



AZERBAIJAN

FIFTH NATIONAL REPORT

APRIL 2014

EXECUTIVE SUMMARY

Preamble

The Republic of Azerbaijan's Fifth National Report to the Convention on Biological Diversity has been prepared in accordance with Article 26 of the Convention and COP decision X/10 of the Convention, whereby parties are required to submit their fifth national reports by 30 March 2014. The structure of the report is based on the *Guidelines for the Fifth National Report* published by the Convention. The report was prepared by the Ministry of Ecology and Natural Resources (MENR), with the financial and technical support of the GEF and UNDP.

In line with the Guidelines for the Fifth National Report, the report emphasises synthesis and analysis rather than detailed description, and does not repeat content that was already covered in Azerbaijan's Fourth National Report.

Status of Azerbaijan's biodiversity

The Republic of Azerbaijan is situated at the juncture of several bio-geographical areas - the Eastern Palearctic, Turan, the Mediterranean, Asia Minor, and the Middle East - and contains species of European, Central Asian and Mediterranean origin. The country forms an integral part of the *Caucasus Ecoregion*, a region with exceptional levels of biodiversity. Azerbaijan also shares the largest inland body of water in the world, the Caspian Sea, with four other countries (Russia, Iran, Turkmenistan and Kazakhstan). The biological diversity of the Caspian Sea and its coastal zone makes the region particularly significant.

Azerbaijan can be divided into the following five broad ecosystem complexes, all of which contribute to the high levels of biodiversity represented in the country:

- Forest ecosystems;
- Freshwater, wetland and swamp ecosystems;
- Grassland and semi-desert ecosystems;
- High mountain ecosystems; and
- Marine and coastal ecosystems.

In 2012, a revised and updated edition of the *Ecoregion Plan for the Caucasus* identified and delineated the key Priority Conservation Areas, and associated wildlife corridors, in four priority biomes – forest; freshwater and wetland; coastal and marine; and high mountain - for the ecoregion, including the entire territory of Azerbaijan. These PCAs provide a spatial focus for the implementation of conservation measures, including: land-use zoning; establishment/expansion of protected areas; creation of wildlife corridors; improved monitoring and enforcement; and targeting mainstreaming activities in Azerbaijan.

The *National Caspian Action Plan* (NCAP) identifies the key marine and coastal habitats requiring focused conservation actions in Azerbaijan's territorial waters of the Caspian Sea.

Limited institutional capacities in the mapping and classifying of ecosystems and habitats, as well as in the development of thresholds to assess their threat status, means that it is not yet possible to objectively report on ecosystem and habitat trends in Azerbaijan. The MENR is however, with the support of the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ), developing a National Biodiversity Monitoring System (NBMS) for Azerbaijan. The

first version of the NBMS (2013) defines 20 pressure, state and response indicators, of which 15 are considered as priority indicators for the country.

In August 2013, the 2nd edition of the *Red book of Azerbaijan* was published. The Red Book contains updated information on the status of rare, threatened and endangered wild plant and animal species for the entire territory of the country, including Azerbaijan's sector of the Caspian Sea. The current version of the Red Book lists 338 species of higher plants, 12 species of fungi, 23 species of lower plants and 223 species of fauna (including 74 insect species, 6 amphibian species, 14 reptile species, 9 fish species, 72 bird species and 42 mammal species). This represents a significant increase in the number of rare, threatened and endangered species that were recorded in the 1st edition of the 'Red Book of Azerbaijan' (1989) - 108 animal species and 140 plant species – although this, may in part, be attributed to an improvement in the research and monitoring capacity of the Azerbaijan National Academy of Sciences (ANAS).

In 2011, the Secretariat of the Framework Convention for the Protection of the Marine Environment of the Caspian Sea published the *Caspian Sea: State of Environment* report. The report highlights the main trends in the marine and coastal environment of the Caspian Sea. It provides a gap analysis, showing the needs and requirements of the countries, individually and collectively, in the areas of monitoring, information collection and management related to policy, decision-making and implementation of the Tehran Convention and its Protocols.

Key pressures on Azerbaijan's biodiversity include:

- (i) Land degradation: extensive salinization; widespread soil erosion; weak regulation of building and construction activities; and pervasive use of fertilizers, pesticides, and herbicides.
- (ii) Habitat fragmentation: harvesting of timber; conversion of grasslands for agriculture; damming of rivers; expanding the network of irrigation channels in steppe ecosystems; and outbreak of wildfires.
- (iii) Unsustainable levels of natural resource use: overgrazing in grasslands and semi-arid areas; hunting of wild birds and game species; over-fishing of sturgeon and other commercial fish species; and poorly maintained water distribution systems.
- (iv) Pollution: limited infrastructure and capacity for effective waste management; weak storage capacity for hazardous wastes; residual oil pollution; incoming municipal, industrial and agricultural wastes from trans-boundary rivers.
- (v) Invasive species: marine and terrestrial spread
- (vi) Climate change: weak adaptation and mitigation capacities

The root causes of environmental degradation in Azerbaijan lie in four main areas. First, while the collapse of Soviet rule in 1991 was liberating, it also left much of the population poorer than before and without the free basic services (e.g. housing, electricity, water, gas) that were previously provided under the Soviet regime. Second, the continuing hostile conflict between Azerbaijan and Armenia over the Armenian occupation of the territory of Daghlig-Garabagh (Nagorno Karabakh) and surrounding areas has resulted in hundreds of thousands of refugees living as internally displaced persons. Third, while Azerbaijan's petrochemical resources provide a driving force for its economy and is a major source of worldwide oil reserves, the environment has suffered from contamination as a result of oil production and transport. Fourth, following Soviet rule, markets (that were previously available in the Soviet Union) for agricultural and other service products diminished, driving more people into poverty. Individual species, habitats, ecosystems and ecosystem processes have thus suffered as a result of a combination of these various factors. It is only over the last few years that the Azerbaijan Government has successfully initiated efforts to redress these socio-environmental legacies.

Azerbaijan’s policy and legislative environment for biodiversity is reasonably comprehensive. The main elements, along with their associated regulations, include:

- The Law on Environmental Protection (1999);
- The Law on Specially Protected Nature Areas and Objects (2000);
- The Law on Fauna (1999);
- The Law on Phyto-sanitary Control (2006);
- The Forest Code (1997)
- The Law on Hunting (2004); and
- The Law on Fishing (1998)

Azerbaijan has also ratified the *Framework Convention for the Protection of the Marine Environment of the Caspian Sea* (the ‘Tehran Convention’) which entered into force in 2006.

The institutional environment for managing and conserving biodiversity in Azerbaijan has not changed substantially in the last four years. The Ministry of Ecology and Natural Resources (MENR) remains the primary government agency responsible for biodiversity conservation and the sustainable use of natural resources (i.e. forestry, wildlife, and fish). The key responsibilities of MENR cover six broad areas: (i) environmental policy; (ii) environmental protection; (iii) water management and monitoring; (iv) protection of coastal and marine natural resources; (v) forest management; and (vi) protected areas.

The International Commission on Aquatic Resources of the Caspian Sea (ICARCS) regulates fisheries in the Caspian Sea region by defining the Total Allowable Catch (TAC) and distributing the catch quota regarding major commercial fish species (sturgeon, sprat, seals) between Iran, Kazakhstan, Russia, Azerbaijan and Turkmenistan.

Progress and achievements in the implementation of national biodiversity policies and strategies, including mainstreaming

Azerbaijan has recently – with the technical and financial support of GEF, UNDP and GIZ - initiated the process of reviewing, revising and updating its NBSAP. As part of this process, it will develop measurable targets and indicators that will enable the country to more effectively report on its contribution to meeting the Aichi Biodiversity Targets. It is anticipated that the updated NBSAP (2015-2020) will be formally approved and adopted by Presidential Decree in 2015.

The table below briefly summarises the extent to which the *National Strategy and Plan of Action on Conservation and Sustainable Use of Biodiversity in the Republic of Azerbaijan* (2006-2010) has been implemented. It provides an indication of the state of progress (complete; partially implemented; ongoing; or limited progress). It also describes a few headline indicators of recent activities undertaken during the period of review. It does not however describe the routine, ongoing activities that have taken place over the last four years.

1. Strengthening measures in conservation of biodiversity and genetic resources	
1.1. Review and revise the list of rare and endangered plant and animal species that have national and international status	
COMPLETE	The 2 nd Edition of the Red Data Book was completed and published in 2013
1.2. Identify and assess the ecosystems with rich biodiversity	
COMPLETE	The <i>Ecoregion Conservation Plan for the Caucasus</i> (2012) identifies the Priority Conservation Areas to focus conservation actions in the Caucasus ecoregion of Azerbaijan. The <i>National Caspian Action Plan</i> (NCAP) identifies the Priority Conservation Areas to focus conservation actions in Azerbaijan’s territorial waters of the Caspian Sea.
1.3. Undertake activities to conserve rare and threatened species	

ONGOING	<p>More than 130 goitered gazelles have been reintroduced to their historical ranges – as part of a phased reintroduction programme - in Aqgol National Park, the Gobustan-Jangichay valley and the Acinohur –Sarija plain. In October 2013, a further 10 goitered gazelles were sent to the Republic of Georgia for reintroduction to their historical range in Georgia. It is also planned to reintroduce European bison to Azerbaijan in phased stages, starting in 2014.</p> <p>A wildlife rehabilitation centre was constructed in the territory of Altiaqaj National Park. Rare and threatened animals and birds are being released back into the wild after rehabilitation in the centre.</p> <p>The population status of the endangered Asian leopard is currently being monitored using photo-traps.</p> <p>Eleven fish breeding plants (primarily for sturgeon, carp and salmon) are being maintained, with about 4000 sturgeon (of various species and age groups) bred for rehabilitation purposes.</p>
1.4. Conserve and rehabilitate migration corridors	
PARTIALLY IMPLEMENTED	Recurrent activities underway
1.5 Assess status of agricultural crops and animal species, and ensure their conservation	
PARTIALLY IMPLEMENTED	Recurrent activities underway
1.6. Create and enhance biodiversity in urban and industrial landscapes	
ONGOING	<p>Eight large-scale greening projects are underway in Baku city and Absheron peninsula, currently covering an area of 1,556 ha.</p> <p>The President of the Republic of Azerbaijan signed an Order on the establishment of a Zoological Park on 26 December 2008. The main objectives of the park includes: education; awareness-raising; and the restoration and reintroduction of rare and endangered fauna species. The process of establishing the zoological park has now started.</p>
1.7. Undertake research in the field of biodiversity conservation	
ONGOING	The monitoring of mammal and bird populations are conducted annually (birds in January and mammals in October) in the specially protected natural areas.
1.8. Improve, efficiently use and conserve soils for biodiversity enhancement	
ONGOING	Recurrent activities underway
2. Expansion of protected areas	
2.1. Expand protected area network	
ONGOING	<p>2008: Goygol National Park established; Korchay State Nature Reserve established; Zaqatala State Nature Reserve expanded; Zaqatala State Natural Prohibited Area established; Hirkan National Park expanded</p> <p>2009: Arpachayi State Natural Prohibited Area established; Rvarud State Natural Prohibited Area established; Ordubad National Park expanded; Shahbuz State Nature Reserve expanded and renamed Zangazur National Park</p> <p>2012-2013: Samur-Yalama National Park established; funding for establishment of Qizilagaj marine National Park secured</p>
3. Conservation and efficient use of forest biodiversity	
3.1. Support sustainable use of forests	
ONGOING	Recurrent activities underway
3.2. Enhance community involvement in sustainable use of forests	
ONGOING	Recurrent activities underway
3.3. Develop ecotourism to ensure sustainable livelihoods	
PARTIALLY IMPLEMENTED	<p>Administrative and tourism infrastructure of Shahdag, Shirvan, Hirkan, Altiaqaj National Parks improved</p> <p>Funding secured for Qizilagaj marine National Park</p>
4. Conservation of biodiversity in trans-boundary areas	
4.1. Study and conserve biodiversity resources shared with bordering countries	
ONGOING	The territory of Zaqatala State Nature Reserve was expanded to the border of the Republic of Georgia.
4.2. Improve cooperation and information exchange mechanism with bordering countries	
ONGOING	A number of seminars, training courses and workshops were organized with biodiversity-related organizations in trans-boundary countries.
5. Ex-situ conservation and regeneration of rare and threatened plant and animal species	
5.1. Ensure sustainable conservation of rare and threatened plant and animal species ex-situ	
ONGOING	Recurrent activities underway
5.2. Conserve genetic resources	

ONGOING	Mid-term storage gene banks established for the following additional species/varieties: grain and grain-legume varieties (50) Mid-term storage semen bank (Azerbaijan Livestock Research Institute established for the following additional species: Swiss, Simmental and Black-White cattle breeds; and Murrah buffalo breed.
6/7 Improvement of international information exchange and cooperation	
6.1. Explore necessary opportunities and strengthen international cooperation for management of biodiversity	
ONGOING	Recurrent activities underway
6.2 Improve information exchange and cooperation at the international level	
ONGOING	Recurrent activities underway
7.1. Develop cooperation between organizations dealing with biodiversity conservation	
ONGOING	Refer to Appendix II
8. Improving environmental education and increasing public awareness	
8.1. To set up a modern basis for educational and awareness raising purposes	
ONGOING	An "Inter-city commission for environmental education and enlightenment" has been established to co-ordinate environmental education and awareness-raising in Azerbaijan.
8.2. Improve biodiversity education	
ONGOING	Recurrent activities underway
8.3. Widely disseminate information on biodiversity and its conservation	
ONGOING	Recurrent activities underway, including: - TV series on pollution, desertification, grazing, fires, hunting, plant collection and sturgeon conservation aired - Annual environmental reporting competition - Aarhus Public Environmental Information centres established in in Baku, Ganja and Qazakh rayons.
9. Protection of cultural heritage and traditions related to biodiversity	
9.1. Identify and support cultural heritage and traditions of local population related to biodiversity	
ONGOING	"Yanardağ" State historical-cultural and nature, "Keshikchidağ" State historical, "Khinaliq" State historical-architecture and ethnography and "Atashgah temple" State historical-architecture reserves established Ancient handicrafts displayed in trade shows. Small workshops of pottery, carpet-making and blacksmiths established under the historical and ethnography reserve "Qala" with the support of NGO "Ekosfera".
10. Achieving application of socio-economic incentives encouraging biodiversity conservation	
10.1. Extend social and economic measures encouraging biodiversity conservation	
PARTIALLY IMPLEMENTED	Incentives in the agricultural sector (see below) for improving the sustainability, and reducing the environmental impacts of, agricultural practices.
10.2. Create legal basis for social and economic incentives encouraging biodiversity conservation	
PARTIALLY IMPLEMENTED	Under development
11. Improving legislation on biodiversity	
11.1. Bring the biodiversity-related laws of the Republic of Azerbaijan in conformity with international standards	
ONGOING	Improvement of environmental legislation to align with the Action Plan "On approximation of the legislation of the Republic of Azerbaijan to the legislation of European Union (2010-2012).
12. Financing action plans on regeneration, conservation and efficient use of biodiversity	
12.1. Encourage international investment in biodiversity conservation	
PARTIALLY IMPLEMENTED	Recurrent activities underway
12.2. Encourage investment in biodiversity from entities within Azerbaijan	
PARTIALLY IMPLEMENTED	Recurrent activities underway
13. Regulation of activities having negative impacts on biodiversity	
13.1. Reduce negative impact on biodiversity	
ONGOING	Recurrent activities underway

The effectiveness of initiatives to mainstream biodiversity into the strategies, plans and programmes of relevant production sectors in Azerbaijan has historically been limited. The recent adoption of the National Development Plan, *Azerbaijan 2020: Outlook for the future*'

Development Concept in 2012 has however now created the enabling framework for improving the mainstreaming of biodiversity into key production sectors. The National Development Plan specifically identifies the measures that will be required to protect biodiversity, neutralize the negative impact of the fuel-energy complex on the environment, eliminate the pollution of the sea and its basin, protect marine and freshwater ecosystems, restore green areas and effectively protect the existing natural habitats and resources. Each State Agency responsible for overseeing the implementation of each production sector is now in the process of, or has already completed, revising their medium-term strategies and state programs to more fully align with the objectives, outcomes and activities identified in the National Development Plan. Key strategies and state programmes include:

- The *State Programme for Poverty Reduction and Sustainable Development in the Azerbaijan Republic* (SPPRSD, 2008-2015) has a strong environmental component. It aims to *inter alia*: increase the coverage of protected areas to 12% of the country; reduce greenhouse emissions in the power sector by 20%; and achieve 100% treatment of all sewerage and wastewater.
- The *State Programme for the Socio-Economic Development of the Regions of the Azerbaijan Republic* (2009-2013) is implementing specific measures related to the treatment of wastewater, the construction of water supplies and the rehabilitation of the Caspian Sea environment and its coastal territories.
- The *State Strategy on Use of Alternative and Renewable Energy Sources* (2012-2020) provides the strategic framework for the adoption of alternative and renewable energy sources in the Azerbaijan.
- The *State Program on the reliable food supply of population in the Azerbaijan Republic* (2008-2015).
- The *National Program on forest restoration and expansion*.

The key biodiversity mainstreaming activities undertaken in the last four years, for each of the key production sectors in Azerbaijan, is summarised as follows:

- (i) Energy sector: wind farm in the Gobustan rayon; hybrid solar-wind farm projects in Gobustan and Absheron; Yashma wind park project; Sumgait Power Station project; optimization of AzDRES; biogas installations in 5 upland villages; Balakhani Landfill projects; ISO 14001-compliant EMS developed for BP; and SOCAR 'zero-waste' strategy.
- (ii) Agricultural sector: introducing state subsidies for cultivation costs associated with biofuels; developing large-scale cattle husbandry complexes for more intensive development of livestock; exempting approved agricultural producers from tax; securing preferential loan rates for approved farmers; improving the knowledge and skills of more cost-effective and sustainable farming approaches; improving insurance mechanisms for farmers; development and cultivation of agricultural plant varieties which are more resistant to the effects of drought, frost, diseases and pests; improvement of irrigation methods and water-use efficiencies; and reducing and eliminating the use of dangerous pesticides and fertilizers.
- (iii) Forestry sector: expanding the national forest coverage; greening urban areas; and rehabilitating the ecological functioning of degraded forests.
- (iv) Water sector: construction/expansion of water-sewage treatment plants in regions; and installation of module type water treatment facilities in villages.
- (v) Fishing and aquaculture sector: new draft version of the 'Law on Fishing'; 12 fish breeding enterprises (sturgeon, carp and salmon); enforcement of fishing quotas and restrictions, notably sturgeon.
- (vi) Impact management: draft law on 'Assessment of Environmental Impact'.

