisation
UNU\IAS - United Nations University/Institute for Advanced Studies

WINROCK – International Institute for Agriculture Development
WWF - World Wild Fund