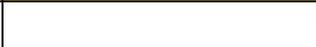
Progress towards the Aichi targets and CBD Strategic Plan

Azerbaijan does not yet have a consolidated biodiversity monitoring system that would enable it to systematically report on progress in the implementation of the *Strategic Plan for Biodiversity 2011-2020* and its Aichi Biodiversity Targets.

Table 8 below provides an indicative overview of Azerbaijan’s current state of progress (0-25% = limited progress; 25-50% = fair/reasonable progress; 50-75% = good progress; 75-100% = excellent progress) in meeting the Aichi Biodiversity Targets¹.

Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	
Target 1 - By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	
Target 2 - By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	
Target 3 - By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, taking into account national socio economic conditions.	
Target 4 - By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	
Target 5 - By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
Target 6 - By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
Target 7 - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	

¹ The headline indicators used to assess the state of progress are further defined in the report and, where reliable data is available, quantitatively described

Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
<p>Target 8 - By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.</p>	
<p>Target 9 - By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.</p>	
<p>Target 10 - By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.</p>	
<p>Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity</p>	
<p>Target 11 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.</p>	
<p>Target 12 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.</p>	
<p>Target 13 - By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.</p>	
<p>Target 14 - By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.</p>	
<p>Target 15 - By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.</p>	
<p>Target 16 - By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.</p>	<p>Not applicable</p>

Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity-building	
Target 17 - By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
Target 18 - By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	
Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
Target 20 - By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Future priorities for the implementation of the Convention

The key priority needs which will guide and inform the revision, and implementation, of Azerbaijan's NBSAP include the following:

- There is a need to improve the integration of biodiversity conservation priorities into key State and National strategies and programs.
- There is a need to build a strong business case for increased investment in the conservation of biodiversity across all sectors.
- There is a need to improve the institutional and individual capacities (information, technologies, skills, knowledge and expertise) of state agencies to implement the suite of biodiversity conservation legislation, policies and programmes.
- There is a need to improve the suite of national laws, regulations and guidelines on biodiversity and biological safety to better reflect best international practices.
- There is a need to reduce the socio-economic dependency of rural populations on agriculture and harvesting of wild natural resources.
- There is a need to improve the collection, analysis and sharing of biodiversity information.
- There is a need to enhance the scientific and research capacity in the field of biodiversity.
- There is a need to develop curriculum and training programs in terms of biodiversity conservation at all levels of the population, and realizing them at the local, regional and national level.
- There is a need to collate and profile information (activities, organisational structure, skills, capacity) on stakeholders (including national and local government, scientific and research institutions, media, private sector and non-governmental organizations) in the biodiversity sector.

- There is a need to expand the reach of awareness-raising programs.
- There is a need to coordinate biodiversity conservation activities across the range of different organisations.
- There is a need to improve the working relationships with NGOs.
- There is a need to develop and implement strategies to conserve rare and endangered species.

CONTENTS

PART I: Biodiversity status, trends and threats and implications for human well-being	13
1.1 Context	13
1.2 Importance of biodiversity to human well-being	17
1.3 Biodiversity threats, impacts and trends.....	20
PART II: The national biodiversity strategy and action plan, its implementation and the mainstreaming of biodiversity.....	34
2.1 Biodiversity targets for Azerbaijan	34
2.2 Revision of the NBSAP to incorporate the Aichi Biodiversity targets	34
2.3 Actions taken to implement the CBD since the fourth report, and the outcomes of these actions	35
2.4 Effectiveness of the mainstreaming of biodiversity into relevant sectorial and cross-sectorial strategies, plans and programs	36
2.5 Implementation status of NBSAP	42
PART III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the MDGs.....	45
3.1 Progress in meeting the Aichi Biodiversity Targets.....	45
3.2 The contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals.....	50
3.3 Lessons, challenges and priorities in the implementation of the Convention in Azerbaijan.....	52
APPENDIX I: Information related to the reporting party and development of the Fifth National Report	56
APPENDIX II: Further sources of information.....	58

PART I: Biodiversity status, trends and threats and implications for human well-being

1.1 Context

Azerbaijan's National Report to the Convention on Biological Diversity has been prepared in accordance with Article 26 of the Convention and COP decision X/10 of the Convention, whereby parties are required to submit their fifth national reports by 30 March 2014. The structure of the report is based on the *Guidelines for the Fifth National Report* published by the Convention.

Azerbaijan is bordered by Georgia to the north-west, Russia to the north, Iran to the south, and Armenia to the south-west and west (see Map 1 below). A small part of Nakhchivan also borders Turkey to the north-west.

Map 1: Physical map of Azerbaijan



Geographically, Azerbaijan is dominated by the Caspian Sea forming its eastern border, the Greater Caucasus mountain range to the north, the Lesser Caucasus in the southwest, the Talish Mountains to the south and the extensive flatlands in the centre of the country. About 60 percent of the country consists of mountains and their foothills; the elevation changes over a relatively short distance from lowlands to highlands. Except for its eastern Caspian shoreline and some areas bordering Georgia and Iran, Azerbaijan is surrounded by mountains. The highest elevations occur in the Greater Caucasus, where Mount Bazarduzu rises to 4,466 metres above sea level. Eight large rivers flow from the Greater and Lesser Caucasus Ranges into the central Kura-Araz lowlands, named after Azerbaijan's longest river, the Kura, and its main

Shortly after Azerbaijan's independence, Armenia militarily occupied Nagorno-Karabakh and its surrounding territories.

Although the UN General Assembly resolution A/RES/62/244 of 14 March 2008 affirms that no State shall recognize as lawful the situation resulting from this occupation, Armenia however still illegally exercises effective control over Nagorno-Karabakh and the occupied territories.

The fifth national report includes these occupied territories as an integral part of the internationally recognized borders of Azerbaijan.

The 5 countries bordering the Caspian Sea have not yet unanimously agreed on its legal status. Currently the coastal countries operate in a mix of unilateral and bilateral actions, based on differing economic and political interests. Given the lack of an agreement on whether the Caspian is a 'lake' or a 'sea', two sets of public international law could apply.

If the Caspian is a 'sea' in legal terms, coastal countries would apply the United Nations Convention on the Law of the Sea of 1982 (UNCLOS). Under UNCLOS, if the Caspian is a legal 'sea', each littoral state receives a territorial sea up to twelve nautical miles, an exclusive economic zone (EEZ) up to nautical 200 miles, and a continental shelf. Since the Caspian at its widest is less than 200 miles, UNCLOS dictates the states apply a median line between claimants.

If the Caspian is legally defined as a 'lake', the countries could use the international law concerning border lakes to set boundaries and regulate the use of border water.

The fifth national report thus limits its reporting to the country's participation in the conservation of the Caspian Sea under the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (the 'Tehran Convention') – and its ancillary Protocols - which entered into force in 2006.

tributary, the Araz. The Kura drains into the Caspian, forming a delta a short distance downstream from the junction with the Araz.

Azerbaijan is the largest (with a total land surface area of ~86,600 km²) and most populous country (with a population of ~9.3 million) in the Southern Caucasus. The greatest concentration of the population is found in the coastal areas, with more than 4 million people located in and around the capital, Baku.

Azerbaijan has a special administrative subdivision - the Nakhchivan Autonomous Republic - separated from the rest of Azerbaijan by a strip of Armenian territory. In addition, Nagorno-Karabakh region and 7 adjacent districts have been occupied by Armenia in Azerbaijan's southwest, for more than 20 years. The occupied area constitutes ~20% of the total territory of Azerbaijan.

Azerbaijan is situated at the juncture of several bio-geographical areas (the Eastern Palaearctic, Turan, the Mediterranean, Asia Minor, and the Middle East) and contains species of European, Central Asian and Mediterranean origin. The country forms an integral part of the *Caucasus Ecoregion*, a region with exceptional levels of biodiversity (WWF's Global 200). Azerbaijan also shares the largest inland body of water in the world, the Caspian Sea, with four other countries (Russia, Iran, Turkmenistan and Kazakhstan). The biological diversity of the Caspian Sea and its coastal zone makes the region particularly significant. One of the most important characteristics of the Caspian Sea's biodiversity is the relatively high level of endemic species among its fauna.

Approximately 4,500 species of vascular plants have been recorded in the country, of which 210 are considered endemic to Azerbaijan. This represents around 65% of the floral diversity of the Caucasus region. Azerbaijan is considered to be a center of origin for a number of globally important food crops. It is especially noted for fruit and nut

trees, and the forests of the Greater and Lesser Caucasus Mountains and the Talish Mountains contain wild ancestors of apples, persimmons, walnuts, chestnuts, pistachios and many other species that have been widely domesticated into many different varieties and strains.

Approximately 25,000 species of invertebrates have been recorded from the country, of which 90% are within the phylum Arthropoda. Azerbaijan also hosts 667 species of vertebrates, across the following taxonomic groups:

Class	Number of species
Fishes	102
Amphibians	10
Reptiles	54
Birds	394
Mammals	107

The diverse and threatened large mammal fauna includes wild goat, chamois, red and roe deer and their predators, such as lynx, wildcat and leopard. Azerbaijan is an important migratory path for many bird species travelling from Europe and Russia and south to Africa and Asia. The lakes and wetlands of Azerbaijan support high numbers of waterfowl species that migrate through or winter here, including the White-Headed duck (*Oxyura leucocephala*) and the globally threatened Lesser White-fronted Goose. Fifty one Important Bird Areas (IBAs) – hosting 31 globally threatened species, 9 biome-restricted species and 15 congregator species - and one Endemic Bird Area (EBA) have been identified (Birdlife International). The Red Book of Azerbaijan (2nd Edition, 2013) includes 223 listed faunal species.

The total number of species in the Caspian Sea Region is estimated to be between 1,800 and 2,000, incorporating different groups of plants and animals. This may be broken down as follows (figures shown here are approximate, as there are some inconsistencies across the literature):

Biotic group	Total species	Endemic species	Red Book species
Phytoplankton	441	17	Unknown
Zooplankton	315	64+	10
Zoobenthos	380	190	20
Fish	133	54	27
Marine and land mammals	125	1	41
Birds	466	Unknown	63

The number of endemic fish species is very high, and includes one lamprey species, 11 herring species, 24 species of Caspian gobies and five anadromous sturgeon species, all of which are fished commercially. The Caspian seal is the only resident endemic mammal.

Table 1 below shows the change in distribution of land use in Azerbaijan over the period 2000-2012.

Table 1: Change in the extent (thousand ha) of different land use types in Azerbaijan (2000-2012)

Land use category	Type of use	2000 (ha)	2005 (ha)	2008 (ha)	2009 (ha)	2010 (ha)	2011 (ha)	2012 (ha)
Agriculture	<i>Arable land</i>	1825,6	1843,2	1860,2	1874,0	1884,1	1885,7	1896,8
	<i>Permanent crops</i>	236,8	221,5	227,5	227,0	227,4	227,2	230,9
	<i>Permanent meadows and pastures</i>	2678,0	2693,9	2669,0	2656,2	2655,3	2655,8	2640,6
	TOTAL	4740,4	4758,6	4756,7	4757,2	4766,8	4768,7	4768,3

Non-agricultural lands	<i>Industry, roads and public utilities</i>	395,1	365,3	352,2	350,5	350,1	342,2	342,2
	<i>Protected areas</i>	192,4	288,6	343,9	392,3	393,5	407,1	407,1
	<i>Forest</i>	1037,4	1037,8	1038,8	1039,9	1040,7	1040,8	1040,8
	<i>Water bodies</i>	150,2	142,5	146,7	147,1	147,1	146,9	146,9
	<i>Other</i>	2144,5	2067,2	2021,7	1973,0	1961,8	1954,3	1954,7
	TOTAL	3919,6	3901,4	3903,3	3902,8	3893,2	3891,3	3891,7
TOTAL LAND AREA		8660,0						

At present, the extent of irrigated lands comprises only 25.2% of the usable agricultural area.

Azerbaijan can be divided into the following six broad ecosystem complexes, all of which contribute to the high levels of biodiversity represented in the country:

Forest Ecosystems

Over the last 15 years, forested fields are expanded up to 1 million and 21 thousand ha from 989 ha (i.e. the forested areas of the Republic have increased from 11.4 % to 11.8 %). Various construction and furniture materials are made of the wood of forest plants (see volumes in Table 2 below). Among them Hornbeam (*Carpinus*), Georgian oak (*Quercus iberica*), European yew (*Taxus baccata*) and other valuable plants of tree and brushwood are widely spread in Azerbaijan. No change has been recorded in the Forest Ecosystems of Azerbaijan Republic since submittal of the Fourth National Report to the Convention Secretariat.

Table 2: Wood residues in forest cutting areas and cleaning of areas from cuttings

	2010	2011	2012
Wood residues in cutting areas, m ³ :			
Finished wood - total	508	-	318
including merchantable wood	6	-	166
Total volume of standing trees	-	231	1311
of which usable wood	-	208	1160
including merchantable wood	-	30	85
Cutting areas to be cleaned, ha	301	512	2107
including cleaned	287	403	1935
Wood procurement for fuel, m ³	41817	46497	42265

Swamp Ecosystems

No serious change has been recorded in the Swamp Ecosystems of Azerbaijan Republic since submittal of the Fourth National Report to the Convention Secretariat.

Wetland Ecosystems

No serious change has been recorded in the Wetland Ecosystems of Azerbaijan Republic since submittal of the Fourth National Report to the Convention Secretariat.

Grassland and Semi-Desert Ecosystems

No serious change has been recorded in the Grassland and Semi-Desert Ecosystems of Azerbaijan Republic since submittal of the Fourth National Report to the Convention Secretariat.

Coastal and Marine Ecosystems

No change has been recorded in the Coastal and Marine Ecosystems of Azerbaijan Republic since submittal of the Fourth National Report to the Convention Secretariat.

High Mountain Ecosystems

These ecosystems cover 10% of the territory of Azerbaijan. Their absolute height is varied from 2000 to 4500 m and even higher. No change has been recorded in these ecosystems since submittal of the Fourth Report.

1.2 Importance of biodiversity to human well-being

1.2.1 Food

A wide range of Azerbaijan's flora is used as a source of food. Key food species and their uses are listed in Table 3 below. Some of the wild plants are widely used as fruits and vegetables in Azerbaijan, including: cherries; plums; cornel; hawthorn; forest strawberry (*Fagariavesca*); Russian cherry-plum (*Grossularia reclinata*); sea-buckthorn (*Hippophae rhamnoides*); apple; medlar; sour cherry; blackthorn (*Prunus spinosa*); raspberry (*Rubus caesius*); *Rubus* spp., dog-rose (*Rosa* spp.) and wild varieties of onion (*Allium*).

Table 3: Key food species and their uses

Common name	Scientific name	Use
Chestnut	<i>Castanea sativa</i>	The nut is eaten roasted or raw; chestnut flour is made from the nut, and is combined with wheat flour to bake bread.
Hazelnut	<i>Corylus avellana</i>	Hazel nuts are eaten roasted or raw, and are widely used in bakery and confectionery.
Beech	<i>Fagus orientalis</i>	Fruits are eaten instead of sunflower seeds, and valuable oil is also acquired from its fruit.
Linden	<i>Tilia caucasica</i>	Flowers and leaves are used for teas and tisanes, and linden flowers are a source of nectar for honey production.
Shepherd's purse	<i>Capsella bursapastoris</i>	Young leaves are used in making soup and borsch.
Millet	<i>Echino chloaoryzoides</i>	Thick roots are pickled and eaten fresh.
Ferula	<i>Prongos ferulaceae</i>	Cooked or pickled.
Cow-parsnip	<i>Heracleum trachyloma</i>	Leaves and stem are eaten.
Sorrel	<i>Rumex</i> spp.	Leaves and stem are used.
Caper	<i>Capparis herlacea</i>	Buds are pickled.
Sugar cane	<i>Sorghum saccharatum</i>	Used to produce <i>doshab</i> (boiled down fruit juice).

Cockspur	<i>Echino chloacrusgalli</i>	Nutritional uses
American Millet	<i>Milium effusum</i>	Seeds are used in baking bread
Chervil	<i>Chaerophyllum aureum</i>	Cooked and used as a meal.

Some plants are recognized as important sources of pollen and nectar for honey, and others provide flavourings for natural beverages and teas. A number of plants are used to produce oils, doshabs and syrups. Oils are produced through cold pressing of the seeds and grains of cereals (walnut, pistachio, hazel nut, beech, grapes, tomato, pomegranate, garlic, pumpkin, peach, apricot, sour cherries). Commercial production of essential oils from the seplants may be organized in Nakhichevan. Other species of not include liquorice (*Glycyrrhiza glabra*), tulips (for decorations) and Caucasian oak (*Quercus macranthera*). Seeds and cereals (walnut, pistachio, hazelnut, tomato, pomegranate, etc.) are used to produce 21 types of products, including doshabs (a national food).

Azerbaijan is one of the ancient origins of grains. The species used in the agriculture and their wild progenitors have been widely represented in the country. Four hundred and fifty four species of graminaceous plants (*Poaceae*) are found in Azerbaijan, 25 of which are cultivated. This includes: 15 varieties of the wheat (*Triticum*); one species of maize (*Zea mays*), with 90 distinct genetic varieties; 10 species of barley (*Hordeum*), with 500 distinct varieties; five species of rye (*Secale*); and one species of rice (*Oryza sativa*), with more than 80 local varieties (including a number of traditional cultivars). Most of the native varieties are now either extinct, or in danger of extinction. Only one of these native varieties (*Secale cereale*) is still under cultivation. The Ministry of Agriculture has scientific-research institutes conducting studies for selection of agro-biodiversity as well as their conservation. This includes the following: commercial species (grains, cereals, legumes, tobacco, cotton); fruits (melons, berries); viticultural species; and forage species.

1.2.2 Medicinal use

Around 800 plant species of medicinal value have been recorded in Azerbaijan, including 150 species used in pharmacology. For example, *Carpodium platycarpum* which is grown only in Nakhichevan is the source of camphor and other extracts having potential medical and economic importance. Other key medicinal plants include elecampagne (*Inula helenium*), origanum (*Origanum vulgare*), coltsfoot (*Tussilago farfara*), valerian (*Valeriana officinalis*), and sandy immortelle (*Helychrisum arenarium*). Medicinal plants are dried, packaged and mainly produced by “AzerfarmLtd”.

The population of the Nakhichevan Autonomous Republic use wild plants for medicinal, food, wood, dyes and other purposes. Many of the species collected are rare, end emicor endangered. A great number of plants (up to 750 species) are used in traditional remedies and medicines, and resources of Nakhichevan can be seen as a ‘natural pharmacy’. The level of collection of some natural products is relatively extensive. Currently, a few of these plants are commercially cultivated by “Loqman” (Scientific-Production Co-operative for Medical Plants), and further expansion of cultivation may be an option in future.

1.2.3 Wood

Various construction and furniture materials are made from the wood of native forest species, including Hornbeam (*Carpinus* spp.), Georgian oak (*Quercus iberica*) and European yew

(*Taxus baccata*). Table 4 below summarised the volumes (in m³) of wood harvested for fuel wood and for commercial use over the last three years.

Table 4: Volumes of harvested wood (2010-2012)

	2010	2011	2012
Commercial wood - total (m ³)	508	-	318
Fuel wood – total (m ³)	41817	46497	42265

1.2.4 Commercial export

A number of plants from Azerbaijan have attracted foreign businessmen, and some valuable plants are exported abroad, including cultivated liquorice (*Glycyrrhiza glabra*), linden (*Tilia cordata*), cane (*Phragmites australis*), reed (*Arundo donax*), nettle (*Urtica dioica*) and Betula sp. (species belonging to the birch genus). Export of plants to foreign countries is regulated under relevant permits (licences) issued by proper authorities.

1.2.5 Hunting

Some mammal species (e.g. hare, fox, jackal, racoon, raccoon, Dagestan urus/aurochs, and wild boar) and birds (ducks, geese, coot, pigeons, quail, pheasant, etc.) are traditionally used in hunting. There is a keen interest of foreign hunters in the hunting of some species of Azerbaijan fauna (Dagestan urus/aurochs, wild boar) over the last few years. Proper permits (licences) are issued by local authorities of Ministry of Ecology and Natural Resources for hunting activity in order to regulate such hunting. Currently a ban has been imposed upon bird hunting due to avian flu.

1.2.6 Use of biodiversity for biotechnology and genetic collections

Biodiversity is used for scientific and industrial purposes in biotechnology. The curation and reproduction of cultural and wild plants and the *in vitro* cultivation and rehabilitation and reproduction of commonly grown plants is being implemented. Cultivated plants grown *in vitro* are used for various biotechnological research projects. Genetic variations of tomato, tobacco, wheat, barley, rye, lucerne, carnation and roses have been cultivated or cloned. The genetics of wild plant species are used to identify the origin of cultivated plants which have been shaped through evolution process, and to develop hybrids of wild plants for their important characteristics.

1.2.7 Cultural or traditional values of biodiversity

The territory of Azerbaijan is located in a strategic area of economic and political overlap between the north, south, east and west. The country thus comprises an important area of cultural overlaps. It also constitutes an important trading route, and has historically always had a diversified and well-developed economy, including cotton-growing, livestock breeding and trade in oil and other minerals. Carpets and carpet products produced in Azerbaijan were reputedly recalled in a number of historical and art works and examples of folklore. Those carpets reflect the entire beauty of nature diversity of Azerbaijan: blue skies, green forests, colourfulness of down hills, and whiteness of snowy mountain peaks. Red pomegranate seeds and golden animals, yellow saffron and amber grapes joined miraculously in these carpets. The mysteries of the carpet-making, usage of natural resources, production of colouring materials from them, production of threads from wools of animals, and selection of various types of

woods to manufacture musical instruments and other items, have been transferred from one generation to another one. Azerbaijan flora is rich with colouring materials. There are 1500 plant species combined in 131 families and 411 classes. These include mulberry (*Morus rubrum*), chesnut (*Cachtana sativa*), osage orange, barberry (*Berberis vulgaris*), Greek walnut (*Juglarisregia*) and oak species (*Quercus longipes*). Plant species with high tar content is prevalent (East tar – *Crambe orientalis*, small-head astragalus – *Astragalus microcephalus*, etc.).

1.2.8 Tourism

Azerbaijan provides suitable conditions for the development of ecotourism, particularly for holidays based on bird-watching. Interesting bird populations can be observed throughout the year both in wintering and breeding periods. Large colonies of herons, cormorants, gulls and tern can be seen in the islands and even in the abandoned oil rigs. In winter extensive flocks of little bustards, eagles, and griffon vultures are seen in the lowlands. Large populations of water birds gather along the Caspian coast and in inland water systems.

1.3 Biodiversity threats, impacts and trends

1.3.1 Land Degradation

Extensive areas of Azerbaijan are being severely impacted by soil erosion and salinization. It is estimated that 3.6m ha (~42% of the territory of Azerbaijan) is subject to the damaging effects of erosion, while 0.6m ha (~7% of the territory of Azerbaijan) is adversely affected by salinization, to the extent that it is now no longer suitable for agriculture. The salinization and erosion of soils tend to be a result of poor irrigation and drainage systems, overstocking of livestock, unsustainable levels of ground water extraction and ongoing deforestation. The current distribution and extent of salinization and erosion is summarised in Table 5 below.

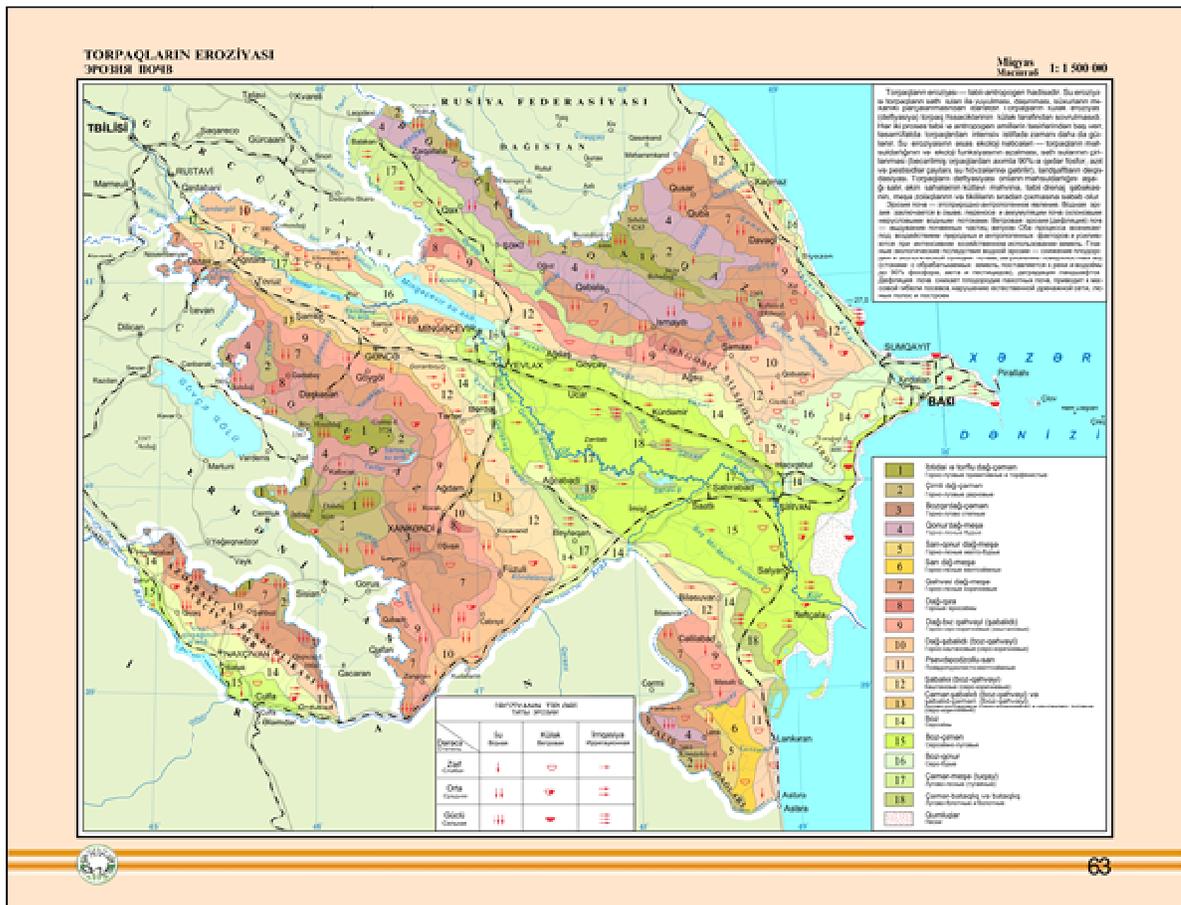
Table 5: Distribution (by regions) and extent (ha) of soil erosion and salinization in the Republic of Azerbaijan

Regions	Total area (ha)	Saline soils (ha)	Eroded area (ha)			Salinization (ha)		
			Weak	Moderate	Severe	Weak	Moderate	Severe
Absheron	527052	3339	37715	44304	6647	17097	9161	31418
Muqan-Salyan	873676	12852	-	-	-	61033	61952	42690
Shirvan	1121007	-	58070	32127	20000	81322	78881	69225
Lenkoran	606904	-	18483	18180	11439	2550	2219	8229
Mil-Qarabagh	472425	-	-	3619	2222	27956	24727	30105
Arazboyu	302139	5196	-	-	-	34539	23170	12515
Ganja	525947	-	11520	22081	13646	10583	5066	2346
Qazakh	702784	-	41296	51408	25518	9269	6070	1295
Sheki	883491	21460	34147	19403	6982	55143	15028	1647
Khachmaz	696482	2646	26013	24823	15483	7512	5251	5172
Nakhichevan	536300	-	36584	27305	5383	11923	4173	2870

More than 42.5 % of territory of Azerbaijan (or 3672.6 thousand ha) is subject to erosion, from them 1380.9 thousand ha (37.6 %) is weak, 1146.1 thousand ha (314.3 %) is average and 1145.5 thousand ha (31.1 %) is severely eroded. Erosion affects – to a lesser of greater degree - 44.5 % (712 thousand ha) of cultivated grounds, 68.1 % (1500.4 thousand ha) of summer

pasture, 15.2 % (15.6 thousand ha) of haymaking, 40 % (29.8 thousand ha) of long-term plantation and 26 % (270.4 thousand ha) of wood production. The reason for erosion is distributed as follows: 82.1% of water erosion; 10.3 % of wind erosion; and 7.6 % of irrigation erosion. Preliminary results show that the area of severely eroded agricultural lands is almost 700 thousand ha. The cost of rehabilitation of these areas is estimated at more than 1000 mln dollars. Map 2 below shows the current extent of soil erosion in Azerbaijan. It is notable that soil erosion has seriously affected the productivity of the winter meadows and pastures in the winter grasslands of Kura-Araz lowland, Samur-Davachi lowland, Absheron Peninsula, Gobustan, Jeyranchol and Acinohur and other areas. Areas specifically affected by soil erosion include the Kura-Araz lowland, Ganja-Qazakh slope plain, Lenkoran, and Samur-Davachi lowland and Qanikh-Ayrichay valleys.

Map 2: Distribution and degree of soil erosion in Azerbaijan



Currently, total area of cultivated land equals to 1443 thousand ha, 598,8 ha (41.5 %) of which are supplied with drainage, from them 324 thousand ha (22.4 %) have closed drainage systems. Based on the degree of salinization, cultivated lands are divided into non-saline - 828.6 thousand ha (57.4 %), weakly saline - 430 thousand ha (29.9 %), moderately saline - 124,2 thousand ha (8.6 %) and intensively saline - 59,1 thousand ha (4.1 %). 506 thousand ha of these lands are well ameliorated, 697 thousand ha are sufficiently ameliorated and 240 thousand ha are in poorly ameliorated condition.

Irrigations performed without compliance with the mode of irrigation are accompanied by overwatering leading to rise of groundwater level, soil salinization and swamping in those areas. Treatment of soil with over-dosage of mineral fertilizers and pesticides causes pollution of soil with more or less hazardous substances. In general, re-salinization process in reclaimed

lands basically occurs as a result of anthropological changes. The most common negative factor degrading reclamative situation of irrigated soil is closeness of mineralized ground waters to the surface of the soil and the rise of their levels are caused by the following:

- non-observance to irrigation mode and technology
- non-observance to water usage plan;
- employment of imperfect irrigation machinery and techniques;
- poor preparation of fields for irrigation;
- water loss due to leakage from irrigation channels;
- Filling up of lands with water as a result of water operator's negligence, etc.

Deforestation causes strengthening of erosion processes, drying-out of ground waters and increase of draught in the area.

Consistent and intensive development of agriculture is one of the major sources of efficient use of soil for providing population with food products in the period of transition to market economy. Development of agriculture has considerable importance for the development of national economy.

As soil erosion studies have shown, erosion process damages pastureland, hay lands and pasture areas very strongly. 470,0 thousand ha (78%) of the total summer pastures, and 1131,0 thousand ha (65%) of winter pastures were affected by erosion of various levels. Non-systematic use of pasturelands, hay lands and pastures over long time has also destructed valuable grass plants and replaced them with weeds and less important for forage grasses in these areas. As a result of non-systematic pasturing, productive layer was destroyed and soil erosion developed largely. The following types of desertification occur in the plain zones of the country (Kura-Araz lowland, Jeyranchol, Nakhichevan AR): natural (physical-geographical) and anthropogenic. Due to these factors, desertification is more intense in Absheron Peninsula. Generally, in addition to climate and plant factors, salination, salinization, technogenic pollution and all types of erosion especially deflation causes soil degradation and consequently desertification. Incompliance with pasturing norms in stock raising also seriously threatens these areas. Monitoring of farms and pasture lands suggests that in some areas the number of animals per hectare exceeds pasturing limit for 5-10 times, and even more. And in its turn, it leads to desertification, destruction of vegetation which strikes the quantity dynamics of plants, and re-location of wild animals from their natural habitats.

In the result, the soil which is the main production asset in the agriculture, is washed away and destructed, and its fertility declines. And this reduces the productivity of agricultural plants, and adversely affects product quality. Advanced techniques are not employed for sustainable development of livestock by taking into account the environmental status of land resources (extensive – migration and intensive – barn). The actual number of sheep and goats per hectare is much higher than norms. The bovine cattle are pastured in herds. Pasture areas are not used as assigned. Winter pastures are cultivated beyond limits and not according to their intended purpose. Winter pastures are utilized throughout the year.

Consequently, in addition to the erosion and salination of pasture areas, productive soil layer is washed away, natural grass layer gets thinner, the quality of pasture area declines, ground water breaks surface and eventually pasture areas are subject to desertification. Therefore, 60% of winter pastures and 70% of summer pastures are destructed. Currently, there are 1,395 thousand ha of winter pastures with the capacity of 2,876 thousand heads, and 413,7 thousand ha of summer pastures with the capacity of 1,939 thousand heads. 50 thousand ha of these winter and 203 thousand ha of summer pastures are under occupation.

According to the established standard, 2,3 heads of sheep and goats should fall to each hectare of winter pastures, and 5,7 heads of sheep and goats to each hectare of summer pastures.

According to statistics, there are 8,4 million heads of sheep and goats in the Republic. Given the total area of pastures and total quantity of sheep and goats, 6,5 heads of sheep and goats (3 times more) fall to 1 ha of winter pasture land, and 20,5 heads of sheep and goats (3,5 times more) to 1 ha of summer pasture land. At present, in the country current situation of the pasturelands, hay lands and pasture farms and their productivity are poorer than their capacity. This does not fit with increased demand of livestock, especially sheep farming, and affects the development of livestock-raising. Whereas, average productivity of semi-desert winter pastures equals to 3-5 hundred kilograms per hectare, and productivity of summer pastures equals to 8-10 hundred kilograms of dry grass on average. Sheep and goats existing in the country are provided with winter pastures for 45,8% and with summer pastures for 37,9%.

Unlike water and air, soil is a more complicated and complex system. Therefore, when polluted its restoration requires longer time and bigger economic investments. Over the last 150-160 years, soil cover in the Republic of Azerbaijan was subject to more pollution. Pollution sources can be classified as follows: industry, transport and agricultural activities and activities in residential areas. It is revealed that industry and agriculture are the major sources. Throughout long years, oil extraction and transport, mining works carried out especially in Absheron (16 thousand ha), Gobustan (5,5 thousand ha) and South-East Shirvan (12,5 thousand ha), also in Lesser Caucasus led to pollution and degradation of soil at a greater extent. Over the last years, numerous industrial areas especially in Sumgait, Shirvan, Baku, Ganja and Mingachevir cities has polluted soil with effluents and solid wastes.

According to estimations, in our country, area of such lands is larger than 98 thousand hectares. 6 thousand ha of such lands are recorded in Sumgait and 5,5 thousand ha in Qaradagh-Alat area. Soil pollution in agriculture occurs in various ways, in particular with employment of mineral fertilizers and pesticides and irrigation waters. Larger land plots were subject to such type of pollution in the Kura-Araz lowland, Ganja-Gazakh sloping plain, Lenkoran, and Samur-Shabran flatlands and Ganikh-Ayrichay valleys. Currently, in particular, the warehouses and landfills, where fertilizers and pesticides were stored in Soviet times play the role of potential pollution source. Such pollution sources existed in all administrative areas, railway stations and transport networks. Indigenous biodiversity of such areas is perished; they were replaced by organisms resistant to these substances. Therefore, solution of this issue is priority for the country.

Transportation also has a significant impact on soil pollution. These may include oil product residues in filling stations, loss of chemicals in transpiration and toxic emissions from the transport. In our country, such pollutions are more visible in densely-populated areas. Domestic wastes are considered to be the second large source of pollution in the monitored areas of cities. According to estimations, in our country, over a year 250-300 kg of domestic wastes and about 300 kg of effluent fall per capita in cities with the population exceeding 50 thousand people. Soil cover of our country is subject to degradation, as the result of up to 5% contamination of various degrees.

2,54 million. ha or 29,31%- of lands spread in the country were subject to surface and ravine erosion. Lands in the uplands were subject to water, and lands in flatland zone near the Caspian Sea and north costal area of Absheron peninsula to wind erosion. Depth of local erosional conformity, inclination degree and aspect of slopes are among the major factors generating water erosion. Intensive erosion process is related to granular composition of the soil cover and buffer rate of the soil, density degrees of vegetation on the slopes, anthropological factors, incompliance with correct pasturing system of summer pastures, trampling of pastures, draught reoccurrence every 3, 5, 25 years, decline in production of grass context and decrease of the buffer rate of the soil, etc. Due to non-observance to irrigation intensity and norms when

cultivating lands under irrigation conditions, in the foothill regions irrigation erosion is more widely spread.

The soils in those areas underwent weak, medium and severe erosions. It is known that, erosion process, especially surface and ravine erosion is considered to be the worst natural condition for the soil cover. Wind erosion is basically caused by the winds with 15m/s speed and by frequent winds and lands subject to such types of erosion process are not widely spread in the territory of the country.

Information on the eroded lands in the territory of the country is summarised in Table 6 below.

Table 6: Information on erosion rate of the soils of the Republic of Azerbaijan

Seq. number	Agricultural and plots	Area (hectares)	Erosion rate (hectares)			
			Eroded	Weekly eroded	Medium level erosion	Severely eroded
1	Sown	1613147	1606049	4033	2258	807
2	perennial	58752	46961	5664	4594	1533
3	Rested	172294	166746	3584	1447	517
4	pasture	107919	82785	11385	7781	5968
5	pastureland and meadow	2562361	1913571	24449	280066	124275
6	Total agriculture areas	4514473	3816112	269115	296146	133100
7	Other soils	4127033	-	-	-	-
Total for the country		8641506	7632224	538230	592292	266200

Land degradation is being further exacerbated by the weak regulation of building and construction activities in Azerbaijan, as well as the limited capacity for effective controls on mitigating the environmental impacts of industrial developments. In many cases residential building and other facilities are constructed according to the decisions of local governing bodies without consultation with relevant organizations on land use zoning and/or mitigating impacts. Some houses and other facilities are built without compliance with environmental and sanitary norms in the protection zones of oil and gas pipelines, water mains, underground communications, high-voltage power lines, Caspian Sea and other water features.

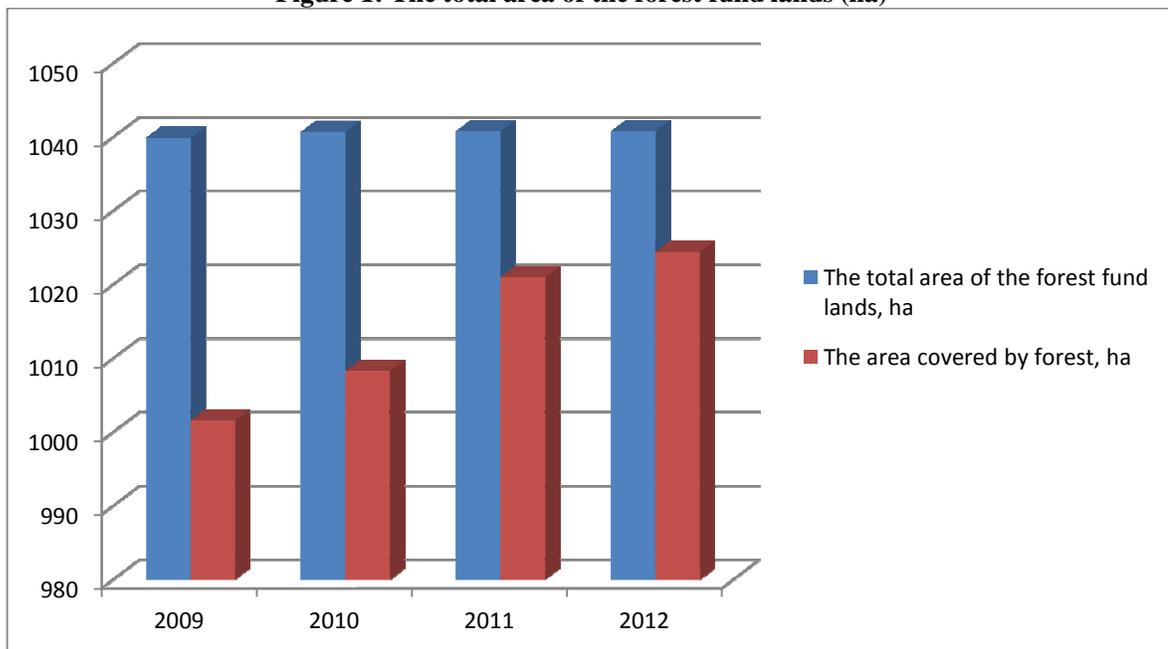
Large-scale use of fertilizers, pesticides, and herbicides has also degraded arable lands. This has been mainly caused by uncontrolled imports of these chemicals into the country, as well as the poorly-informed use of these chemicals by local farmers.

1.3.2 Habitat fragmentation

The alteration and depletion of forest resources has historically had severe ecological impacts in Azerbaijan. In some parts of the country (e.g. on the slopes of the Talish mountains) forests are being still further fragmented as economically valuable timber species (such as nut and oak) are being illegally harvested. Total area of forest fund is 1213, 7 thousand ha, out of which 1021 thousand ha is covered with forest and it constitutes 11, 8% of the total area (refer to Figure 1 below). Per capita forest area is approximately 0.13 ha in the country and it is approximately 4 times less (0, 48 ha) than the average figure accepted internationally. In spite of intensive measures taken for forest conservation, forests cover the north-east of the country, especially south-west of Guba, Gusar, Shabran, Siyazan, Khizi administrative areas; and reduction of forests is observed in the south-west of Khizi area. The woodland in the south macro-slope of the Greater Caucasus in the territory of Shamakhi area is restored and extends till Georgian border. Seeds were sown in 92.28 hectares of seed-plots, 3282,47 thousand

seedlings in the 84,38 hectares area of the growing division, and 799 thousand cuttings were planted in the 16,69 hectares of rooting division in order to cultivate planting materials. 26618,13 thousand variety planting materials are grown in the seed-plots. 1,7 million hectares area of the Republic of Azerbaijan was occupied as a result of Armenian military aggression in 1988-1993. More than 460 species of wild trees and shrubs grow in the occupied territories. 70 of them are endemic and they don't grow naturally in any part of the world. Yew (*Taxus baccata*), Araz oak (*Quercus araxsus*), turkish hazel (*Corylus colurna*), Caucasian wingnut (*Pterocarya pterocarpa*), oriental planes (*Platanus orientalis*), pomegranate (*Punica granatum*), wild grapes, holly (*Buxus hyrcana*), eldarica pine (*Pinus eldarica*), Caucasian persimmon (*Diospyros lotus*), willow-leaved pear (*Pyrus salicifolia*) and other tree species are about to be perished in the occupied territory and erased from the treasury of the world flora.

Figure 1: The total area of the forest fund lands (ha)



Forests are also occasionally impacted by wildfires, most occurring as a result of the burning of maize fields in winter and grass in summer. The outbreak of forest fires has however decreased over the period 2010-2013 (from 24 incidents in 2010 to 8 in 2013) as a result of increased enforcement and better education. Table 7 provides the information related to forest fires.

Table 7: Information on forest fires in Azerbaijan for the period 2010-2012

Years	Number of fires, pcs	Fire surrounded area, ha	Including area covered with forest	Open area without forest (tree-bush)	Kinds of fire, haha		Volume of burnt standing wood, m3	Fire damage, thousand manat
					Low fire	Up fire		
2010	24	55,4	23,7	31,6	55,4	-	18,9	1,1
2011	4	3,8	1,7	2,1	3,8	-	3,2	0,2
2012	8	10,0	6,2	3,8	5,0	5,0	101,9	0,9

As a result of deliberate fires set by the soldiers of Armenian army in the occupied territories of Azerbaijan, 96 thousand ha of meadows, pastures and hay fields, as well as forest areas were destructed; the fertile top layer of the soil is deteriorated. As a result of fires, 176 million manat (225 million USD) damage was inflicted. At the same time, as a result of robbery of natural

resources of Azerbaijan environmental damage inflicted on the internally displaced persons who were ousted from their native lands damage equal to 31,72 billion manat was inflicted.

Overall forest cover has nominally increased from 11.4% of the country's surface area to 11.8 % of the country's surface area) during the period of review (Figure 1), due to active forest rehabilitation programmes.

The conversion of the lowland grasslands into agricultural land, through ploughing and scrub removal, is fragmenting many remaining areas of natural steppes. A number of steppe ecosystems are also being further fragmented by the extensive network of irrigation channels, particularly in the Kura-Araz plain.

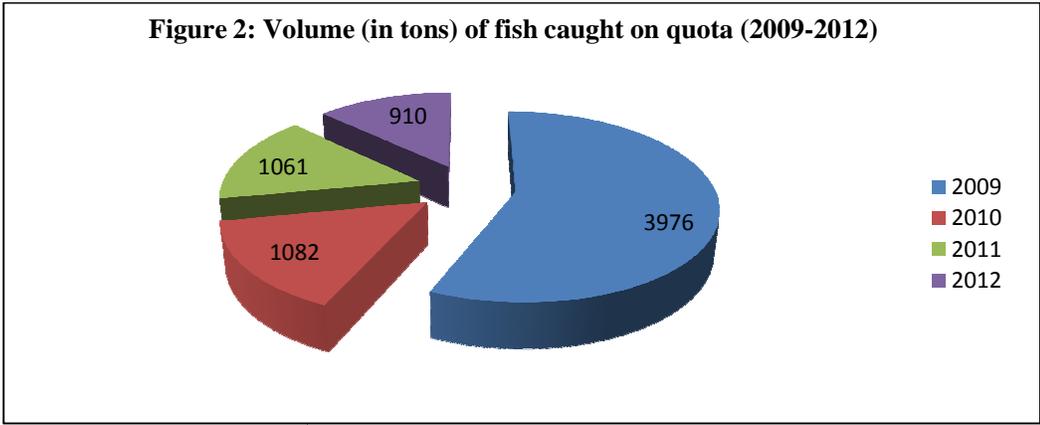
The construction of dams and reservoirs on the major rivers flowing into the Caspian Sea has created obstacles that are effectively fragmenting riverine habitats for some key species. For example, the construction of the Mingechevir and Bahramtapa reservoirs on the Kura and Araz rivers has reduced the breeding areas for anadromous sturgeon species because they are now unable to pass the dams to reach upstream breeding areas.

1.3.3 Unsustainable levels of natural resource use

Land degradation in the grasslands and semi-arid areas of Azerbaijan is increasing at a rapid rate, largely as a result of overgrazing. Livestock husbandry in Azerbaijan is very profitable, so there is continual pressure to increase the size of herds of livestock (mainly sheep, goats and cattle) well beyond the carrying capacity of the vegetation. Recent monitoring of livestock shows that the number of animals per hectare is 10-50 times higher than the grazing norm in some areas, and even more in other areas. This is resulting in the incremental increase in both the extent of the areas under grazing pressure, and the intensity of the grazing pressure. The intensive use of pastures in many areas - such as in the Absheron and Gobustan area - is also resulting in accelerated soil erosion, and the increasing desertification of land. Further, additional herds have also been brought in by refugees and 'Internal Displaced Persons' (IDP) from the occupied districts around the Daghlig-Garabagh (Nagorno Karabakh) region. Many of the animals owned by these communities are now concentrated in areas that are largely unsuitable for livestock, for a variety of reasons, including competition for water and food near settlements and exclusion from summer grazing areas due to conflicts in some mountainous areas. Many winter grounds are now being utilized for livestock grazing throughout the year.

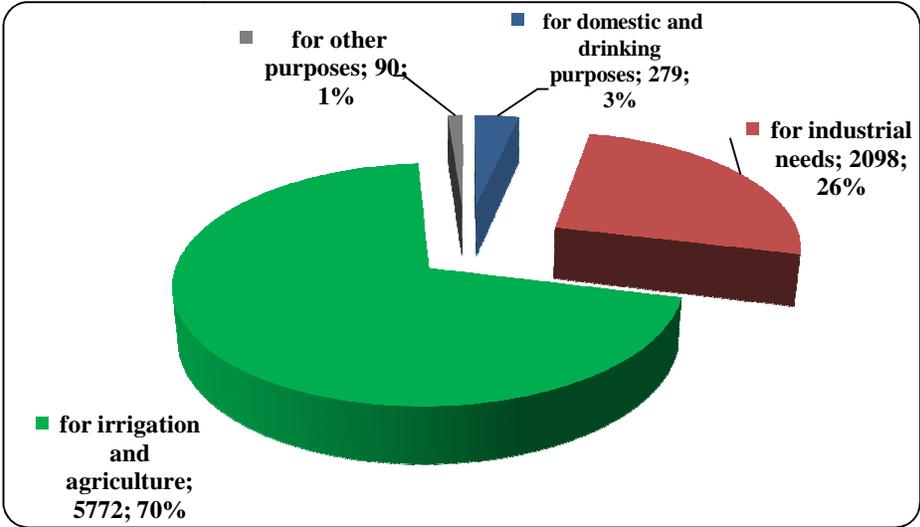
In theory, while all hunting is strictly regulated in Azerbaijan, in reality illegal hunting - for both subsistence and commercial purposes - of wildbirds and game species is still widespread and relatively poorly controlled.

Overfishing - driven by subsistence uses, the demand of local consumers and international demand for black caviar - is widespread in the Caspian Sea and spawning rivers. In spring, spawning sturgeon in the shallow warmer waters often become the victims of illegal poachers. Indiscriminate methods - such as the use of explosives, electric shocking and poisoning - are threatening stocks of sturgeon and other fish species. The Convention on International Trade in Endangered Species (CITES) has now listed all sturgeon species as threatened, including all commercial Caspian varieties. The regulation of fishing licenses and quotas are also not always effectively administered by some of the Caspian littoral states. The volume of fish caught on quota between 2009 and 2012 is shown in Figure 2 below.



Of the approximately 1 billion m³ of fresh water used each year, just under 35% is lost due to the inefficient water distribution systems in Azerbaijan. The breakdown of water usage levels for 2012 is shown below (Figure 2). Of the water used, 70% is sourced from neighbouring countries, and there is currently an annual water deficit in the country of ~400 million m³. Based on the annual report of the State Statistical Committee (2012), 12 484 mln m³ of water was extracted from natural sources in 2012, some 434 mln. m³ (3,5 %) less than in 2005. Of this, only 8 249 mln.m³ was actually consumed. Some 5 772 mln. m³ was used for irrigation and agriculture, 2 098 mln. m³ for industry and 279 mln. m³ for domestic purposes and potable water, while 4 236 mln. m³ (34%) was lost in transit. The water use per capita has reduced from 1 438 m³ in 2005 to 1 336 m³ in 2008 and to 1 361 m³ in 2012. Figure 3 below shows the use (in %) of water, by different sectors, for 2012.

Figure 3: Breakdown of water usage in Azerbaijan (2012)



1.3.4 Pollution

Although several actions have recently been taken to clean up the country - particularly in Baku and the Absheron peninsula - severe pollution can still be found in many areas of the country.

Of particular concern is the limited infrastructure and capacity for effective waste management, particularly in many rural areas and smaller towns.

Only 30% of the country's sewage systems and treatment facilities meet modern sanitary requirements. The main part of the territory of the country - especially the population of rayons - discharges effluents directly into the environment. In 2012, 5 419 mln.m³ of wastewater was generated in 2012. Of this, 220 mln.m³ was discharged untreated into water basins and environment. The volume of untreated discharge of waste waters in 2012 was 59 mln. m³ more than 2005 and 39 mln. m³ more than 2008 (see Figure 4 below).

Figure 4: Discharge of untreated waste water (in million m³) for the period 2000-2012

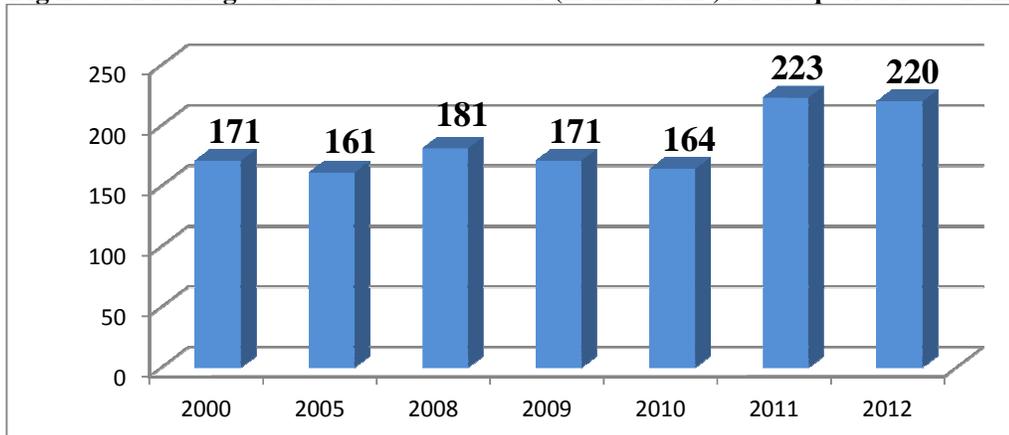


Table 8: State control on protection of water resources by bodies of the Ministry of Ecology and Natural Resources

	2010	2011	2012
Number of enterprises covered by survey, total	215	117	184
of which enterprises exceeding norms of pollutant emissions to water reservoirs, unit		29	56
in percent to total number of enterprises covered by survey	36	25	30
Persons and officials called to administrative responsibility for violation of legislation on water protection - total, person	71	26	56
Amount of the fine, thousand manat	173,9	95,6	83,7
Fixed amount on claims lodged because of violation of water legislation, thousand manat	-	52,6	2,1

The improvement of sorting and movement system of solid wastes, employment of new technologies for solid waste management and the establishment of regional landfills are considered the main priorities to improve domestic waste management.

The majority of the total volume of hazardous wastes (297,0 thousand tons) comprises the wastes formed in the fuel-energy complex, oil and chemistry industry enterprises. The volume of hazardous wastes originated in the oil industry enterprises in 2012 was 165,429 tons from the fuel-energy enterprises, while 304 tons originated from the chemical industry enterprises. While a portion of the hazardous wastes are transported to landfills, the remaining portion is stored in landfill sites. The studies conducted by the Ministry of Ecology and Natural Resources show that storage condition of industrial wastes does not meet with environmental norms and standards in most cases. Moreover, incorrect or sometimes incomplete accounting of originated wastes in a number of entities leads to inaccuracy in overall statistical report indicators. Table 9 below shows the trend in the annual increase of hazardous wastes.

Table 9: Annual volume (m3), by use and disposal, of hazardous wastes in Azerbaijan

	2007	2008	2009	2010	2011	2012
<i>Total quantity of hazardous wastes</i>	1689, 6	1644, 7	1594, 5	1613,3	1717, 5	1764, 5
<i>Quantity of originated hazardous wastes</i>	10,4	24,3	131,8	140,0	185,4	297,0
<i>Quantity of utilized hazardous wastes</i>	5,0	4,8	18,7	5,5	3,6	6,3
<i>Quantity of disposed hazardous wastes</i>	1,2	8,6	10,4	58,4	37,1	113,9

As example of these wastes can serve wastes containing vanadium, nickel and its compounds – 27,330 tons; oil cuttings – 22,355.6 tons; wastes containing mercury – 0.3 tons; acid gudrones – 3418 tons etc. While a portion of the hazardous wastes are transported to landfills, the remaining portion is kept in the premises of enterprises. The studies conducted by the Ministry of Ecology and Natural Resources show that storage conditions of industrial wastes in the enterprises do not meet the environmental norms and standards in most cases. Moreover, incorrect or sometimes incomplete accounting of originated wastes in a number of entities leads to inaccuracy in overall statistical report indicators.

Another important aspect in waste management is their cross-border transport. With the view of performing import, export and transit shipment operations of hazardous wastes in the Republic of Azerbaijan in accordance with relevant legislation or preventing illegal import or export of hazardous wastes to/from the country, in compliance with the requirements of the “Regulations for the trans-boundary movement of hazardous waste” approved with Cabinet of Ministers Decision No. 167, dated 25 July 2008, and Basel Convention “on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal”, with the consent of the Cabinet of Ministers of the Republic of Azerbaijan and under the permission of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, the list of the hazardous wastes prohibited from importing to the Republic of Azerbaijan was developed and submitted to the State Customs Committee in order to regulate the transit, burial and disposal of the hazardous wastes which are impossible to recycle safely. Such actions have a significant importance in enforcement of import and export of hazardous wastes.

At present, improvement of sorting and movement system of solid wastes, employment of new utilization technologies, establishment of modern regional landfills are among the main priorities for improving domestic waste management and eliminating generated problems. Currently, one of the priority areas of the environmental policy of the State is to eliminate the problems, which have been created by domestic wastes over long time, improve management system in accordance with international requirements, efficiently utilize domestic wastes and protect environment and human health. Adoption of state programs, issuance of decrees and decisions, as well as development of advanced projects for improving this system is the evidence of the attention of the State to the problem.

One of the big initiatives of the state in domestic waste management in the country is creation of “Tamiz Shahar” (“Clean City) Open Joint Stock Company established by relevant Decree of the President of the Republic of Azerbaijan on “Improvement of management of domestic wastes in Baku city. The Company is dealing with neutralization and disposal of all solid wastes generated in the territory of Baku city. Balakhani city waste disposal landfill and other domestic wastes landfills located in Surakhani and Garadagh areas are handed over to the management of the Company. A power plant is built in the territory of Balakhani by French company CNIM with the capacity of incineration of 500 thousand tons of domestic wastes to generate 230 mln kw/h electricity annually.

One of such projects was “Solid Domestic Waste Management and Improvement of in Azerbaijan” jointly developed by Ministry of Ecology and Natural Resources and United Nations Development Program. Database was in the framework of the Project for putting in information on waste management, employment of machinery and technology for their transportation, on their content and quantity, storage conditions and collection (gathering), on environmental legislation, regulatory acts and other issues, as well as for processing and updating and transmitting these data to the users.

Atmospheric pollution is currently being monitored by the National Environmental Monitoring Department of Ministry of Ecology and Natural Resources (MENR), and the Sanitary-Epidemiology Centre of Ministry of Health Atmospheric emissions.

Protection of atmosphere is governed by the laws on environmental protection (1999), and protection of atmospheric air (2001). Both laws define framework principles of all regulatory documents and monitoring mechanisms related to environment. In accordance with the law, norms are established for enterprises and vehicles and on all polluting sources in the territory of the country 3816 of the registered 12 374 stationary sources polluting atmospheric air are network sources. Emissions of vehicles to the atmosphere are calculated according to fuel consumption. Air quality monitoring is implemented in 8 cities and 25 monitoring stations (Baku-8, Ganja-5, Sumgait-3, Mingachevir-4, Shirvan-1, Lenkoran-1, Sheki-1 and Nakhichevan-2) based on 18 parameters. In the country 70% of atmospheric air pollution falls to the share of Baku and 30% of Mingachevir, Shirvan and Sumgait.

The quality of atmosphere is monitored by the National Environmental Monitoring Department of Ministry of Ecology and Natural Resources (MENR), and Sanitary-Epidemiology Centre of Ministry of Health. After being analysed the data of National Hydrometeorology Department received in its regional analytic laboratories and in 17 monitoring stations in other cities are collected in the database, and communicated to other interested ministries and entities. On the basis of this data the State Committee on Statistic publishes an annual edition “Environment in Azerbaijan”. Each station carries out the calculation of sulphur dioxide (SO₂), nitrogen dioxide (NO₂) and carbon (C), and some of them calculate other pollutants as well, such as formaldehyde, ammonia, chlorine, mercury or furfural. The examples are taken and analysed 3 times in a day and pollutions are calculated on the basis of daily concentration. The number of emissions released from the stationary sources has been decreased two times during 2000-2012 years.

Among the reasons of decrease of emissions from stationary sources are the employment of new machinery and technologies in manufacturing enterprises, especially in oil and gas refinery plants, replacement of black (heavy) oil with gas in the field of power generation and other measures. The reason of increased emissions from vehicles is related to the increased number of vehicles and lack of the desired level of the road infrastructure. Due to density of population and since number of old vehicles (older than 10 years) exceeds 60% of the total number of vehicles in Baku city, waste volume is extremely increased. It is necessary to conduct reforms in this sphere considering the intensive increase of the number of vehicles.

The emissions from stationary sources to the atmosphere have been significantly reduced, although emissions from vehicles have increased (see Table 10 below). One of the reasons for lower emissions from stationary sources is the employment of more efficient technologies in manufacturing enterprises (especially in oil and gas refinery plants) and the replacement of black (heavy) oil with gas in the field of power generation. The reason for increased emissions from vehicles is related to the increased number of vehicles and poor state of the road infrastructure.

Table 10: Atmospheric emissions for the period 1990-2012 (1000 ton/year)

	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012
Total quantity of emissions	2846,1	908,1	1.054,3	875,1	969,9	922,7	997,1	956,8	1003	1076
From stationary sources	2108,5	515,4	557,9	344,2	385,9	280,7	300	214,8	224	227
%	74	57	53	39	40	30	30	22,4	22,3	21
From mobile Sources	737,6	392,7	496,4	530,9	584	642	697,1	742	779	849
%	26	43	47	61	60	70	70	77,6	77,7	79

Total quantity of emissions from stationary sources decreased 3-14 times between 1990-2000 due to suspension of a number of industrial facilities in the “post-soviet” period. 2 or 3 fold decrease of harmful substances from stationary sources is related to employment of new machinery and technology in 2000-2012. Emissions originating from the transport sector increased 2-16 times in the period between 2000 and 2012. In 2010 emissions from vehicles reached the level of 1990 and it continues growing.

Total volume of the emissions from stationary sources for 2010-2012 is 46,8 % in the extractive industry, 18,8 % in refining industry, 16,6% in distribution and transportation, 15,8% in warehouse economy and telecommunication, 0,8 % in the construction, and 1,2% in other fields. The main reason of pollution of Baku-Absheron Peninsula and Caspian Sea is related to the oil industry. At present, the share of wastes is as follows: 90% in the oil industry, power generation and transport. The share of oil sector on chemical ingredients is 70 % (42-43 % N₂O 35-38 % SO₂, 30-32% CO and 95-98 % hydrocarbons). While in 1990, vehicle emissions were 26% of total environmental pollution, in 2012 this figure reached 78,9 %.

Table 11: Emissions from stationary sources, greenhouse gasses (1000 ton)

Years	2006	2007	2008	2009	2010	2011	2012
Carbon-dioxide (CO ₂)	176,6	148,3	160,1	153,0	144,0	138	124,7
Nitrogen-oxide (N ₂ O)	0,8	1,7	6,4	10,4	11,8	25,9	15,8
Methane (CH ₄)	16,6	24,3	49,5	24,2	18,3	29,8	38,5
Hydrofluocarbons	0,6	0,5	0,2	7,0	6,8	2,0	6,4
Sulphide 6-fluoride (SF ₆)	0,1	0,1	0,2	0,6	0,3	0,7	0,6
Perfluorocarbons	0,9	0,6	0,3	6,4	5,6	1,0	5,6

The volume of emissions from vehicles exceeds emissions from stationary sources is for 3, 74 times and it will continue to rise in the future.

In previous years, Caspian petroleum and petrochemical industries have contributed significantly to oil pollution problems in Azerbaijan. It is estimated that 10,000ha of land in Absheron peninsula, 5,500ha in Gobustan and 12,500ha in South-East Shirvan is however still contaminated by oil. While considerably better managed today, oil pollution from active wells, platforms and pipelines is still an occasional problem.

The Caspian Sea not only suffers from oil pollution, but also from a massive inflow of other pollutants originating from the industries in the river basins of its tributaries, mainly the Volga and Kura-Araz basin. Even today, untreated municipal, industrial and agricultural wastes from some neighbouring countries still adds to the flow of the Kura river (which is an important source of water for Azerbaijan) - via the Mingchevir Reservoir (which fortunately acts as a settlement area for some of the pollutants) - through Azerbaijan to the Caspian Sea.

Pollution case study – Kura and Araz rivers

Nearly 75% of the territory of Azerbaijan is located in the lower parts of the Kura River basin, which is the biggest water artery of the South Caucasus. The pollution of rivers flowing into the basin from the territories of neighbouring countries and occupied territories causes some ecological tension. At present, all of the rivers running through Azerbaijan are already heavily polluted by the time they enter the country.

Kura river

Five-year observation results indicate that the pollution level of the Kura river is several times higher than the norm (according to the Water Pollution Index, WPI). The amount of phenols in the water are 7-9 times more than the norm, copper compounds 5-7 times higher, oil products 1,2-2,8 times higher, and the amount of biogenic substances are 1,4-3,7 times higher.

Araz River

Five-year observation results indicate that the pollution level of the Arazriver is several times higher than the norm (according to the Water Pollution Index, WPI). Copper compounds in the water are higher by a factor of 8-11, phenols by a factor of 5-7, oil products by a factor of up to 1,4, and sulphides by a factor of 1,4-1,8.

1.3.5 Invasive species

There are several species that are considered to be invasive in Azerbaijan. One of the most notable is the comb jelly *Mnemiopsis leidyi* - an introduced species that invaded the Caspian Sea through the Volga Don channel. Its population has now multiplied to the extent that the biomass of the population has exceeded the general productive biomass of the sea. It has no natural predators, and climatic conditions favour its growth and reproduction. It feeds on animal plankton, including the planktonic larvae of fish, and as such, is capable of seriously undermining economically and biologically important fish (e.g. sturgeon) and mammal (e.g. Caspian Seal) populations.

Invasive plant species include the widely distributed common ragweed (*Ambrosia artemisiifolia*), buffalo bur nightshade (*Solanum rostratum*) and the Russian knapweed (*Acroptilon repens*).

The introduced American racoon (*Procyon lotor*) has now successfully spread into most of the forests of Azerbaijan. The invasive fall webworm (*Hyphantria cunea*) is also known to cause substantial damage to commercially grown ornamental trees and shrubs and to several agricultural crops.

1.3.6 Climate change

The biodiversity of the marine and coastal environment in Azerbaijan may be particularly vulnerable to the effects of climate change. At present, most scientists seem to agree that climate change plays a significant role in sea level fluctuations in the Caspian Sea, since temperature increases and changes in precipitation directly impact the overall water balance. It is forecast that mean annual temperatures in the Caspian Sea will increase by between 3.7 and 4.9⁰ C by the middle of next century, while annual precipitation will increase by an average of 52mm (GFDL, CCC and UKMO models) or decrease by between 4-8mm (GISS model). There is however still a lack of reliable data, information and analysis of climate change on water level fluctuations and the concomitant social, environmental and economic impacts².

²Various studies carried out by the Caspian Sea littoral states vary greatly in their analysis of the impacts of climate change.

Climate change is one of the serious factors functionally affecting ecosystems and eventually causing decline in biodiversity. The analysis of possible climate changes in the territory of Azerbaijan were studied on the basis of 100 years observations. Studies suggested that during 100 year of observations, the air temperature increased 0.5-0.6°C in the territory of the country, and the rise of air temperature was even higher in 1961-1990 - 0.3-0.6°C.

Desertification process will speed up in Azerbaijan. As the initial stage of the inventory process of GHG (Greenhouse gasses) is already completed by the Ministry of Ecology and Natural Resources, preliminary analysis of emission dynamics has been conducted. Total volume of emissions from stationary and mobile sources has continued declining versus to 1990. However, in spite of decline in the volume of emissions from stationary sources, the emissions from mobile sources is increased for 12.7% in comparison with reference year 2010, and for 34,7% in comparison with 2005.

Decline in total volume of wastes was possible through a number of activities implemented in the energy sector. Such activities include practical transition of energy sector to natural gas as fuel, reconstruction of thermal power plants, and construction of new power plants with high energy efficiency, wide-scale application of metering and monitoring devices in the consumption sector and the projects implemented in the field of hydro-power development. New technologies are introduced in oil and gas sector for capturing associated gasses and thus emission of methane gas to air is reduced.

Certain activities were implemented over the last years in terms of climate change adaptations and climate change impact mitigations in the Republic of Azerbaijan.

The main priority for Azerbaijan is adaptation to climate change. Agriculture, optimal management of water resources, restoration of forests, afforestation, conservation and efficient use of agricultural biodiversity in arid and semi-arid zones, struggle against desertification are the main adaptation areas, and relevant works are implemented with participation of NGOs. Coming into effect, Kyoto Protocol and one of its mechanisms - "Clean Development Mechanism" enabled negotiations with a number of states in this sphere. Memorandum on collaboration in the area of GHG reduction was signed between Azerbaijan and the Kingdom of Denmark, and works are underway for signing memorandums with Norway, Germany, Japan and a number of other states.

A group of experts representing various fields of economy was established with the coordination of Ministry of Ecology and Natural Resources with the view of expansion of these activities in the Republic. The projects such as "Use of wind and solar energy" in Pirallahi meteorological station as a demonstration Project, "Restoration of thermal system in Sumgait lyceum", "Creating woodland consisting of fast-growing tree species for CO₂ absorption and supplying population with wood in Shabran area", "Replacement of ordinary power bulbs with fluorescent lamps which are their equivalents and use less power" projects were implemented with direct support of Canadian International Development Agency.

Projects on installation of wind, solar and small water power plants are implemented in the country. Activities are implemented for increasing the share of alternative energy in the energy sector to 10-15% in the subsequent years, and to 20% by 2020.

PART II: The national biodiversity strategy and action plan, its implementation and the mainstreaming of biodiversity

2.1 Biodiversity targets for Azerbaijan

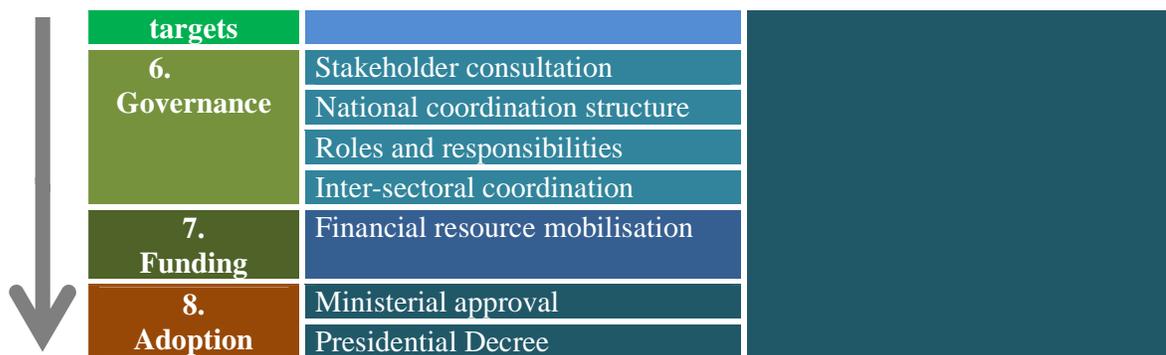
The *National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity in Azerbaijan* (2006) was prepared prior to the adoption of the *CBD Strategic Plan for Biodiversity 2011-2020* and is not aligned with the Aichi Biodiversity Targets. Azerbaijan is however currently in the process of revising and updating its' NBSAP (see 2.2 below) and, as part of this process, will develop measurable targets and indicators that will enable the country to more effectively report on its contribution to meeting the Aichi Biodiversity Targets.

The MENR is also, with the support of the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ), developing a National Biodiversity Monitoring System (NBMS) for Azerbaijan. The first version of the NBMS (2013) defines 20 pressure, state and response indicators, of which 15 are considered as priority indicators for the country. Once fully developed, the NBMS will be integrated into the updated and revised NBSAP for Azerbaijan

2.2 Revision of the NBSAP to incorporate the Aichi Biodiversity targets

In August 2013, Azerbaijan initiated the process of reviewing, revising and updating its NBSAP, with financial and technical support from GEF, UNDP and GIZ. The updated NBSAP will cover the period 2015-2020) and will include the following broad steps:

1. Preparation	Stakeholder engagement	
	National stocktaking	Conservation technical report Impact management technical report Mainstreaming technical report Capacity technical report
	Reporting to CBD	<i>Fifth National Report (March 30, 2014)</i>
2. Clearing House Mechanism	Website development	CHM website
3. Strategy Development	Stakeholder engagement	<i>Order of the President of the Republic of Azerbaijan on approval of the NBSAP (2015-2020)</i>
	Goals, strategic themes, outcomes	
4. Developing actions for strategic themes	Stakeholder engagement	
	Strategic approach, priority actions	
5. Setting and monitoring	Stakeholder engagement	
	Setting targets and indicators	
	Monitoring approach	



It is anticipated that the updated NBSAP (2015-2020) will be formally approved and adopted in 2015.

2.3 Actions taken to implement the CBD since the fourth report, and the outcomes of these actions

Only the actions taken subsequent to the Fourth National Report (*Country Study on Biodiversity of Azerbaijan Republic*, 2010) are reported on below. The reader is advised to refer to the Fourth National Report and the NBSAP for more substantive information on the country's long-term approach to the national implementation of the CBD.

For ease of cross-reference, the actions taken by Azerbaijan to implement the CBD are linked to the five strategic goals of the *CBD Strategic Plan for Biodiversity 2011-2020*. The information presented in this section should also be read in conjunction with the additional information presented in Sections 2.4 and 3.1.

For the sake of brevity, only significant and strategic areas of progress (either in scale or in impact) over the last three years are reported on. The ongoing 'business-as-usual' biodiversity mainstreaming and biodiversity conservation activities that occur on a daily basis are assumed, but not specifically reported on.

2.3.1 Strategic goal A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Key recent actions and outcomes:

- The *Azerbaijan 2020: Outlook for the future' Development Concept*(2012) has been adopted and provides an overarching integrated framework for achieving sustainable socio-economic development in the country.
- The *State Programme for Poverty Reduction and Sustainable Development in the Azerbaijan Republic* (SPPRSD), covering the period 2008-2015, is under full implementation and has a strong environmental component. It aims to *inter alia*: increase the coverage of protected areas to 12% of the country; reduce greenhouse emissions in the power sector by 20%; and achieve 100% treatment of all sewerage and wastewater.
- In support of the SPPRSD, the *State Programme for the Socio-Economic Development of the Regions of the Azerbaijan Republic* (2009-2013) is implementing specific measures related to the treatment of wastewater, the construction of water supplies and the rehabilitation of the Caspian Sea environment and its coastal territories.

- The *State Strategy on Use of Alternative and Renewable Energy Sources (2012-2020)* has been adopted and provides the strategic framework for the adoption of alternative and renewable energy sources in the Azerbaijan.
- The *State Program on the reliable food supply of population in the Azerbaijan Republic (2008-2015)* is under full implementation.
- The *National Program on forest restoration and expansion* is under full implementation (see also 2.3.3 below).

2.3.2 Strategic goal B. Reduce the direct pressures on biodiversity and promote sustainable use

Key recent actions and outcomes:

- Eleven fish breeding plants (primarily for sturgeon, carp and salmon) are being maintained, with about 4000 sturgeon (of various species and age groups) bred for rehabilitation purposes.

2.3.3 Strategic goal C. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Key recent actions and outcomes:

- Samur-Yalama National Park (11,772 ha) proclaimed in 2012.
- Feasibility assessment completed for a biosphere reserve in the Zaqatala-Balakan rayon
- Re-introduction of goitered gazelle (Aqqol National Park – 30; Acinohur-Sarica plain – 50; Gobustan-Jangichay area – 40; and Korchav -10).
- Mid-term storage gene banks established for the following additional species/varieties: grain and grain-legume varieties (50)
- Mid-term storage semen bank (Azerbaijan Livestock Research Institute established for the following additional species: Swiss, Simmental and Black-White cattle breeds; and Murrah buffalo breed.

2.3.4 Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services

Key recent actions and outcomes:

- 10,131 ha of forest habitat under active restoration (7,385 ha of rehabilitation and 2,746 ha of seeding and cultivation).
- Eight large-scale greening projects underway in Baku city and Absheron peninsula, covering an area of 1,556 ha.

2.3.5 Strategic goal E. Enhance implementation through participatory planning, knowledge management and capacity-building

Key recent actions and outcomes:

- None

2.4 Effectiveness of the mainstreaming of biodiversity into relevant sectorial and cross-sectorial strategies, plans and programs

The effectiveness of initiatives to mainstream biodiversity into the strategies, plans and programmes of relevant production sectors in Azerbaijan has historically been limited. The recent adoption of the National Development Plan, *Azerbaijan 2020: Outlook for the future' Development Concept* in 2012 has however now created the enabling framework for improving the mainstreaming of biodiversity into key production sectors. The National Development Plan specifically identifies the measures that will be required to protect biodiversity, neutralize the negative impact of the fuel-energy complex on the environment, eliminate the pollution of the sea and its basin, protect marine and freshwater ecosystems, restore green areas and effectively protect the existing natural habitats and resources. Each State Agency responsible for overseeing the implementation of each production sector is now in the process of, or has already completed, revising their medium-term strategies and state programs to more fully align with the objectives, outcomes and activities identified in the National Development Plan.

The key biodiversity mainstreaming activities undertaken in the last three years are briefly presented for each of the key production sectors in Azerbaijan. Case studies of successful initiatives underway, or already completed, are further elaborated in the case study boxes.

2.4.1 Energy sector

The State Agency on Alternative and Renewable Sources was established in order to accelerate the issues set forth the “State Program on Use of Alternative and Renewable Energy Sources”. The activities of the Agency includes the implementation of state regulation on the use of alternative and renewable energy sources, provision of services, establishment of relevant energy enterprises and complexes, as well as identification of alternative and renewable energy sources, and organizing the activity of this field efficiently. Public awareness programs are implemented on the use of alternative energy with the support of NGO Support Fund.

Alternative and renewable energy sources – case study

It is anticipated that by 2020, 20% of the energy needs will be met by alternative and renewable energy sources. Significant progress has been made towards meeting this target, including:

- The construction of a wind farm with 100 MWt was completed in the Gobustan rayon.
- Hybrid solar-wind farm projects have been developed with 5 MWt in Gobustan and 10 MWt in Absheron.
- Seventeen energy project proposals were registered at the CDM National Designated Authority,
- The 40 MWt capacity Yashma wind park project, Sumgait Power Station project, Optimization of AzDRES and Balakhani Landfill project “From waste to energy” (4 projects) were registered as CDM projects at the Executive Board of the Framework Convention on Climate Change.
- Four energy projects are still in the validation stage.
- Within the framework of INOGATE, the Support to Energy Market Integration and Sustainable Energy in CIS countries (SEMISE) project was initiated in 2012.
- The collection of relevant information by COPEC Company (South Korea) on the use of alternative and renewable energy sources (wind, solar) in the Mil-Muqan plain in the Absheron Peninsula and related study works are continuing.
- Individual biogas installations have been installed and commissioned in 5 upland villages with the support of Ministry of Ecology and Natural Resources..

In partnership with the Government of Azerbaijan, BP has adopted an ISO 14001-compliant EMS in Azerbaijan. Some 475,9 thousand tons hydrocarbon was combusted in the BP operations in Azerbaijan in 2012 which is approximately 19% less compared with 2011. Also,

5% gas was consumed in 2012 which enabled to the combustion of relatively less overall GHG emissions together with flared gas in 2012. BP is also restoring the vegetation along the South Caucasus pipeline, with measures being implemented to restore the endangered *Iris acutiloba* plant. Natural habitats around the Sangachal Terminal are also actively being protected. SOCAR has similarly developed a zero waste strategy on associated gas management in the oil and gas sector.

2.4.2 Agricultural sector

A number of incentives have been developed by the government to improve agricultural productivity and reduce the environmental impacts of agricultural activities, including: introducing state subsidies for cultivation costs associated with biofuels (40 Manats/ha); developing large-scale cattle husbandry complexes for more intensive development of livestock (e.g. “Aqat-aqro” LTD, “HacıCamalxan” farm enterprise, “Gilan” livestock complex, “Gabala agro-complex”, “Qarabagh agrarian-industrial complex”, “Shaki Agro Industries”, “Bilasuvar milk” LTD, “Nurgun Agro” LTD, “Shahdag ” farming enterprise); exempting agricultural producers from tax; securing preferential loan rates for farmers; improving the knowledge and skills of more cost-effective and sustainable farming approaches; and improving insurance mechanisms for farmers.

Ministry of Agriculture has implemented a number of activities in terms of implementation of the “2008-2015 State Program on the reliable food supply of population in the Azerbaijan Republic”. Works are carried-out over the last few years to expand tea farming in the country. Interest in restoration of tea fields and setting up new plantations has increased. It has resulted in expansion of 321,5 hectares of tea cultivation area up to 873 hectares. Expansion of sugar beet production directly depends on the only sugar manufacturing enterprise of the Republic – Imishli sugar plant. Sugar beets were planted under contract in 3614 hectares of land in 2012. 5465,6 hectares were planted under the contract for the yield of 2013, and currently the areas are cultivated. There is a great potential for producing sunflower, corn, soya, olive and oil plants in the Republic. The soil and climate is very suitable even for getting the 2nd yield, by planting these plants after grain and autumn vegetables. Corn was planted in 38576,6 hectares, and sunflower was planted for seeds in the area of 9293,7 hectares in 2013.

Figure 5: Crop production, thousand, ton

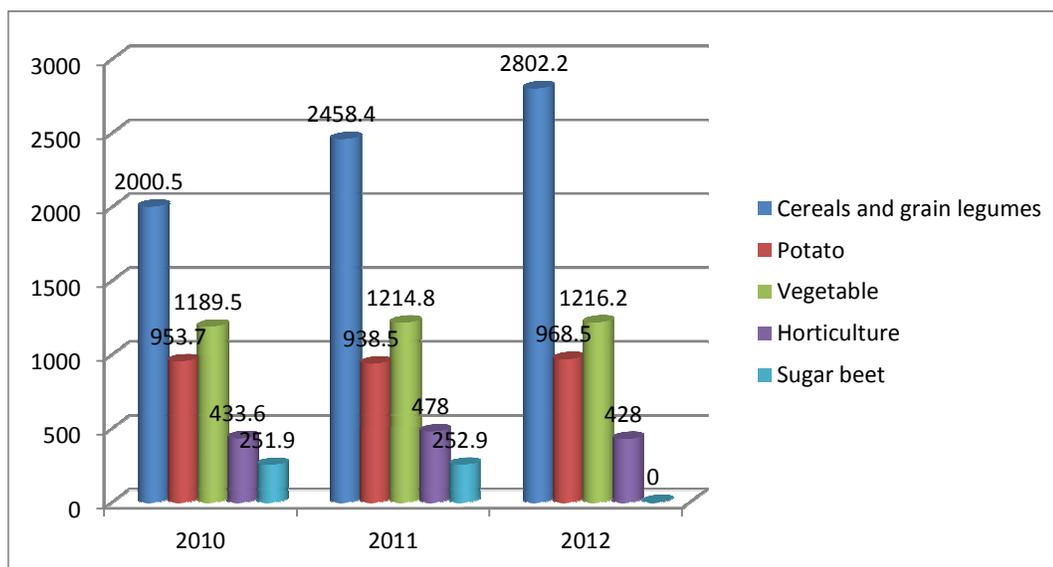
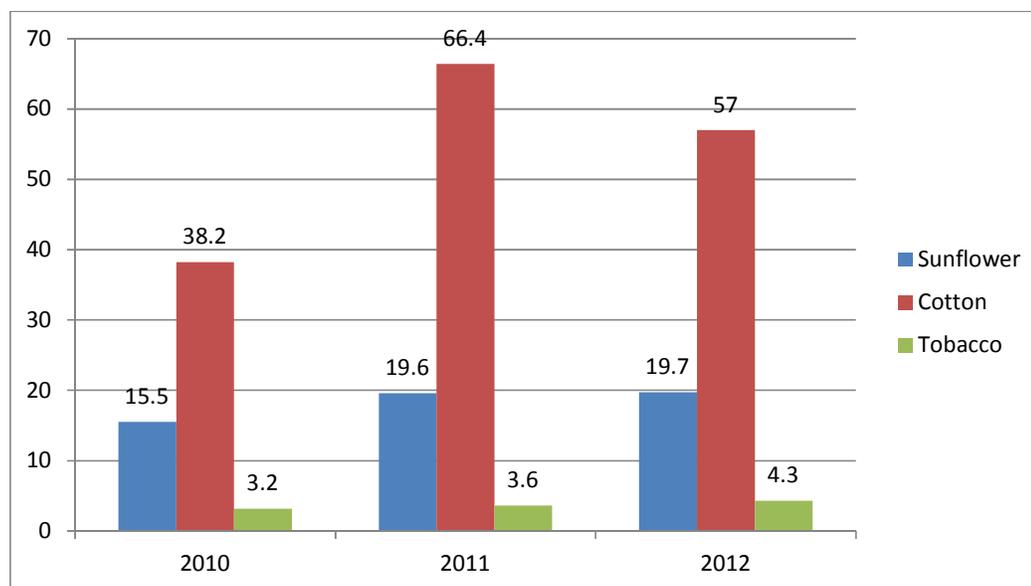


Figure 6: Crop production, thousand ton



As of 2010, about 500 sample seeds of corn genetic fund were planted for renewal in open condition in the Zaqatala Regional Experimental Station of Azerbaijan Research Agronomy Institute. Furthermore, about 50 local and introduced grain and grain-legume plant species samples were included to the mid-term genetic storage bank, and the related biologic and farming indicators were put in the database.

In view of it, Ampelographic collection garden was further enriched in Azerbaijan Scientific-Research Vine-growing and Wine-making Institute in order to enrich the national genetic bank consisting of ancient, aboriginal, newly created and introduced from overseas grape species.

Azerbaijan Research Horticulture and Subtopic Plants Institute hosted expeditions and continued scientific studies for collection of grainy, subtropical and citrus fruit plants, folk selection, European origin and other species and their forms. It is expected that new fruit and tea varieties will be delivered to the State Variety Test by the end of the year.

Table 12: Target indicators of “State Program on the reliable food supply of population in the Azerbaijan Republic for 2008-2015”.

S/N	Targets	Target indicators for 2015
1	Cultivated area of crop (thousand ha) (with maze)	900
2	Crop productivity (c/hectares)	32
3	Total produced crop (million ton)	2,8
4	Potato production (million ton)	1,12
5	Production of vegetables and melon plants (million ton)	1,72
6	Production of fruits (thousand tons)	800
7	Arable lands for oily plants (thousand ha)	135
8	Arable lands tor sugar beet (thousand ha)	20
9	Tea leaf production (ton)	3000
10	Arable lands for forage plants (thousand ha)	500
11	High quality, balanced and mixed forage production (thousand tons)	2000

In order to mitigate the effect of climate change, priority has been given by the State to: (i) the development and cultivation of agricultural plant varieties which are more resistant to the effects of drought, frost, diseases and pests; (ii) the improvement of farming methods and technologies; (iii) the improvement of irrigation methods and water-use efficiencies; and (iv) reducing and eliminating the use of dangerous pesticides and fertilizers. Activities have been performed towards expansion of employment of advanced aimed at efficient use of irrigation water and prevent the soil degradation.

2.4.3 Forestry sector

The main driver of forest loss- clearing for wood fuels – is declining with the increasing coverage of gas supplies to communities. A number of state programmes are being implemented to now expand the national forest coverage, green urban areas and rehabilitate the ecological functioning of degraded forests. Wide-scale national forest planting and greening initiatives have been undertaken over the last 5 years. Most of the species of trees and bushes used for forest planting and greening are fast-growing trees and bushes (e.g. chestnut oak, chestnut, ash, plane tree, cypress). Regular maintenance of forests is being implemented to protect forest species from various diseases and pests. In accordance with the “National Program on forest restoration and expansion” forest restoration activities were implemented in the area of 53215 hectares, more than 620 thousand kg of valuable tree and shrub seeds were procured in 2008-2012. A number of activities are implemented to prevent forest fires. Forest fires were almost prevented, thanks to prophylactic and preventive measures. Forest fires were recorded in 78,9 ha area in 2009-2010, 3,7 ha in 2011, and 9,97 ha in 2012. Reforestation measures were taken in the area of 10131 hectares instead of the forecasted 10120, along with forestation and sowing works in the area of 2746 hectares instead of the forecasted 2745. In the area of 7385 hectares, measures were taken for assisting natural reforestation.

2.4.4 Public utilities - waste water treatment

Water-sewage treatment projects in the centres of rayons have been initiated under the State Programs “Socio-economic development of regions” and “Poverty reduction and sustainable development”. The installation of module type water treatment facilities has been completed in 60 villages of 12 regions (including those of Nakhichevan Autonomous Republic).

2.4.4 Fishing and aquaculture sector

The main priority of fishing sector for the Caspian littoral states is to develop a more sustainable fisheries and aquaculture industry, and to strictly regulate fishing of sturgeon species in the Caspian Sea. In support of this, Azerbaijan has recently prepared a new draft version of the Law on Fishing. The new law will seek to better provide for a sustainably developed and managed fishery and aquaculture industry in Azerbaijan.

Currently there are 12 fish breeding enterprises operating in Azerbaijan. These facilities focus on raising juvenile fishes of commercial and environmental fishery significance (mainly carp, salmon and sturgeon). In 2012, 65, 76 million juvenile fish - including 3,443 million species of sturgeon, 185, 78 salmon, 362, 13 million species of carp - were bred and released into the Caspian Sea, and associated water basins, by these fish breeding enterprises.

Table 13: Information on the release of juvenile fishes by the Department for Improvement and Conservation of Bio-Resources in the Water Basins and its subordinated fish breeding enterprises in 2013

№	Names of fish breeding enterprises	Unit of Measurement	Fact
1	Shirvan Sturgeon fish breeding plant	million	
	Species of sturgeon		0,578
	Carp		2,1
2	Kur-Aqzi Sturgeon fish breeding plant, named after J. Javadov	million	
	Species of sturgeon		0,725
	Carp		3,085
3	Kura experimental sturgeon fish breeding plant, named after S. Q. Karimov	million	
	Species of sturgeon		0,215
	Carp		2,195
4	Khilli Sturgeon fish breeding plant Species of sturgeon	million	2,496
5	Gabala Salmon Fish breeding plant, named after Q. Yusifov Salmon	thousand	42,55
6	Chaykand Qızıl Fish breeding plant Salmon	thousand	72,5
7	Azerbaijan Experimental Marine Fish breeding plant Salmon	thousand	51,1
8	Varvara Fish breeding and fish raising plant Species of carp and the species feeding with plants	million	8,0
9	Minor Qizilagaj BT Species of carp	million	218.585
10	Tovuz Fish breeding farm Species of carp	million	10,562
11	Kur-Aqzi Sturgeon fish breeding plant, named after Javadov Species of carp	million	79,48
12	Davachi Fish breeding station Species of carp	million	52,4
13	Species of sturgeon	million	4,023
	Species of carp	million	376,41
	Salmon	thousand	166,15
Total		million	380,59

2.4.5 Environmental Impact Management

Based on the existing legislation of the Republic of Azerbaijan environmental impact assessment is conducted in two forms: public environmental examination and community environmental examination. Public environmental examination is conducted by the Ministry of Ecology and Natural Resources, and community environmental examination is conducted by non-governmental organizations. Based on the existing legislation the feedback of the public environmental examination is mandatory, and the feedback of community environmental examination is of recommendation nature. Public environmental examination is conducted with

the funding of project client, and community environmental examination is conducted with the funding of non-governmental organizations, local self-governing agencies, and with the allocations of the foundations not prohibited by the law.

In accordance with the Action Plan “On approximation of the legislation of the Republic of Azerbaijan to the legislation of European Union (2010-2012)” the draft law on “Assessment of Environmental Impact” was developed by relevant working group and delivered to the Parliament in order to further improve the related legislative base and ensure them to meet fully to international requirements.

2.5 Implementation status of NBSAP

Table 14 below briefly summarises the extent to which the *National Strategy and Plan of Action on Conservation and Sustainable Use of Biodiversity in the Republic of Azerbaijan* has been implemented. It provides an indication of the state of progress (complete; partially implemented; ongoing; or limited progress). It also describes a few headline indicators of recent activities undertaken during the period of review. It does not however describe the routine, ongoing activities that have taken place over the last three years.

Table 14: Extent to which the *National Strategy and Plan of Action on Conservation and Sustainable Use of Biodiversity in the Republic of Azerbaijan* has been implemented, and headline activities undertaken during period of review.

1. Strengthening measures in conservation of biodiversity and genetic resources	
1.1. Review and revise the list of rare and endangered plant and animal species that have national and international status	
COMPLETE	The 2 nd Edition of the Red Data Book was completed and published in 2013
1.2. Identify and assess the ecosystems with rich biodiversity	
COMPLETE	The <i>Ecoregion Conservation Plan for the Caucasus</i> (2012) identifies the Priority Conservation Areas to focus conservation actions in the Caucasus ecoregion of Azerbaijan. The <i>National Caspian Action Plan</i> (NCAP) identifies the Priority Conservation Areas to focus conservation actions in Azerbaijan’s territorial waters of the Caspian Sea.
1.3. Undertake activities to conserve rare and threatened species	
ONGOING	More than 130 goitered gazelles have been reintroduced to their historical ranges – as part of a phased reintroduction programme - in Aqqol National Park, the Gobustan-Jangichay valley and the Acinohur –Sarija plain. In October 2013, a further 10 goitered gazelles were sent to the Republic of Georgia for reintroduction to their historical range in Georgia. It is also planned to reintroduce European bison to Azerbaijan in phased stages, starting in 2014. A wildlife rehabilitation centre was constructed in the territory of Altiaqaj National Park. Rare and threatened animals and birds are being released back into the wild after rehabilitation in the centre. The population status of the endangered Asian leopard is currently being monitored using photo-traps.
1.4. Conserve and rehabilitate migration corridors	
PARTIALLY IMPLEMENTED	Recurrent activities underway
1.6 Assess status of agricultural crops and animal species, and ensure their conservation	
PARTIALLY IMPLEMENTED	Recurrent activities underway
1.6. Create and enhance biodiversity in urban and industrial landscapes	
ONGOING	Eight large-scale greening projects are underway in Baku city and Absheron peninsula, currently covering an area of 1,556 ha. The President of the Republic of Azerbaijan signed an Order on the establishment

	of a Zoological Park on 26 December 2008. The main objectives of the park includes: education; awareness-raising; and the restoration and reintroduction of rare and endangered fauna species. The process of establishing the zoological park has now started.
1.7. Undertake research in the field of biodiversity conservation	
ONGOING	The monitoring of mammal and bird populations are conducted annually (birds in January and mammals in October) in the specially protected natural areas.
1.8. Improve, efficiently use and conserve soils for biodiversity enhancement	
ONGOING	Recurrent activities underway
2. Expansion of protected areas	
2.1. Expand protected area network	
ONGOING	2008: Goygol National Park established; Korchay State Nature Reserve established; Zaqatala State Nature Reserve expanded; Zaqatala State Natural Prohibited Area established; Hirkan National Park expanded 2009: Arpachayi State Natural Prohibited Area established; Rvarud State Natural Prohibited Area established; Ordubad National Park expanded; Shahbuz State Nature Reserve expanded and renamed Zangazur National Park 2012-2013: Samur-Yalama National Park established; funding for establishment of Qizilagaj marine National Park secured
3. Conservation and efficient use of forest biodiversity	
3.1. Support sustainable use of forests	
ONGOING	Recurrent activities underway
3.2. Enhance community involvement in sustainable use of forests	
ONGOING	Recurrent activities underway
3.3. Develop ecotourism to ensure sustainable livelihoods	
PARTIALLY IMPLEMENTED	Administrative and tourism infrastructure of Shahdag, Shirvan, Hirkan, Altiaqaj National Parks improved
4. Conservation of biodiversity in trans-boundary areas	
4.1. Study and conserve biodiversity resources shared with bordering countries	
ONGOING	The territory of Zaqatala State Nature Reserve was expanded to the border of the Republic of Georgia.
4.2. Improve cooperation and information exchange mechanism with bordering countries	
ONGOING	A number of seminars, training courses and workshops were organized with biodiversity-related organizations in trans-boundary countries.
5. Ex-situ conservation and regeneration of rare and threatened plant and animal species	
5.1. Ensure sustainable conservation of rare and threatened plant and animal species ex-situ	
ONGOING	Recurrent activities underway
5.2. Conserve genetic resources	
ONGOING	Mid-term storage gene banks established for the following additional species/varieties: grain and grain-legume varieties (50) Mid-term storage semen bank (Azerbaijan Livestock Research Institute established for the following additional species: Swiss, Simmental and Black-White cattle breeds; and Murrah buffalo breed.
6/7 Improvement of international information exchange and cooperation	
6.1. Explore necessary opportunities and strengthen international cooperation for management of biodiversity	
ONGOING	Recurrent activities underway
6.2 Improve information exchange and cooperation at the international level	
ONGOING	Recurrent activities underway
7.1. Develop cooperation between organizations dealing with biodiversity conservation	
ONGOING	Refer to Appendix II
8. Improving environmental education and increasing public awareness	
8.1. To set up a modern basis for educational and awareness raising purposes	
ONGOING	An "Inter-city commission for environmental education and enlightenment" has been established to co-ordinate environmental education and awareness-raising in Azerbaijan.
8.2. Improve biodiversity education	

ONGOING	Recurrent activities underway
8.3. Widely disseminate information on biodiversity and its conservation	
ONGOING	Recurrent activities underway, including: - TV series on pollution, desertification, grazing, fires, hunting, plant collection and sturgeon conservation aired - Annual environmental reporting competition - Aarhus Public Environmental Information centres established in in Baku, Ganja and Qazakhrayons.
9. Protection of cultural heritage and traditions related to biodiversity	
9.1. Identify and support cultural heritage and traditions of local population related to biodiversity	
ONGOING	Yanardağ” State historical-cultural and nature, “Keshikchidağ” State historical, “Khinaliq” State historical-architecture and ethnography and “Atashgah temple” State historical-architecture reserves established Ancient handcrafts displayed in trade shows. Small workshops of pottery, carpet-making and blacksmiths established under the historical and ethnography reserve “Qala” with the support of NGO “Ekosfera”.
10. Achieving application of socio-economic incentives encouraging biodiversity conservation	
10.1. Extend social and economic measures encouraging biodiversity conservation	
PARTIALLY IMPLEMENTED	Recurrent activities underway
10.2. Create legal basis for social and economic incentives encouraging biodiversity conservation	
PARTIALLY IMPLEMENTED	Recurrent activities underway
11. Improving legislation on biodiversity	
11.1. Bring the biodiversity-related laws of the Republic of Azerbaijan in conformity with international standards	
ONGOING	Refer to Appendix II
12. Financing action plans on regeneration, conservation and efficient use of biodiversity	
12.1. Encourage international investment in biodiversity conservation	
ONGOING	Recurrent activities underway
12.2. Encourage investment in biodiversity from entities within Azerbaijan	
ONGOING	Recurrent activities underway
13. Regulation of activities having negative impacts on biodiversity	
13.1. Reduce negative impact on biodiversity	
ONGOING	Recurrent activities underway

PART III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the MDGs

3.1 Progress in meeting the Aichi Biodiversity Targets

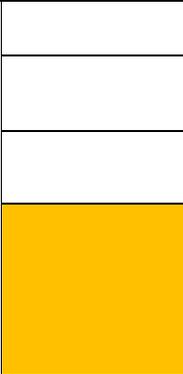
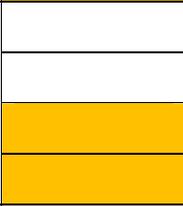
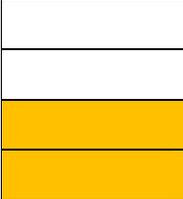
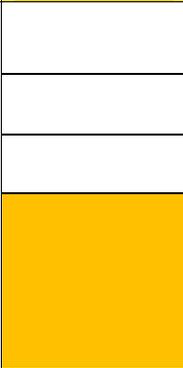
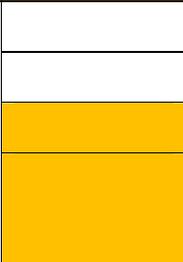
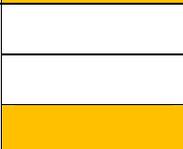
As noted in 2.1 above, Azerbaijan does not yet have a consolidated biodiversity monitoring system that would enable it to systematically report on progress in the implementation of the *Strategic Plan for Biodiversity 2011-2020* and its Aichi Biodiversity Targets.

Table 15 below provides an indicative overview of Azerbaijan's current state of progress (0-25% = limited progress; 25-50% = fair/reasonable progress; 50-75% = good progress; 75-100% = excellent progress) in meeting the Aichi Biodiversity Targets. The headline indicators used to assess the state of progress are briefly listed and, where reliable data is available, quantitatively described.

Table 15: Overview of Azerbaijan's state of progress in meeting the Aichi Biodiversity targets

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society		
Target 1 - By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	Trends in awareness, attitudes and public engagement in support of biological diversity and ecosystem services. <i>Moderate increase of public awareness of, and attitudes to biodiversity, notably in urbanized areas; limited engagement of public in support of biodiversity.</i>	
Target 2 - By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Trends in integration of biodiversity and ecosystem service values into sectoral and development policies. <i>Recent adoption of the Azerbaijan 2020: Outlook for the future' Development Concept (2012) provides an overarching integrated framework for achieving sustainable socio-economic</i>	

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
	<i>development in the country. Sectoral and development policies being aligned to framework.</i>	
Target 3 - By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, taking into account national socio economic conditions.	Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalize adverse impacts.	
Target 4 - By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	Trends in population and extinction risk of utilized species, including species in trade.	
	Trends in extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting.	
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use		
Target 5 - By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	Trends in fragmentation and degradation of natural habitats	
	Extinction risk trends of habitat dependent species in each major habitat type.	
Target 6 - By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and	Trends in population of target and by-catch aquatic species	

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	Trends in extinction risk of target and by-catch aquatic species <i>Over a 30-year period, total sturgeon catches in the Caspian Sea have declined dramatically - from 27 thousand tonnes to less than one thousand tonnes</i>	
Target 7 - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	Trends in area of forest, agricultural and aquaculture ecosystems under sustainable management.	
Target 8 - By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	Trends in water quality in aquatic ecosystems.	
	Trends in proportion of untreated wastewater discharged into the environment. <i>The volume of untreated wastewater discharged into the environment increased from 170 million cubic metres in 2000 to 220 million cubic metres in 2012.</i>	
	Trends in emission to the environment of pollutants relevant for biodiversity. <i>Atmospheric emissions remained constant: 1054 thousand tons/annum in 2005 to 1076 tons/annum in 2012.</i>	
Target 9 - By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage	Trends in the impact of invasive alien species on extinction risk trends.	

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
pathways to prevent their introduction and establishment.		
	Trends in policy responses, legislation and management plans to control and prevent spread of invasive alien species.	
Target 10 - By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	Trends in extent, and rate of shifts of boundaries, of vulnerable ecosystems.	
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity		
Target 11 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	Trends in representative coverage of protected areas and other area based approaches, including sites of particular importance for biodiversity, and of terrestrial, marine and inland water systems <i>Azerbaijan's current protected area system totals 892,546ha ha (~10.3% of the country) and comprises nine National Parks (322,306 ha); eleven State Nature Reserves (209,083 ha); and twenty four State Nature Sanctuaries (361,157 ha)</i>	
	Trends in protected area condition and/or management effectiveness including more equitable management	
Target 12 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	Trends in abundance and distribution of threatened species	
Target 13 - By 2020, the genetic diversity of	Trends in genetic diversity of	

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	cultivated plants, and farmed and domesticated animals and their wild relatives	
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services		
Target 14 - By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	Trends in benefits that humans derive from selected ecosystem services	
	Trends in area of degraded ecosystems restored or being restored <i>10,131 ha of forest habitat under active restoration</i>	
Target 15 - By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Status and trends in extent and condition of habitats that provide carbon storage	
Target 16 - By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	Not applicable	
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity-building		
Target 17 - By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	Trends in implementation of national biodiversity strategies and action plans, including development, comprehensiveness, adoption and implementation	

Aichi Biodiversity Target	Headline indicators used to determine state of progress of Azerbaijan in contributing to meeting the Aichi Biodiversity Target	Current state of progress (0-25%; 25-50%; 50-75%; 75-100%)
	<i>A more comprehensive NBSAP currently in preparation. The NBSAP is approved by the order of the President of the Republic of Azerbaijan.</i>	
<p>Target 18 - By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.</p>	Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan	
<p>Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.</p>	Trends in accessibility of scientific/ technical/ traditional knowledge and its application	
<p>Target 20 - By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.</p>	Trends in mobilization of financial resources	

3.2 The contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals

3.2.1 Access to quality water resources, specific weight of population (percent)

At present, drinking water resources in Azerbaijan - especially the waters of Kura and Araz - do not fully comply with basic biological and chemical indicators and affect the health of the population. Therefore taking strict measures in terms of improvement of drinking water supply is the priority of the Government. The Oquz-Gabala-Baku water pipeline, which was commissioned on 28 December 2010, is an important step in the quality drinking water supply of population of the country. The supply of this water pipeline with 5 cubic meters water flow capacity per second is maintained by 78 water wells drilled in the territory of Oquz rayon. As a result of implementation of this project works are performed to minimize damage on environment and biodiversity. The Water supply system in a number of cities must also be properly repaired, and some of them must be completely reconstructed. The water samples taken from wide-range of areas, especially from the main water resources of rural areas of Azerbaijan, currently do not meet with norms and standards of the World Health Organization.

3.2.2 Number of users of sewage systems

The supply of sewage systems in the country meeting modern sanitary requirements constitutes only 30% of the country. The main problem in this field is the unsatisfactory condition of sewage systems and treatment facilities technically. The main part of the territory of the country, especially the populations of rayons, discharge effluents directly to the environment. Discharge of active surface and aggressive substances may eventually adversely affect to biodiversity. Water-sewage projects in the centres of rayons were initiated over the 3 years under the State Programs “Socio-economic development of regions” and “Poverty reduction and sustainable development”, and sewage water management and discharging them to environment only after treatment in these projects.

3.2.3 Energy use ratio to GDP

Azerbaijan is still referred to as a vulnerable region in this area, despite the increased energy efficiency. While the current energy intensity price is 0.57 tne/1000USD in Azerbaijan, international average figure is 2 times less than this (0.3 tne/1000USD) and 3 times less in the developed European countries (0.18 tne/1000USD). Noting that this figure was 0.51 tne/1000USD in 2010, and 0.56 tne/1000USD in 2011. But this indicator was between 1,0-1.6 in 2007. However there are extensive opportunities to reduce the value of these indicators and reach to the level of developed countries.

3.2.4 Carbon gas emissions per capita

Based on the information the base year of 1990 in the developing 3rd National Data on climate changes, and about carbon gas emissions of the International Atomic Agency 13th for 1995-2000, the amount of carbon gas per capita calculated in tons had decreased from 6,04 to 3,69 in 1990-1997, but it escalated to 4,10 in 1999. This figure was 3.0 tons/year in 2010, 3.68 tons/year in 2011, and 3.78 tons/year in 2012. The application of “Green economy” and new technology developed in the sphere of low-carbon technologies will reduce the escalation of these figures in the near future.

3.2.5 Areas with forest cover

Total area of the lands of forest fund is 1040,7 thousand ha in Azerbaijan, and has not changed practically over the last 20 years. While the grassland covers of the land of forest fund was

874.2 thousand ha in 2003, these had increased very quickly and were 1008.3 thousand ha in 2010, and 1024 thousand ha in 2012.

3.2.6 Special weight of the protected areas established for biodiversity conservation

While the specially protected areas comprised 10% of the territory of a country in the international experience that figure was 5% in Azerbaijan in 2001. This area was 474.8 ha in 2003, composed 5.5% of the territory of the country, and 20 years later as a result of activities implemented by MENR overall area of the protected areas has achieved to 10.1% in 2010, and 10.3% in 2012. As a result of developed activities this indicator will reach to 14% in the following years.

3.2.7 Specific weight of the population using types of solid fuel

As coal is not used in Azerbaijan only wood may be referred to solid fuel. Acquisition and use of wood from forests is important for biodiversity. Certain part of the population of Azerbaijan is using wood as solid fuel. This figure was about 10.0% after 2006. 144.9 thousand tons of wood in 2010, 152.6 thousand tons in 2011, and 155.1 thousand tons in 2012 were combusted in domestic sector.

3.3 Lessons, challenges and priorities in the implementation of the Convention in Azerbaijan

The following is a synthesis of the key lessons, challenges and priorities for the implementation of the CBD in Azerbaijan:

There is a need to improve the integration of biodiversity conservation priorities into key State and National programs. The issues on biodiversity conservation have been generally designed in the regulations about administrative bodies in the level of Ministries and State bodies. This issue has been especially reflected among the duties of the ministries of Ecology and Natural Resources, Agriculture as well as Land and Cartography. However the agencies having a direct impact on the environmental degradation and consistently dealing with this issue must accelerate their activities. The organizations transferring the information about advanced technologies and scientific knowledge to sites and also systematically submitting the serious changes from the sites to the centre must build the work in the required level. Occasionally, replications are found in the action plans of central authorities. For example, in the forestry sector, even though the key issues included into the State program on the forest restoration and expansion there are no concepts related to sustainable use of forests in the given period. Practical activities must be continued in this sphere. “European Forests” initiative has been signed related to sustainable use of the forests in the country and there is a need to adopt new concepts. A high level state commission may be required to coordinate the implementation of biodiversity conservation strategies across all sectors.

There is a need to improve the capacity and resources to implement biodiversity conservation legislation, policies and programmes. While the requisite laws, policies and state programs are broadly in place, there is a significant gap in the actual implementation of legislated and planned activities.

There is a continue to improve the suite of national laws, regulations and guidelines on biodiversity and biological safety to better reflect best international practice. A wide-range of laws and legal-normative acts, as well as policy papers related to protection and use of natural resources have already been adopted over the past few years. A number of normative documents were developed and adopted by the central executive authorities identifying relevant measures in the field of environmental protection and biodiversity conservation (Ministry of Ecology and Natural Resources, ministry of Agriculture, Ministry of Internal Affairs) in order to reinforce the implementation of laws and normative document. However, the following laws and regulatory acts are still needed: Law on biodiversity protection; Law on bio safety; Law on national parks; Guidelines on establishment on the Fund of specially protected natural areas; Regulations on establishment of rehabilitation Centres in the natural parks; Regulations on establishment of boiler-breeding; Guidelines on establishment of boiler-breeding in the natural parks; and Regulations on the rehabilitation, multiplication and use of medicinal plants. The process of approximation of existing laws to the Conventions must also be continued.

There is a need to reduce the socio-economic dependency of rural populations on agriculture and harvesting of wild natural resources. Examples may include such as establishment of fishery farms and sale of bred fish products in the Kura-Araz River basins and some foothill regions.

There is a need to improve the collection, analysis and sharing of biodiversity information. As it is required by the Convention, it is important to establish an agency to deal with information exchange professionally. It is needed to develop a special statistical data registry meeting international standards. Priority fields must also include information about the biodiversity, number and species contents of rare and endangered fauna and flora species. Rich information is collected at the NAS Institute of Genetics, but due to lack of technical supply it is necessary to create a technical potential to establish an electronic database, its periodic update and dissemination. It is needed to launch a website to disseminate the collected information to the population at large. The potential exists to participatively develop biodiversity forecasts as a result of analysis of collected information and to disseminate them among stakeholders which provide opportunities for mitigation of its adverse effect. Generally, there is no service dealing with the exchange of information professionally as required by the Convention in the organizational structure. Access mechanism is also problematic to the information collected in the ministries. Ministry of Ecology and Natural Resources has superiority in this sphere. A number of information can be found in the Aarhus Centre set up in collaboration with the Ministry and OSCE, and in the website of the Ministry. Joining the county to the Aarhus Convention has opened ways to settlement of problems in the exchange of ecological information. Nevertheless, there is a need to improve administrative structures.

There is a need to enhance the scientific and research capacity in the field of biodiversity. This may include: systematically organising the outcomes of research activities performed in this sphere up to date and assessing their usefulness for application; applying pilots of the useful outcomes initially, and then deploy them in wider context; defining the appropriateness of the subjects of ongoing activities and their implementation levels with the biodiversity conservation level in the country and making necessary amendments to thematic plans; and stimulating scientific and research works covering all aspects of biodiversity conservation processes (physical, biological, social, economic and etc). Studies on social issues have a special importance in the Azerbaijan context. Social and economic aspects of environmental studies in Azerbaijan, and the role of social ecology in the sustainable development concept have been investigated in very few cases. Setting-up such studies may play a big role in the capacity building. Eventually, all activities being implemented in this sphere must be placed in the information base, and all tools must be used to deliver the available knowledge to their address for the use of stakeholders.

There is a need to develop curriculum and training programs in terms of biodiversity conservation at all levels of the population, and realizing them at the local, regional and national level. National aspects must be focused in the curriculum. Training of the personnel capable for collection, processing and exchange, as well as strengthening early-warning systems must be highlighted in this curriculum. It is necessary to organize the attendance of personnel in specialization courses (training) systematically to organize the exchange of experiences in the International and regional levels in the struggle for biodiversity conservation and they must be implemented in the pre-planned level.

There is a need to collate and profile information (activities, organisational structure, skills, capacity) on stakeholders (including national and local government, scientific and research institutions, media, private sector and non-governmental organizations) in the biodiversity sector.

There is a need to expand the reach of awareness-raising programs. The involvement of NGO and mass-media remains under-utilized. Special support of the community is weak due to lack of funding and technical shortfalls and as a result weak practical activity. However the possibility of getting this support is high under the circumstances of correctly built advocacy and expanded practical activity. Therefore the representatives of NGO's and mass-media bear big responsibility, and in view of it, they require a strict financial support for them. There should be co-ordinated activities in the public awareness, environmental education and co-ordinated activity in the work of mass-media outlets, and in the National and local levels. One of the most significant ways of shaping this co-operation is implementation of joint projects. Stakeholder analysis show that co-ordination and co-operation do not entirely meet with the required level in the field of biodiversity conservation in the country. The level of awareness almost does not exist in the sites about the Convention materials, laws, regulatory documents and Programs. As donors funding the resolution of this problem or International agencies willing to invest on this field are unable to imagine the related situation clearly they feel challenged to finance the resolution of the problems. It is necessary to have specialized publications, permanent television and radio programs and electronic network in the sphere of biodiversity conservation.

There is limited coordination of biodiversity conservation activities across the range of different organisations. A strict co-ordination must be launched among all actors involved in the organization of biodiversity conservation work in the Convention obligations, those dealing with all aspects of the related policy issues such as economic, education, social and community. Co-operation of various stakeholders is important to conduct the works systematically and consistently. This co-operation must prove itself both in the program design and in its implementation in the national level. At present, biodiversity conservation takes place in the National Programs on "Socio-economic development of regions", "Ecologically sustainable socio-economic development", "Restoration and expansion of forests", as well as State Program on "Poverty reduction and sustainable development". Such types of activities must be co-ordinated to efficient use of financial and technical resources and to avoid of duplications.

There is a need to improve the working relationships with NGOs. The potential of non-governmental organizations is a big source to organize the work of biodiversity conservation in the country and shape the public opinion in the related field. The activities of non-governmental organizations show that Azerbaijan Zoologists Society, Mammologists Society, "Ekosfera SEC" and other organizations deal with implementation of biodiversity related projects. The advocacy work of biodiversity maintenance problem has not been built as required. The activities of non-governmental organizations in this sphere have not been included into the priority activity orientations of International Funds operating in this sphere.

Communication, exchange of information and sharing of experiences are poorly organized among various stakeholders in this issue.

There is a need to develop and implement strategies to conserve rare and endangered species. In some cases, such as forests, this will require an improvement in the sustainable management of the habitats of these species.

The following proposals have been included into the process of revising and updating the NBSAP (2015-2020) (see 2.2 above).

Proposal	Implementation period
Extra measures to further reinforce control over more sensitive ecosystems	2015-2020 regular
Continue in-house and international training to build capacity of personnel on environment, including on biodiversity spheres	2015-2020 regular and continuously
Based on feedbacks of specialists develop a relevantly new method to conduct precise ecological and biological studies, assess and monitor the status of biodiversity	Until 2017
Continue activities according to AICHI targets	Until 2020 and continuously
Improve biodiversity indicator defining methods	Until 2016
Organize educational activities, new competitions for university students and schoolchildren, frequently organize educational meetings among regional populations about potential threats upon potential losses in biodiversity	2015-2020 continuously
Continuously co-operate with specially protected areas of other countries and experience sharing;	Until 2020 and continuously
Develop comprehensive activities for restoration of bio-soils	2015-2020
Perform works such as restoration of old forests to improve bio-productivity and enhance focus on the shelters of species	Permanent
Increase the activities focused on issuance of “stop” order to inefficient use of melioration, drying and pollution	Permanent
Implement activities in the urban areas to focus on biodiversity conservation	Continuously
Study the establishment of modern identification laboratories of genetically modified organisms	Until 2016
Conduct surveys related to genetically modified organisms, ensure student audience in universities, also education of population, increase urgency of the topic	Regularly until 2020
Special marking of genetically modified organisms	Until 2017

APPENDIX I: Information related to the reporting party and development of the Fifth National Report

Information concerning reporting Party

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DATE OF SUBMISSION	SUBMITTED ON THE 30 TH OF MARCH 2014 TO THE SECRETARIAT OF CBD

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Institutional stakeholders

Sectors of Report	Ministry, Committee, Agency and Organization	Role in the preparation of report and extent of involvement
Biodiversity conservation	Ministry of Ecology and Natural Resources	Executing agency of the preparation of the report and main contributor of information.
Academia	National Academy of Sciences	Contributor of information and participant in consultative meetings
Sustainable agriculture	Ministry of Agriculture	Contributor of information
Climate change	Ministry of Ecology and Natural Resources	Executing agency of the preparation of the report and main contributor of information
Non-governmental Organization	Ruzgar (NGO)	Contributor of information and participant in consultative meetings.
Energy	Ministry of Industry and Energy	Contributor of information.
Fisheries	Ministry of Ecology and Natural Resources	Executing agency of the preparation of the report and main contributor of information
Forestry	Ministry of Ecology and Natural Resources	Executing agency of the preparation of the report and main contributor of information
Forestry	State Committee on Land and Cartography	Contributor of information,
Legislation	Ministry of Justice	Legislative support
Awareness and Education	Ministry of Education	Support in awareness-raising and education

Specialist reports prepared by national consultants in support of Fifth National Report³

1. *Biodiversity Conservation* – status report (February, 2014)
2. *Biodiversity Mainstreaming* – status report (February, 2014)
3. *Biodiversity Impact Management* – status report (February, 2014)
4. *Biodiversity Capacity* – status report (February, 2014)

³ Technical reports are not appended to this Fifth National Report – copies are however available on request.

APPENDIX II: Further sources of information

Bilateral co-operation agreements

- Cooperation agreement on environmental protection between the Government of the Republic of Azerbaijan and *Government of Georgia*, 18 February 1997.
- Memorandum of Understanding on Curricula on reduction of greenhouse gasses in the Caspian Basin for 2002-2005 between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Public Administration Institute of Canada*, dated 4 April 2003.
- Cooperation Agreement with the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *OSCE Office in Baku* (Establishment of Public environmental information Centre), dated 22 September 2003.
- Memorandum of understanding between the government of the Republic of Azerbaijan and the government of *Denmark kingdom* on implementation of Kyoto protocol of the United Nations framework convention on climate change, dated 8 December 2004.
- Agreement on environmental protection between the Government of the Republic of Azerbaijan and *Government of Turkey Republic*, 9 July 2004.
- Memorandum of Understanding between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Department of Environment of Islamic Republic of Iran*, 5 August 2004.
- Memorandum of Understanding on cooperation related to environmental protection between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *World Wide Fund for Nature (WWF)*, 13 October 2004.
- Memorandum of Understanding on development of “Ecological Conservation Plan for South Caucasus”, between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *German Financial Cooperation (KFW)*, dated 25 October 2004.
- Cooperation Agreement with the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Republic of Moldova*, dated 22 February 2007.
- Protocol on Technical Cooperation between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Egyptian Mineral Resources Authority of Arab Republic of Egypt*, dated 7 May 2007.
- Cooperation Agreement on environmental protection between the *Republic of Ukraine* and the Republic of Azerbaijan, 5 September 2007.
- Cooperation Agreement on environmental protection between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and the *State Committee on Environmental Protection*, dated 11 September 2008.
- Memorandum of understanding between the Republic of Azerbaijan and *United Nations Development Programme* in the field of carbon foundation millennium goals, dated 7 April 2009.
- Cooperation Agreement on environmental protection with Republic of Azerbaijan and *Republic of Latvia*, dated 25 June 2009.
- Memorandum of Understanding between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *German Technical Cooperation Organization (GTZ)* of the Federal Republic of Germany on “Cooperation in the field of sustainable use of nature resources”, dated 17 June 2009.
- Memorandum of Understanding between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Korea Environmental Industry and Technologies Institute* on the development of Environment Management Plan in Azerbaijan, dated 16 September 2009.

- Cooperation Agreement on environmental protection between the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan and *Ministry of Environment of Romania*, dated 28 September 2009.

Orders of the President of the Republic of Azerbaijan

- Order of the President of the Republic of Azerbaijan on Establishment of Zoology Park, No. 109, dated 26 December 2008.
- Order of the President of the Republic of Azerbaijan on Construction of Zoology park in the territory of Absheron region, No. 1673, dated 5 August 2011.
- Order of the President of the Republic of Azerbaijan on Additional Measures related to Greenery Planting of Baku city, No, 218, dated 3 April 2009.
- Order of the President of the Republic of Azerbaijan on Implementing activities for complex hydro meteorological and ecological studies on Bazarduzu-Shahdagh-Tufandagh ecosystem in Greater Caucasus, No. 110, dated 27 December 2008.
- Order of the President of the Republic of Azerbaijan on Improvement measures of management of greeneries establishment in the Republic of Azerbaijan No. 2868, dated 13 June 2008.
- Order of the President of the Republic of Azerbaijan about some measures on protection of pollution of the Caspian Sea, No. 2244, dated 20 June 2007.
- Order of the President of the Republic of Azerbaijan about additional measures on protection of pollution of the Caspian Sea, No.2867, dated 13 June 2008.
- Order of the President of the Republic of Azerbaijan on establishment of Goygol National Park of the Republic of Azerbaijan, No. 2744, dated 1 April 2008.
- Order of the President of the Republic of Azerbaijan on establishment of Korchay National Park of the Republic of Azerbaijan No.2745, dated 1 April 2008.
- Order of the President of the Republic of Azerbaijan on establishment of Hirkan National Park of the Republic of Azerbaijan, No. 81, dated 9 February 2004.
- Order of the President of the Republic of Azerbaijan to assign the administrative body in the Republic of Azerbaijan to contact with other parties joined to the Convention on international trade in endangered species of wild fauna and flora (CITES), No. 188, dated 8 July 1999.
- Order of the President of the Republic of Azerbaijan on approval of the State Programme on Efficient Use of Summer-Winter Pastures, Hayfields and Prevention of Desertification in the Republic of Azerbaijan, No. 222, dated 22 May 2004.
- Order of the President of the Republic of Azerbaijan on establishment of Altiagaj National Park of the Republic of Azerbaijan No. 365, dated 31 August 2004;
- Order of the President of the Republic of Azerbaijan on establishment of EldarShamy National Preserve of the Republic of Azerbaijan No.550, dated 16 December 2004.
- Order of the President of the Republic of Azerbaijan on establishment of Absheron National Park of the Republic of Azerbaijan No. 622, dated 8 February 2005.
- Order of the President of the Republic of Azerbaijan on approval of the State program on the use of alternative and renewable energy sources in the Republic of Azerbaijan, No. 462, dated 21 October 2004.
- Order of the President of the Republic of Azerbaijan on assignment of the authorised body of the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, envisaged in the Convention on the Transboundary Effects of Industrial Accidents, No. 729, dated 1 April 2005.
- Order of the President of the Republic of Azerbaijan on approval of the National Program on Environment in the Republic of Azerbaijan, No. 1152, dated 18 February 2003.

- Order of the President of the Republic of Azerbaijan on Establishment of the Shahbuz State Nature Preserve and Ordubad National Park, No. 1249, dated 16 June 2003.
- Order of the President of the Republic of Azerbaijan on Approval of the National Strategy and Plan of Action on Conservation and Sustainable Use of Biodiversity in Azerbaijan, No. 1368, dated 24 March 2006.
- Order of the President of the Republic of Azerbaijan on Approval of the Comprehensive Action Plan on improving the environmental situation in the Azerbaijan Republic for 2006-2010, No. 1967, dated 28 September 2006.
- Order of the President of the Republic of Azerbaijan on establishment of Shahdagh National Park of the Republic of Azerbaijan No. 1814, dated 8 December 2006.
- Order of the President of the Republic of Azerbaijan on establishment of Samur-Yalama National Park of the Republic of Azerbaijan No. 2518, dated 5 November 2012.

Laws of the Republic of Azerbaijan

- Law of the Republic of Azerbaijan on Ecological Safety, No. 677-IQ, dated 8 June 1999.
- Law of the Republic of Azerbaijan on Environmental Protection, No. 678-IQ, dated 8 June 1999;
- Law of the Republic of Azerbaijan on Atmosphere, No. 109-IIQ, dated 27 March 2001.
- Law of the Republic of Azerbaijan on Fishing, No. 457-IQ, dated 27 March 2001.
- Law of the Republic of Azerbaijan on Radiation Safety of the Population, No. 423-IQ, dated 30 December 1997.
- Criminal Code of the Republic of Azerbaijan: Ecological Crimes.
- Law of the Republic of Azerbaijan on Fauna, No. 675-IQ, dated 4 June 1999.
- Law of the Republic of Azerbaijan on Specially protected natural areas and objects, No. 840-IQ, dated 24 March 2000.
- Land Code of the Republic of Azerbaijan.
- Law of the Republic of Azerbaijan on Phytosanitary Control, No. 102-IIIQ, dated 12 May 2006.
- Law of the Republic of Azerbaijan on Selection Achievements, No. 197-IQ, dated 15 November 1996.
- Law of the Republic of Azerbaijan on Seed Farming, No. 257-IQ, dated 11 March 1997.
- Law of the Republic of Azerbaijan on Getting information about environment, No. 270-IIQ, dated 12 March 2002.
- Law of the Republic of Azerbaijan on Sanitary and epidemiologic wellbeing, No. 371, dated 10 November 1992.
- Law of the Republic of Azerbaijan on Environmental education and enlightening, No. 401-IIQ, dated 10 December 2002.
- Collection of laws of the Republic of Azerbaijan. 2013
- The list of legislative documents in the biodiversity sphere.

Decrees of the President of the Republic of Azerbaijan

- Decree of the President of the Republic of Azerbaijan on Approval of the “General regulations of State natural and biosphere reserves”, and “General regulations of the Republic of Azerbaijan on National Parks”, No. 531, 4 July 2001.
- Decree of the President of the Republic of Azerbaijan on the measures for conservation and expansion of natural resources of liquorice, No. 544, dated 18 January 1992.
- Decree of the President of the Republic of Azerbaijan on approval of the Regulations about Hirkan National Park of the Republic of Azerbaijan, No. 57, dated 24 April 2004.

- Decrees of the President of the Republic of Azerbaijan on approval of the Regulations about National Parks of the Republic of Azerbaijan, No 106, 3 August 2004 (Regulations about Zangazur National Park named after Academician Hasan Aliyev of the Republic of Azerbaijan, Shirvan National Park of the Republic of Azerbaijan, and Aqqol National Park of the Republic of Azerbaijan).
- Decree of the President of the Republic of Azerbaijan on approval of the Regulations about Altiaqaj National Park of the Republic of Azerbaijan No. 147, dated 23 November 2004.
- Decree of the President of the Republic of Azerbaijan on approval of the Regulations about Absheron National Park of the Republic of Azerbaijan No. 227, dated 27 April 2005.
- Decree of the President of the Republic of Azerbaijan on approval of the Regulations about Samur-Yalama National Park of the Republic of Azerbaijan No. 929, dated 25 June 2013.
- Decree of the President of the Republic of Azerbaijan on Further liberalization of foreign trade, No. 609, dated 24 June 1997.
- Decree of the on improvement of rules for issuance of special permit (license) for certain types of activities, No. 782, dated 2 September 2002.

Decisions of the Cabinet of Ministers of the Republic of Azerbaijan

- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of some normative and legal acts related to specially protected natural areas and objects, No. 2, dated 4 January 2001.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on About approval of Rules on phytosanitary protection of the forest fund against pests and diseases No. 16, dated 9 February 1999.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Payments for the use of natural resources, norms of payments for environmental contamination No. 122, dated 3 March 1992.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the classification of the type of information to be limited about the environment, and Classification of the government authorities receiving request or inquiry for the type of information to be limited about the environment, No. 26, dated 15 February 2003.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the rules for information delivery and implementation of the state statistics in the field of environmental conservation, No. 40, dated 22 February 2001.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the Regulations on the EldarShamy Nature Reserve No. 43, dated 17 March 2005.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan about the Regulations on the state fund for environmental conservation, Rule to carry-out ecological audit, and the Rule on funding the state ecological expertise, No. 41, dated 22 February 2001.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the Rule to sign a contract with the person asking for environmental information, and Rule the analysis, retention, update of environmental information, listing of its objects and registry and conducting its registration, No. 60, dated 13 May 2003.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on the Rule of compensation of the costs incurred by the state for destruction of the seed grains as a result of preventive and response action to prevent quarantine objects from dispersal, No. 75, dated 10 July 1997.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Some normative and legal acts related to the Land Code of the Republic of Azerbaijan, No. 42, dated 15 March 2000.

- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Some normative and legal acts related to the Land Code of the Republic of Azerbaijan, No. 79, dated 1 May 2000.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the Division for the activity zones where separate regimes of special protection are applied in the territories of Hirkan, Shirvan, Aqgol, Altiaqaj and Absheron national parks, No. 81, dated 15 March 2006.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Establishment of the Gakh State Natural Restricted Area, No. 84, dated 16 June 2003.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on the Rules to identify information delivery funding sources and the amount of payment, No. 88, dated 7 July 2003.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of the Regulations on the state monitoring of the environment and natural resources, No. 90, dated 1 July 2004.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of identification of flood zones, the sizes of their protective belts and boundaries, and their use, No. 99, 27 July 2004.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Approval of new payment normative for compensation of the damage to the environment as a result of illegal development of some mining fields, No. 239, 28 December 1998.
- Decision of the Cabinet of Ministers of the Republic of Azerbaijan on Establishment of inter-city commission for environmental education and enlightening and Regulations on the Commission, No. 120, dated 22 September 2003.
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